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"Interdiscipline and Transdiscipline: Challenges in the XXI Century"



Vol. 2

PROCEEDINGS

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THE EFFECT OF DAILY PHYSICAL EDUCATION LESSONS ON HUNGARIAN STUDENT'S PHYSICAL ACTIVITY LEVELS AND BODY COMPOSITION

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Abstract

Lifestyle, physical activity level and nutritional habits as well as environmental factors are having a greater and greater detrimental effect on the health of various populations. In the present study we systematically researched the physical status of schoolchildren.

It is well known that as children grow up, the amount of spontaneous physical activity they perform decreases as they have more mental tasks to do these negative factors can be offset with daily physical education.

We measured children participating in physical education on a daily basis, consisting of 5th (10-11 years old) and 9th (14-15 years old) grade students and control groups of 4th (9-10 years old) and 8th (13-14 years old) grade students, respectively, for a total of 196 persons (94 girls and 102 boys). Habitual physical activity was obtained with Actigraph, (GT1M/GT3X) and body fat percentage was calculated from anthropometrical measurements.

As expected, we were able to observe a linear correlation between the physical activity levels and the body composition of the participants. The more time the subjects spent performing MVPA (Moderate and Vigorous Physical Activity), the less body fat they had. The recommended MVPA is a minimum of one hour per day, but these Hungarian children had two hours of MPVA per day. Our results lead us to conclude that ninety minutes of additional physical education per week for 7-8 months cannot be considered

sufficient for a full impact analysis nor for schoolchildren's physical activity needs or body composition, though an increase in the amount of time spent in physical education classes shows beneficial effects for these children.

Keywords: Daily physical education (PE), physical activity, Actigraph GT1M/GT3X, body fat

Introduction

According to a study which compares 850 Journal articles, schoolchildren should do sixty minutes per day of intensive, varied and generative physical activity (Strong et al., 2005).

Physical activity is not only necessary for good mental and physical health, but aids in helping people avoid obesity. It was difficult to objectively determine the amount of time subjects spent in sedentary and vigorous states. Activity was measured with subjective methods where the reliability and replicability are questionable. Ten to twelve (10-12) year-old children's physical activity levels were measured in five European countries. The objective in this international research was to compare the different countries and genders. The ages of ten to twelve seemed to be the most dangerous ages where children start spending a lot of time in inactive state and less time in active state. Actigraph was the most reliable, replicable and feasible method to measure physical activity, but the only negative factor regarding its use is that its sensors don't measure arm movements, during swimming activities and they can not differentiate between sitting, lying, and still standing. On the other hand, they underrate the intensity of cycling and other sports. In several cases the measurements were not valid, which led to a marked decrease in the number of the subjects (Verloigne et al., 2012).

Nowadays childhood obesity is becoming more and more frequent, and its correlation with physical activity has not been compared enough in the literature. A study in San Diego researching 900 eleven to fifteen year-old children highlights this insufficiency. According to this American study, being overweight correlates negatively with the a lack of MVPA (Moderate and Vigorous Physical Activity) (Patrick et al., 2005).

A study in Philadelphia measuring inner-city school children compares gender, ethnicities and weight differences to physical activity levels, in addition to school grades. 470 children living in the center of Philadelphia took part in the study. They spent 48 minutes in MVPA on average, which was 6% of the whole wear time of the actigraph. 60% of the time was spent in the sedentary zone and 31% with light physical activity. Boys spent significantly more time in the intensive activity zone than girls. Fifth grade students spent significantly more time in the intensive zone than fourth and sixth grade males. Sixth grade girls spent less time in MVPA than

fifth and fourth grade females. Overweight children spent more time in the inactive zone than children of normal weight. 24.3% of the whole sample performed the recommended activity amount of the Philadelphia's public health policy. These conclusions highlight the fact that physical activity requires effective dissemination among inner-city children. More secure playgrounds next to schools and churches could raise the physical activity level of the children. Another method could include adjusting the quality and quantity correction of PE lessons (Trost et al., 2012).

Subjects

196 subjects, including 94 girls (N_G) and 102 boys (N_B), took part in this study in which their physical activity levels were monitored with accelerometer in the spring of 2013. The effect of everyday physical education on physical activity and childhood obesity was the main objective of the research. Fifth and ninth grade school children (participating in daily PE lessons) were compared with fourth and eighth grade (not participating in daily PE lessons) children. There were 85 fourth and fifth grade students with an average age of 11.24 ± 0.62 years. In this cluster, the daily activity of 34 girls and 51 boys was monitored. There were 34 fourth grade students and 51 fifth grade students. There were 111 eighth and ninth grade students with an average age of 15.2 ± 0.72 . In this age cluster we analyzed 60 girls and 51 boys, of which 51 were from the eighth grade and 60 were from the ninth grade. More than the half of the students were taking part in sport activities outside school.

The research was anonymous and conducted with volunteers who got written permission to participate in the study, in accordance with the Helsinki declaration. The children were from the schools of the Capital, cities, small towns and villages.

Anthropometrical analysis

Anthropometrical measurements were taken in line with the recommendations of International Biological Program (Weiner and Lourie, 1963). The present study followed the Pařízkova model (Fat%) (Pařízková, 1963) for evaluating body composition. For this measurement, we needed the body mass and the five skinfolds (biceps, triceps, subscapula, suprailiac and medial calf) with ISAK methodology.

Actigraph

Habitual physical activity was measured with triaxial accelerometer (ActiGraph wGT3X). The sensor is 3.8 cm by 3.7 cm by 1.8 cm in dimension. It can save 16 MB data, which is 40 days of activity, stepcounts, MET and activity zone measures. Actigraph GT3X+ measures the

movements and their amplitude of three space dimensions. For the analysis of daily activity and its clustering, the sensor measured counts. One count is a sign which is strong enough to be digitalized from the actigraph. The subjects wore the sensors for five days for 24 hours. One of the five days was always a weekend day. The children wore the sensor on the right side of their hips and avoided wearing it in water. To analyze our data, we measured daily activity from 6am to 8pm in five epoch intervals. Activity levels could be divided into five groups (Freedson et al., 2005): Sedentary, greater than 149 counts/minutes; light activity, 150-499 counts/minutes; moderate, 500-3999 counts/minute; vigorous, 4000-7599 counts/minute; and very vigorous activity, greater than 7600 counts/minute. Time spent in activity zones are given in minutes. MVPA means moderate to vigorous physical activity; from the five days of data we can evaluate one-day averages which can be compared with the International Recommendations.

Statistics

To compare the genders we used a two sampled t-test for independent samples. For a comparison of the subgroups when F test was significant we used Tukey post hoc analyses. For correspondence analysis we used correlation analysis. Level of significance was $p < 0.05$.

I.

We could observe significantly higher MVPA values with the boys than with the girls (647.55 ± 220.05 vs. 575.16 ± 197.35 minutes; $p = 0.016$) in the whole sample ($N_B = 102$ vs. $N_G = 94$). The girls' sedentary behavior wasn't significantly higher than the boys (3210.6 ± 382.73 vs. 3235.47 ± 448.88 minutes). For the different age groups we could observe a significantly higher sedentary behavior level in the case of the older children ($p = 0.000$) (**Figure 1**).

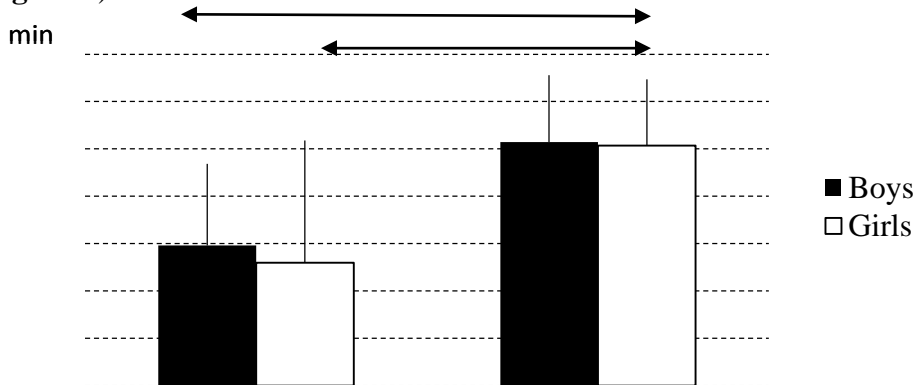


Figure 1. Comparison of the sedentary behavior of 10 to 12 year-old and 13 to 15 year-old students (↔significant differences between the age groups)

The boys in the younger grades spent significantly more time in MVPA than the girls of the same age ($B_{4-5} 750.48 \pm 193.28$ vs. $G_{4-5} 644.65 \pm 203.42$; $p=0.000$). In the older grades there were no significant differences between the boys and girls ($B_{8-9} 544.63 \pm 197.08$ vs. $G_{8-9} 535.78 \pm 184.09$). Younger boys and girls spent significantly more time in MVPA than older children (boys: $p=0.000$; girls: $p=0.043$) (**Figure 2**).

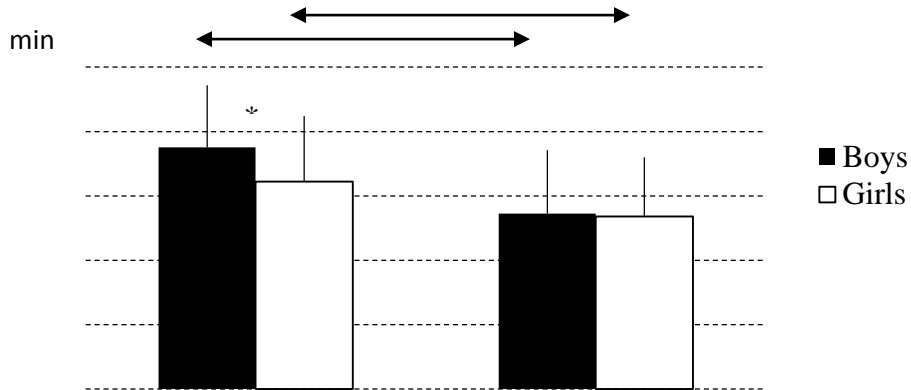


Figure 2 Comparison of the younger (10 to 12 years old) and older students' (13 to 15 years old) MVPA (*significant differences in gender; ↔ significant differences between the age groups)

We performed more analyses to see the effect of daily physical education training on children. In regards to the whole sample, boys spent less time on average at a sedentary level than girls, except for ninth graders. In comparing the times spent in MVPA, we could observe that boys spent more time at this level, with the exception of the 9th grade students (**Figure 3**).

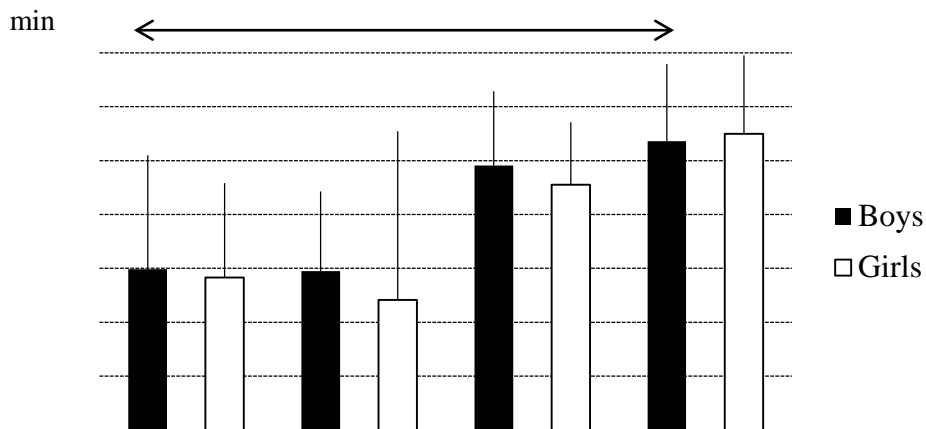


Figure 3. Sedentary behavior of the classes and genders

The body fat percentage of the boys was significantly lower in the whole sample ($FAT\%_B=19.32\pm5.85$ vs. $FAT\%_G=23.25\pm5.13$). We could observe a significantly lower fat percentage when comparing 9th grade boys and girls (Grades 4-5: $FAT\%_B=19.43\pm5.90$ vs. $FAT\%_G=20.93\pm5.36$ and grades 8-9: $FAT\%_B=19.20\pm5.84$ vs. $FAT\%_G=24.56\pm4.54$; $p=0.009$). The 9th grade girls had an even significantly higher fat percentage than the younger females (**Figure 4**).

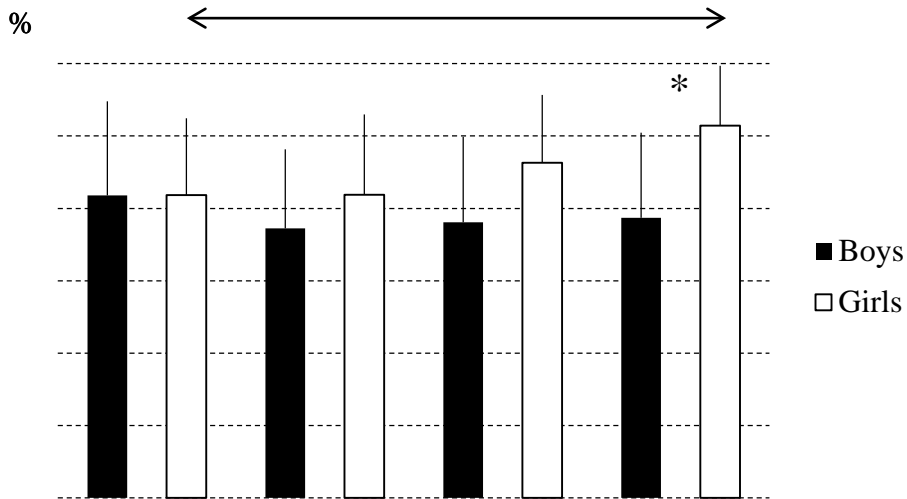


Figure 4 Body fat percentages of the genders and classes (*significant differences in gender; ↔ significant differences between the age groups)

For the different levels of habitual activity compared with relative fat mass we were able to observe a negative correlation between them in the whole sample, and in girls it was especially significant. In the older children this correlation was not significant (**Table 1**). Sedentary behavior and body fat percentage showed a positive moderate correlation in the case of girls and no correlation was found in boys.

Table 1 The correlation between fat percentage and time spent at various activity levels (significant correlations in italics)

	Fat% (whole sample)	Fat% (10-12 years)	Fat% (13-15 years)	Fat% (boys)	Fat% (girls)
Sedentary	<i>0.16</i>	0.05	0.12	0.04	<i>0.3</i>
Light Intensity	-0.23	-0.16	-0.12	-0.06	<i>-0.31</i>
Moderate Intensity	-0.24	-0.20	-0.07	-0.06	<i>-0.27</i>
Vigorous Intensity	-0.26	<i>-0.41</i>	-0.13	<i>-0.24</i>	<i>-0.21</i>
Very Vigorous Intensity	-0.19	-0.19	-0.23	<i>-0.25</i>	<i>-0.28</i>
MVPA	-0.2	-0.27	-0.1	-0.11	-0.29

The different amounts of physical education activity didn't show any significant differences in the compared groups (for fourth, fifth, eighth, and ninth grade students) with regards to habitual activity and relative fat percentage.

Conclusion

Activity levels and body composition showed the following correlation: the more time the subjects spent in MVPA, the less relative fat percentage they had.

In the study where European children were measured very few subjects reached the daily 60 minutes in MVPA and they spent daily 8 hours in inactive zone on average. Boys did a few more physical activity and they could observe differences among the countries (Verloigne et al., 2012).

Another European research obtains that 15 years old adolescents spend 58 in MVPA zone daily (girls spend 50 and boys 66 minutes). Those children who don't reach the daily 10 minutes in MVPA have more chance to be obese. According to the study daily 90 minutes of MVPA is recommended in Canada, which is also necessary to the European children (Martinez-Gomez et al, 2010).

According to a former Hungarian study, 96% of girls and 92% of boys spent the recommended sixty minutes or more in MVPA. These 11 year-old children from the capital city of Hungary (n=53) spent 68 minutes per day on average in MVPA over the course of the study. There were no significant differences between the activity of the boys and the girls (Uvacsek et al, 2011). In our study the children spent 118,18 minutes in MVPA on average. From our research we were able to conclude that from the beginning of primary school to the beginning of high school, boys spend more time in MVPA than girls, and we could observe less time being spent at a sedentary level in the case of the boys. Physical activity is getting less by growing up, but without daily physical education this decrease will be more drastical.

Based on age and gender differences, we could see a relationship between less activity and more body fat, especially in girls. Based on these findings, we recommend a gender- and age-differentiated physical education lesson, which takes into account the individual. This new PE lesson should change as the children are getting older. The study has also been designed with a longer follow-up period.

Our results shows that the first seven to eight months of daily physical education, which means 90 minutes more physical activity per week is not enough to show the positive effects on habitual physical activity and obesity, but we can obtain positive changes with regards to activity levels and body composition.

Acknowledgement:

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References:

- Evenson, K.R., Catellier D.J., Gill K., Ondrak, K.S., McMurray, R.G. (2008): Calibration of two objective measures of physical activity for children. *Journal of Sports Sciences*, 24: 14. 1557-65.
- Freedson, P., Pober, D., Janz, K.F. (2005): Calibration of Accelerometer Output for Children. *Official Journal of the American College of Sports Medicine, (Suppl)-S523/0*. 523-530.
- Parízková, J. (1961): Total body fat and skinfold thickness in children. *Metabolism*, 10: 794-807.
- Patrick, K., Norman, G.J., Calfas, K.J., Sallis, J.F., Zabinski, M.F., Rupp J., Cella, J. (2004): Diet, Physical Activity, and Sedentary Behaviors as Risk Factors for Overweight in Adolescence. *Archives of Pediatrics and Adolescent Medicine*, 158: 385-390
- Strong, W.B., Malina, R.M., Blimkie C.J.R., Daniels, S.R., Dishman R.K., Guton, B., Hergenroeder A.C., Must, A., Nixon, P.A., Pivarnik, J.M., Rowland, T., Trost, S., Trudeau F. (2005): Evidence based physical activity for school-age youth. *The Journal of Pediatrics*, 146: 732-7
- Syvä Oja, H.J., Kantomaa, M.T., Ahonen, T., Hakonen, H., Kankaanpää, A., Tammelin, T.H. (2013): Physical Activity, Sedentary Behavior, and Academic Performance in Finnish Children. *Official Journal of the American College of Sports Medicine*, 45: 11. 2098-2104.
- Trost, G.S., Mccoy, T.A., Vander Veur, S.S., Mallya, G., Duffy, M.L., Foster, G.D. (2012): Physical Activity Patterns of Inner-City Elementary Schoolchildren. *Medicine & Science in Sports & Exercise*, 14. 470-474
- Uvacek, M., Tóth, M., Ridgers, N.D. (2011): Examining physical activity and inactivity in 9–12 years old children. *Acta Physiologica Hungarica*, 3. 313-320.
- Verloignel, M., Van Lippevelde, W., Maes, L., Yildirim, M., Chinapaw M., Manios, Y., Androustos, O., Kovács, É., Bringolf-Isler, B., Brug, J., De Bourdeaudhuij, I. (2012): Levels of physical activity and sedentary time among 10- to 12-year-old boys and girls across 5 European countries using accelerometers: an observational study within the ENERGY-project. *International Journal of Behavioral Nutrition and Physical Activity*, 9: 34.

FUTURE CARDIAC EVENTS IN NORMALLY DIAGNOSED GATED MYOCARDIAL PERFUSION SPECT (GSPECT)

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Abstract

Coronary heart disease (CHD) is a major cause of mortality and morbidity in Europe and USA and its management consumes a large proportion of national healthcare budgets. Many studies had tested the prognostic value of a normal myocardial perfusion scintigraphy; they concluded that a normal MPI study is associated with a very low rate of future cardiac events. In view of the above this study is designed to determine the risk of future cardiac events after normal MPS in local population.

Methods: This was a retrospective observational registry performed in a single center in the Kingdom of Saudi Arabia. The data were collected from the nuclear medicine database identifying all the reported normal myocardial perfusion scans between January 2008 and December 2011 .

Results: There were 290 patients identified with normal cardiac nuclear scans in the pre-specified time frame. Basic patient demographics were outlined and the patients' charts were reviewed looking for any major cardiac events such as MI or sudden death. Mean follow up was 14.8 months. There were 2 patients that were admitted with NSTEMI and went on to have diagnostic angiograms. One of those two patients underwent percutaneous coronary intervention with stenting. The other patient had non-obstructive CAD and was advised for medical management only. These findings are consistent with a 0.7% risk of cardiac events after a negative scan

Conclusion: The above findings demonstrate that the risk of major cardiac events after a negative nuclear cardiac scan is low and is in keeping with the international statistics available.

Keywords: Future events in normal MPI

Introduction

Coronary heart disease is the most common cause of death in the United States (US) and Europe. [1], Acute coronary syndrome (ACS), a common complication of coronary heart disease, is associated with more than 2.5 million hospitalizations worldwide each year.[2] ACS describes clinical disorders ranging from ST-elevation myocardial infarction (STEMI) to non-ST-elevation myocardial infarction (NSTEMI) and unstable angina (UA).[3] It is estimated that a myocardial infarction (MI) occurs every 34 seconds in the US, and that one person dies each minute from a major coronary event.[4] It is a major public health problem worldwide. To our knowledge, there is no national data available from community based studies on prevalence of CAD in the Kingdom of Saudi Arabia (KSA). A study done by Al-Nozha MM and colleagues [5] about the status of Coronary artery disease in Saudi Arabia concluded that the overall prevalence of CAD in KSA is 5.5%. They suggested a national prevention program at community level as well as high risk groups should be implemented sooner to prevent the expected epidemic of CAD that we are seeing,

Many non-invasive techniques are available for the diagnosis of viable myocardium. Among these nuclear cardiology techniques are the most commonly used approach. Several nuclear imaging procedures are valuable in the diagnosis and management of heart disease, and collectively nuclear cardiology procedures are the most commonly performed studies in nuclear medicine, constituting about 40% of the total for the entire field [6]. A negative study excludes myocardial injury [7].

Many studies had tested the prognostic value of a normal myocardial perfusion scintigraphy, While in general the overwhelming majority of patients with normal MPS are low risk, it is important to point out that the precise level of risk after normal MPS varies widely and in many situations, exceeds the <1% threshold level [8].

This study is designed to determine the risk of future cardiac events after normal MPS in local population and the influence of clinical risk factors over the rate of future cardiac events.

The aim of this study is to determine the risk of future cardiac events after a normal myocardial perfusion scan (MPS) in the Saudi population and compare it with other similar studies that have been done in different population groups.

Materials and methods

Study Population

Chart review of all patients referred to the department of nuclear medicine for Myocardial Perfusion Scan between Jan. 2008 to Dec. 2011 at King Abdulaziz Hospital for National Guards-Al Ahsa

Inclusion criteria: Normal perfusion i.e. no perfusion defect whatsoever on MPS and normal function i.e. calculated left ventricular ejection fraction should be $\geq 50\%$.

Exclusion criteria: Abnormal perfusion i.e. a perfusion defect on MPS and/or abnormal function i.e. left ventricular ejection fraction $< 50\%$.

Data Collection methods, instruments us, measurements

Patients charts were reviewed through Jan. 2008 to Dec. 2011. Information was collected through a Performa. Myocardial perfusion scan is performed using pharmacological stress on Forte double head gamma camera by Philips Medical Systems Inc. MPS images were interpreted via semiquantitative visual interpretation using short axis, vertical long axis and horizontal long axis views. Normality was assigned using 20 segments MPS images. Each segment was scored by using 5 point scoring system (0=normal, 1=equivocal, 2=moderate, 3= severe reduction of uptake, 4= absence of detectable tracer uptake). A summed stress score (SSS) was obtained by adding the score of 20 segments of the stress MPS images. A SSS of < 4 was considered normal.

Follow-up

The charts of all the patients who fulfilled the criteria were reviewed for at least one year (mean follow up period 14.8 months) after a normal MPS for any admission regarding MI, or cardiac death. Telephonic interview was performed to ask for any procedure performed like CABG, PTCA or any treatment outside the king abdulaziz hospital or other intervention related to cardiology.

Data Management and Analysis Plan

- Descriptive results are presented by mean \pm SD for continuous variables.
- Number (%) are reported for categorical variables .

Percentage cardiac event among normal MPS are meaned by using Binomial distribution.

Results

Demographic data of the patients

There were 290 patients identified with normal cardiac nuclear scans in the pre-specified time frame. 103 of these patients were male accounting for 35% of the total population . Average age at the time of examination was 60.6 ± 11.8 years and the highest age group was between 66 and 70 years (Figure 1)

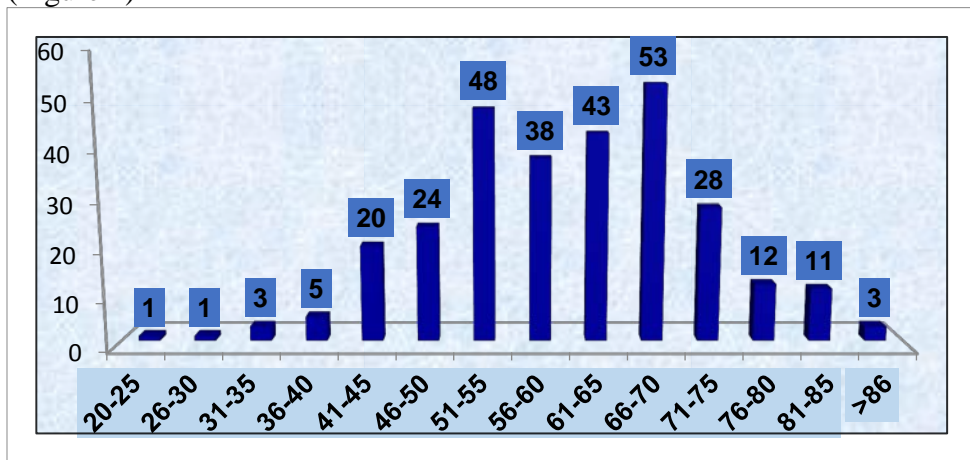


Figure 1 Age-wise distribution in the different age groups

Risk factors for CAD

The patients were presented with one or more risk factors. Out of the 290 patients, 61% were diabetic, 75.2% were hypertensive, 65.5% were dyslipidemic, 2.8% had a significant positive family history of IHD, 7.2% were smokers, and 24.1% had history of CAD. 2.1% of the total patient populations had prior CABG. 2.4% of the patients had prior percutaneous coronary intervention (PCI) (Figure 2).

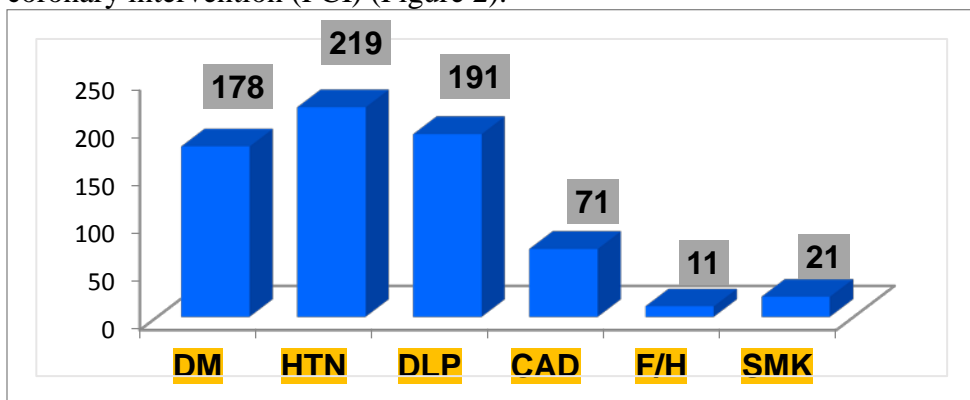


Figure 2 Risk factors for the patients , HTN constitute the majority. (DM; Diabetes Mellites, HTN; Hypertension, DLP; Dyslipidemia, CAD; coronary artery disease, F/H; family history of CAD, SMK; Smoking).

Follow up Data

There were 2 patients that were admitted with NSTEMI and went on to have diagnostic angiograms. One of those two patients underwent percutaneous coronary intervention with stenting (Figure 3 and 4). The other patient had non-obstructive CAD and was advised for medical management only. These findings are consistent with a 0.7% risk of cardiac events after a negative scan.

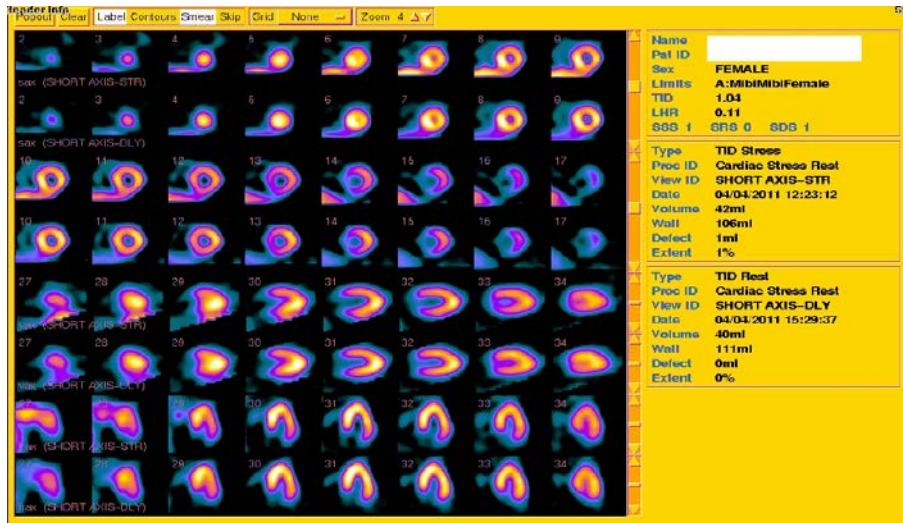


Figure 3 PATIENT A Myocardial Perfusion Scan for a patient referred as a suspected coronary artery disease shows normal sized left ventricular cavity with normal perfusion of left ventricular myocardium 04/04/2011

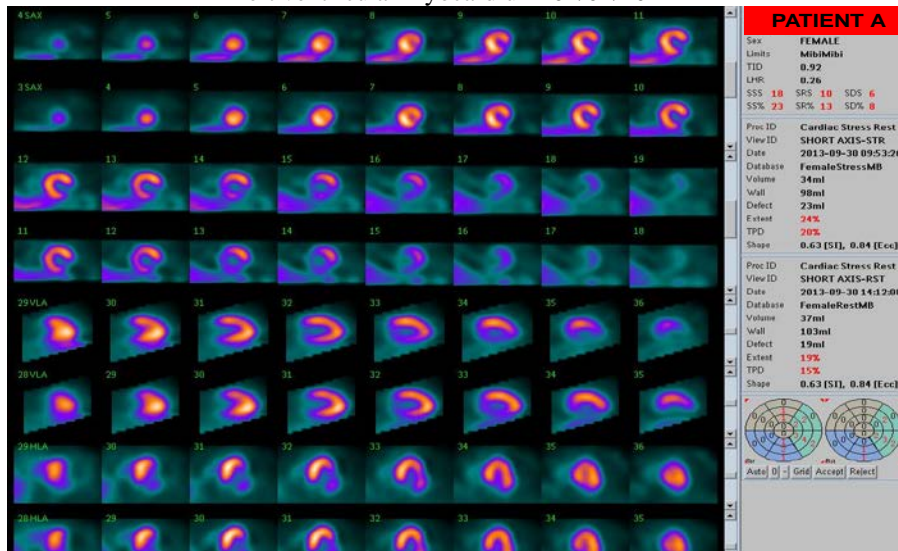


Figure 4 PATIENT A Myocardial perfusion scan for the above patient after he has developed a cardiac event is suggestive of fixed perfusion defect, medium size, involving the apical lateral, mid and basal inferolateral walls of the left ventricular myocardium. Findings suggest disease affecting LCX territory. 30/09/2013.

The other patient had non-obstructive CAD and was advised for medical management only (Figure 5 and 6). These findings are consistent with a 0.7% risk of cardiac events after a negative scan. Reviewing the data of the two patients who developed future events showed that they have multiple risk factors complicated their normal lives and both were sharing the same risk factors involving DM, HTN, Dyslipidemia and history of coronary artery disease (CAD) and both cases were females.

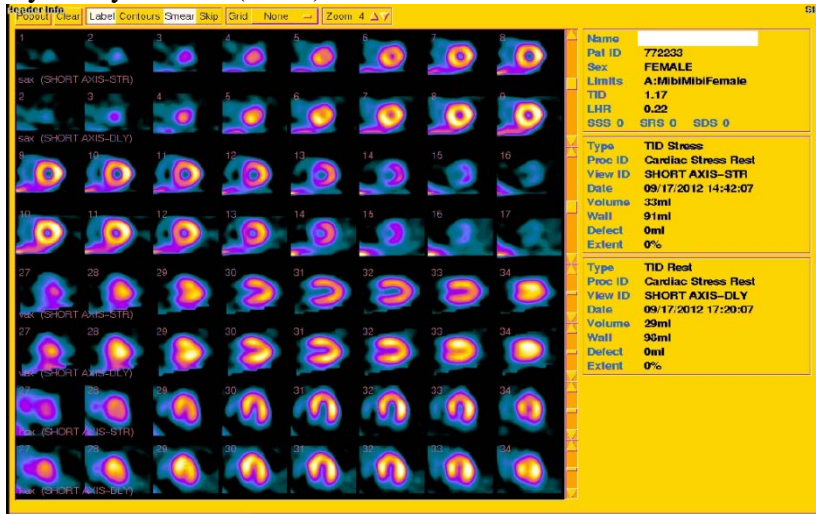


Figure 5 Myocardial perfusion scan for a patient who developed a cardiac event in the form of NSTEMI is suggestive of reversible perfusion defect, small size, involving the apical lateral, apical anterior walls of the left ventricular myocardium. 17/09/2012.

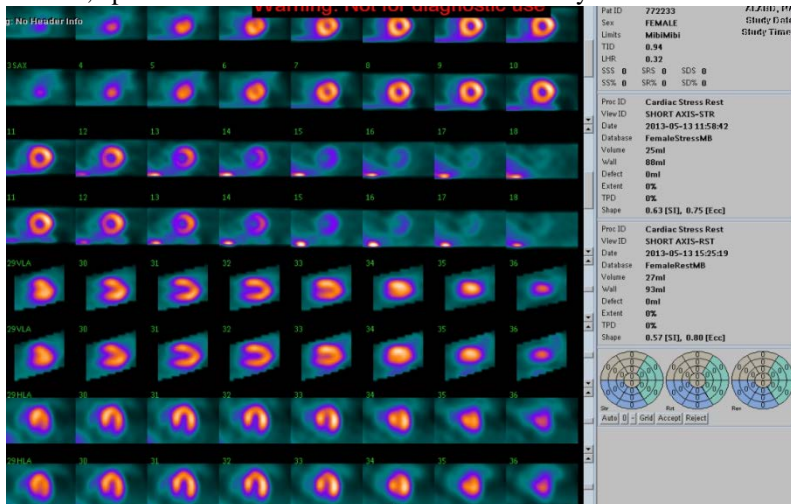


Figure 6 Same patient mentioned above (Figure 5) with improvement in the myocardial perfusion throughout left ventricular myocardium. Status post therapy.

Discussion

To our knowledge this study was the first effort to be done in the Saudi population, to determine the risk of future cardiac events after a normal Myocardial Perfusion Scan and utilising the Tc-99m sestamibi as the radiopharmaceutical. The result obtained in this study was 0.7% risk for future cardiac event after a normal scan with a small however a representative sample formed of 290 patients all of them were Saudi national, 35% of whom were male gender.

The results obtained in this study are not significantly different from many studies that have published. The patients were followed up in the cardiac clinic in our institution. Those patients that failed to follow up or were discharged from the clinic received a phone call to enquire about any further cardiac events that occurred after their normal cardiac scan.

Many studies had tested the prognostic value of a normal myocardial perfusion scintigraphy, Hachamovitch R et al underwent a study including 7,376 consecutive patients with normal exercise or adenosine MPS. The highest risk subgroups had a maximal event rate of 1.4% to 1.8%/year. That is, a 1% per year risk of death (1/100 per year) and a 0.8% per year risk on non-fatal MI (1/125 per year). [9]

Another study was done by Louise D et al, 2007 entitled as The Prognostic Value of Normal Exercise Myocardial Perfusion Imaging and Exercise Echocardiography: A Meta-Analysis. Where only patients who underwent exercise (not pharmacologic stress) were included in the meta-analysis. 8008 patients were included in the meta-analysis. The negative predictive value (NPV) for MI and cardiac death was 98.8% (95% confidence interval [CI] 98.5 to 99.0) over 36 months of follow-up for MPI, and 98.4% (95% CI 97.9 to 98.9) over 33 months for echocardiography. [10]

A recent cohort study done by Van Tosh A, comprised 457 women evaluated for suspected CAD who had normal pharmacologic stress (82) Rb PET MPI. no patient had clinically evident CAD. Follow up was done for 7 years and during that 11 deaths non ischemic, 3 non fatal myocardial infarctions, 3 percutaneous coronary interventions and 1 coronary artery bypass operation. Average risks of death and initial non fatal cardiac events were 0.72 and 0.47% per year respectively. Cardiac events were associated with a history of diabetes ($p < 0.0003$) and a family history of CAD ($P < 0.05$). They concluded that a normal PET study is associated with a very low rate of future cardiac events. Women with a diabetes and family history of CAD are more likely to sustain events and require close surveillance for the development of coronary disease.[11]

While in general the overwhelming majority of patients with normal MPS are low risk, it is important to point out that the precise level of risk after normal MPS varies widely and in many situations, exceeds the $<1\%$

threshold level. Studies in patients undergoing pharmacological stress, a population at higher risk and more co morbidities have reported hard event rates of 1.3-2.7% per year [12,13] suggesting that underlying clinical risk and prior CAD may influence event rates after normal MPS.

Conclusion

It is concluded that a normal MPI study is associated with a very low rate of future cardiac events. However the above findings demonstrate that the risk of major cardiac events after a negative nuclear cardiac scan is low and is in keeping with the international statistics available.

References:

European Heart Network. European cardiovascular disease statistics: 2008 edition. 2008. Available at: <http://www.ehnheart.org/cvd-statistics.html> [accessed 21 August 2012].

US National Center for Health Statistics. National Vital Statistics Reports. Deaths: preliminary data for 2010. 2012. Available at: http://www.cdc.gov/nchs/data/nvsr/nvsr60/nvsr60_04.pdf [accessed 21 August 2012].

Grech ED, Ramsdale DR. Acute coronary syndrome: unstable angina and non-ST segment elevation myocardial infarction. *BMJ* 2003; 326:1259–1261.

Overbaugh KJ. Acute coronary syndrome. *Am J Nurs* 2009; 109:42–52.

Coronary artery disease in Saudi Arabia. *Saudi Med J.* 2004 Sep; 25(9):1165-71. Al-Nozha MM and colleagues.

Cardiovascular system. In: Thralls JH, Ziessmann HA. *Nuclear Medicine; The Requisites*, 2nd edition. Missouri: Mosby; 2001:65-109.

DePuey EG, Nichols K, Dobriisky C. Left ventricular ejection fraction assessment from gated technetium-99m sestamibi SPECT. *J Nucl Med* 1993; 34:1871-6.

Berman D, Germano G, Lewin H, et al. Comparison of post-stress ejection fraction and relative left ventricular volumes by automatic analysis of gated myocardial perfusion single-photon emission computed tomography acquired in the supine and prone positions. *J Nucl Cardiol.* 1998; 5:40-47.

Rory Hachamovitch, Sean Hayes, John D. Friedman, Ishac Cohen, Leslee J. Shaw, Guido Germano, Determinants of Risk and its Temporal Variation in Patients With Normal Stress Myocardial Perfusion Scans What Is the Warranty Period of a Normal Scan? *Journal of the American College of Cardiology* 2003, 0735-1097/03

Fleiss JL, Levin B, Paik MC., *Statistical methods for Rates and Propotions.* 3rd Ed. 2003. John Wiley & Sons. New York. Louise D. Metz, Mary Beattie, Robert Hom,, Rita F. Redberg, Deborah Grady and Kirsten E. Fleischmann,

The Prognostic Value of Normal Exercise Myocardial Perfusion Imaging and Exercise Echocardiography: A Meta-Analysis.. J Am Coll Cardiol, 2007; 49:227-237. NYU and UCSF.

Van Tosh A, Supino PG, Nichols KJ, Garza D, Horowitz SF, Reichek N., Prognosis of a normal positron emission tomography ⁸²Rb myocardial perfusion Imaging study in women with no history of coronary disease.

<http://www.ncbi.nlm.nih.gov/pubmed/21372570>

Stratmann HG, Tamesis BR, Younis LT, et.al: Prognostic value of dipyridamole Tc-99m sestamibi myocardial tomography in patients with stable chest pain who are unable to exercise. Am J Cardiol 1995; 73(9):647-652.

Calnon DA, McGrath PD, Doss AL, et.al. Prognostic value of dobutamine stress Tc-99m sestamibi SPECT myocardial perfusion imaging: stratification of a high risk population. [Comment]. J Am Coll Cardiol 2001; 38(5):1511-1517.

RURAL POOR AND RURAL HEALTH CARE IN NIGERIA: A CONSOCIAL NEED FOR POLICY SHIFT

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Abstract

Rural poor have lived in the shadow of overriding concern for the prosperity, development and needs of urban or state government. Much attention on the urban areas has been on the growth of capital, financial interests and social infrastructural amenities which of course has debar and ignore rural interest. The negative impact has affected the rural people. There is need to rethink the goals and process of rural development to ensure more positive outcomes for communities, people and the overall environment. The focus of this paper is on the participation of social service organization on the development of rural and remote areas in Nigeria. This paper provides a framework from which a revised model rural development is derived. These models on rural development emphasize the full participation of government in the process of rural changes.

Keywords: Rural poor, development, rural health care and rural people

Introduction

If Health programmes in the rural areas in Nigeria should ensure a deep rooted, self sustained and self retained development based. The need to have health delivery programme designed to mobilize the rural citizenry to actively participate and cooperate in the task of rural health development become imperative. This pre-supposes government that in their pursuit for a health delivery programme in the rural dwellings should have the responsibility of democratizing the rural development process by involving

the rural dwellers in planning and implementing rural health development projects and providing rural revenue credit facilities. This means that for an effective health delivery system, it must involve active rural participation, rural finance, rural credit and saving mobilization involvement and cooperation in planning, implementation of health delivery programme.

In Nigeria, an approach to health delivery scheme is still far from reality, there are several underlying factors responsible for the failure of effective and competent health management in Nigeria. These include, poor funding, non participation of communities on health care programmes, poor personnel, lack of self sustainance and rural credit facilities.

Having exposed thus, it is imperative to adopt an approach towards a more effective rural health services in Nigeria as a solution to solving forces acting upon rural health. For some formative evaluation basic questions are necessary to ask: How do we plan rural health policies? How do we host effective rural health programmes? What is poverty? Who are the poor? What do the poor do for living? What is peculiar about moral poverty? What is the effect of rural poverty on health? *Answer to these and similar questions are required for an effective rural poor and rural health care policy programmes.*

Who are the nigerian poor?

The paupers, beggars', disabled and informed with no visible means of sustained livelihood, the single unemployed, the homeless vulnerable families, and the social deviants who subsist precariously on the edge of the society (*Aboyade. O. 1975*). Nigerian poor is classified into three, thus:-

- **The Chronic Poor:-** This house-hold are very poor, they have humanitarian allies to income and the instrument to manage risk and even in small reductions income can have severe low sequence for thus. This people often face with mal nutrition, poor and unbalanced dietary conditions and insufficient food. This set of people also exposes to fear some diseases and may die of it.
- **The Transient Poor:-** This group lives near the poverty lines and may fall into poverty when an individual household or the economy as a whole faces hard times.
- **Special Circumstances:-** These are sub-group of population for whom general stability and properly alone will not be sufficient. Their unavailability may stem from disability, discrimination due to ethnicity, displacement due to conflict "social pathologies" of drug and alcohol abuse, donnish violence or crime. These groups may need special health programme to help them attain a sufficient standard of well being.

Conception of rural health care

The materialist conception of rural health care anchors on the fundamental assumption; health care is part and parcel of society within which individuals lives, health begins with the axiom that human beings are the basis of both the forces of production, the relation of production, social institution and practices in any society and therefore “appropriate human organismistic condition, that is healthcare can only be understood in the concrete content of the particular mode of organization of production and the dialectal relationship between the production forces and relation (*Sander Ialman 1977:8*)

Rural Health care is inseparable from the political economic conditions under which people have met their daily needs and reproduce life (*Turshan 1977*) nor is health separated from such process as the rate of capital and profit accumulation, repression and other super structural aspects of the materialist basis of existence. Rural Health Care therefore, transcends the absence of disease. It is a state of being in which the individual has relative control through participation over his existence in a purposive and meaningful way and devoid of poverty.

Poverty or Rural Poverty could be categorize into;

- (1) Culture of Poverty
- (2) Poverty

Culture of Poverty

Poverty simply refers to economic deprivation and culture of poverty is a sub- culture or a way of life which develops from economic deprivation (poverty).

This sub-culture transient national boundaries. It is both an adaptation, a reaction of the poor for the marginal position in a class – stratification, high individual, capitalist society. (*Rebiwon, 1976*). It represents an effort to cope with feelings of hopelessness and despair which develops from the realization of the improbability of achieving success in terms of the values and goals of the larger society:

Maltus, in 1798 made an effort to explain the existence of poverty in rural society by attributing the phenomenon to the propensity of the poor to procreate at a rate which exceeds their means of subsistence. He posited a relationship between population growth and poverty and largely blamed the poor for their inability to control their physiological impulses.

Large number of children constitute more drain on available resources and impoverish the family by reducing the main income of the family. In adherence to African traditional hospitality and extended family system, poverty is also housed and the poor parental background finds it difficult to take care of their health care matters. Poverty by the rural poor is

that lack of basic income needed in minimum necessity of life, Poverty breed poverty. A poor individual or family has a high probability of staying poor.

Unemployment, a pointed finger to poverty is one of the major problems confronting rural Nigeria and as in many developing countries, it is to a large extent a rural phenomenon, most of these unemployed are young school leavers or drop-outs who are new entrants into the labour market with hardly any professional training or experience (*Akerele . A. 1977*).

In rural areas in Nigeria, there are poor and disenfranchised groups that have no voice and obtains little consideration from political, social or economic decisions even where they have been considered by policy decisions, the result has often been ineffectual, for whatever reasons, this group lack access to the institutions that ostensibly govern and serve its society (*Ihiesenhuman 1978:9*) and consequently expose to dividend of poverty which include of course poor health care management;

Any house hold afflicted by poverty is in all probability likely to have a minimum education, that confess non skill on him, the skill deficiency in turn narrows his job options to unskilled, low paid jobs, low earnings from unskilled work. This shows that such house holds would hardly afford a good medication.

Rural health care in Nigeria

Another enhancer to poverty and rural poor health care can be traced to the abysmal development of National Health development planning in Nigeria. These of course include rural health workers. They are often reported as mal-distributed in the rural areas to the disadvantage of rural poor dwellers. Rural health workers was primarily institutionalized in 1979 to improve the staffing of rural areas however, the distribution of rural health personnel has paralyses its immediate policy goal. The effect of overall manpower shortage in the labour market and poor infrastructural health care facilities is indifferent to this cause. The health care providers in the rural areas are not only a few but have been deprived of instrument of labour and means of labour. As a result rural health care is at risk; the cconsequences can easily be post predicted to the problem of inadequate health personnel distribution in the rural areas. This menace has reported repeatedly in the National health development plan in Nigeria ever since the Nigeria Independence.

As a result, there is need to provide adequate health manpower in the rural areas for effective services. Adherence to suggestion and advice; making physical infrastructures such as hospital and health centers available in rural areas would amount to adequate provision of health care facilities to the populace concerned.

Although a School of thought has buttressed that the expansion of the health workers and more infrastructural health facilities would not incessantly resolve the problem of poor rural health care services (*Fmoli 1980*), as a result, the health status of rural populations as compared with their urban counterparts has continued to bother government, as such government has embarked on programmes to finding means of providing adequate health in the rural areas.

Researchers of course in their findings discovered truly that there are shortage of trained health workers and health infrastructural facilities and there is immediate need to correct the situation perhaps by making physical infrastructures such as hospital and health centers and health providers available, it was hoped that if the health care service infrastructural facilities and health providers were made available, other health managers would be able to distribute other resources equitably within rural areas. (*Adejuyiabe 1974, Onokerrhoraye 1976*).

But little did these schools of thought know the political economy of rural settlers and dwellers. Inadequate funding and poor credit finance and poor community participation are more chronic factors that control rural health care delivery. Inadequate funding in Nigeria is reflected both in previous and present decline of budgetary allocation to the health sector on the average this has been less than 2% (1.88%) in rural area over the years (*Osenmota 1992*). This is less the minimum of 5% of total budget outlay recommended by the W. H. O (World Health Organization). Poor management of health institution is also associated with this inadequate funding and inadequate support services.

The diagnostic services available in some urban centers are non-existent in rural areas. This attitude to rural health has affected the growth and quality of health care in the rural areas. The drug in availability is a known thing, the drug revolving schemes are effectively inadequate perhaps there is need for inter – sectoral co-operation.

Poor revenue and credit finance among rural poor pose a major cause. A proportion of Nigerians rely on traditional healers for treatment due to low income per capital associated with rural areas. It is a matter of regret that up till now no major effort has been made to improve on these individual factors. Therefore, the rural people still share the same traditional traits bearing the same burden of poverty, disease, and illiteracy.

The rural people owing to low income per capital are expose to mal-nutrition, poor and unbalanced dietary conditions and insufficient food. These, include sanitary conditions and disease control. This evidently is an off shoot of low income per capital that is common place in the rural areas.

The proportion of the population of Nigeria living in extreme poverty has risen while some African countries such as Angola, Egypt and Ethiopia

have reduced their poverty rate over the last two decades; poverty attributed diseases and sickness such as child mortality, H.I.V and AIDS scourge, Tuberculosis effect have increased in six sub-sahara nation which Nigeria is included (Steve Dada 2010).

According to UN report on millennium development goal (MDG's). sub- sahara is the only region in the world requesting an increase as the HIV, AIDS and underage – five mortality rate. These have risen in Cameroon Central African Republic, Chad, Congo, Kenya and Zambia, 34 countries out of worlds 36 countries with child mortality rate, above 100 per 1,000 births are in sub-saharan Africa.

From account so far on the inadequacies in rural health care in Nigeria, obviously there is a challenge for Nigeria to strengthen her health care system across the spectrum to reduce the disparities and create a more equitable situation regarding access to health care services for the population at large. If government financial allocation to health sector is expected to achieve its course, certain policy programmes and model should be adopted in rural health care scheme in Nigeria according to classifications.

These models include:

- (1) Safety Net Model,
- (2) Cash Transfer Model
- (3) Rural Finance / Rural Credit Model
- (4) Conditional Cash Transfer Model
- (5) Drug Free Waiver Exemption Model
- (6) Net Work Delivery Model

Safety Net Model

This model is a poor reduction strategy, it supposes to work alongside with health insurance, health education and financial services to the rural recipients. Safety Net Programmes aid supportive rural health scheme through the provision of utilities, roads and other policies. This aim at reducing poverty among the rural populace and manage risk.

Safety Net Programmes can play four roles;

- i. Safety Net model redistribute income to the poor rural people and reduce the yawning between the poor and the rich.
- ii. Safety Nets enable household to make productive investments in their future that they otherwise (e.g) education, health, income generating opportunities.
- iii. Safety Net helps households to manage risk at least off setting harmful bills failures that they may otherwise cope with strategies and at most providing an insurance function which would improve live hood options.

- iv. Safety Net Acts allow government to make choices that support efficiency and growth.

NOTE:, The ineffectiveness of safety net model in the rural health care system lies in the details of the implementation process and stake holders' involvement therein.

Cash Transfer Model

This model directs provisions of assistance in the form of enabling cash to the poor victim, poor sick or those victims who face a probable risk of falling into rural poverty of course rural poverty concept expresses rural peasantry \, where the rural poor have neither will, nor the gleans, nor the power to do so. The main objective of cash transfer model in the rural health care is to increase the poor and vulnerable household with real incomes.

Rural Family Health Allowance Scheme

Rural family health allowance scheme is a benefit regular or occasional paid to families (Victims) of H. I. V, AIDs, Tuberculosis, Sickle Cell, etc. with children under a certain age, transfer can be in the form of drug waiver or substitution.

Conditional Cash Transfer Model

These are programmes earmark to provide cash payment to poor households, that meet certain behavioral requirement (eg) children with (HIV) care delivery system. In this model service providers have to consider target and ensure impact evaluation.

Drug Fee Waiver Exemption Model

The objective of this model is to provide people living with HIV, AIDS with financial resources to use public services such as health facilities. It will enable people to obtain free health care even when fees are charged. Exemption should be granted to victims of HIV, Tuberculosis, and other numerous diseases. These victims have special drawing rights to available drugs and health care facilities.

Net Work Delivery Model

This model directs to victims of HIV and other related diseases who could not attend clinics in the hospital as a result of psychological trauma and shame therefore there should be a healthcare delivery agencies that operate with a personnel code which is only known to the service providers and the victims. In this case the application of drugs is accomplished through a direct live- linkage between the services providers and the victims and preferably payment is made online.

Rural Financial And Rural Credit Model

This is an overall service model. It is the provision of credit, savings mobilization, insurance coverage and payment system for transfer of fund to rural sectors. In view of low income and high risk in the rural areas, effective provision of this services serve important goals of accelerated growth, poverty alleviation and reduced exposure to vulnerability. (Akpala 2004).

Rural settlement is characterized with diversity and such it requires a variety of diversified formal and informal institutions for the provision of innovative rural financial services to rural settlers. Once the rural settlers have bargaining powers and economic empowerment, they would eventually afford health services.

Conclusion

From the accounts, the provision of access to qualitative rural health care should be topmost on the government agenda. Government should fulfill all obligations towards making rural health care project a success. Government should adopt openness in technology and consistent leadership commitment to reduce rural poverty

References:

- Aboyade O. 1975, On the need for an operational specification of poverty in the Nigerian economy, poverty in Nigeria, proceedings of the 1975 Annual Conference of the Nigerian Economic Society
- Akerele 1977: Facing up to unemployment in Benin city; Job seeker make themselves solvelip in proceedings of the 1977 Annual Conference of the Nigeria Economic Society.
- Thiesenhumun 1989; Reaching the rural poor and poorest.
- Fmoli 1980 Newly (ed). International perspection in rural sociology
- Adegwiabe 1974
- Osenwoli O. 1992, (edition) Nigerian, Public Administration and the Excution of Ribhe Policy. IPAES University of Benin
- Steve Dada 2010 Un: Child mortalily still high in Saharan Africa; Thursday Vol 15 No 5549p - Friday July 2010
- Akpala 2004: Micro finance certification programme CIBNpiers limited
- Onokerhoray. A. (1980) – Public Services in Nigeria; a case study of ilorium, Niger Ibadan

DOCUMENTING COMPETENCE: EVIDENCE OF EXCELLENCE IN NURSE ANESTHESIA PRACTICE

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Abstract

Sweeping changes in the healthcare environment reveal a greater need for the placement of qualified, cost-effective providers in all areas. Certified Registered Nurse Anesthetists (CRNAs) have a proven track record of safety. However, a gap exists in identifying, quantifying, and linking existing practice evidence to the performance of individual CRNAs. The purpose of this project was to develop a practice portfolio for each CRNA that would provide evidence of competent performance in a rural acute care setting. The project demonstrated that CRNA practice portfolios can be utilized to demonstrate competent practice through the compilation of objective and quantifiable evidence.

Keywords: Competence, practice portfolios, performance improvement, scholarly work

Introduction

The value of CRNAs in the search for better, more efficient, cost effective, accessible, and high quality healthcare is significant (Plaus, Muckle, & Henderson, 2011). Because the CRNA scope of practice allows nurse anesthetists to provide anesthesia-related care to diverse patient populations in multiple healthcare settings, CRNAs are strategically positioned to provide such care in a safe and cost-efficient manner (American Association of Nurse Anesthetists, 2013). Dulisse & Cromwell (2010) found that there was no difference in the safety of anesthesia care in states where CRNAs function without physician supervision than in those states that require it, and that the CRNA model is more cost-effective).

The National Board of Certification and Recertification for Nurse Anesthetists ((NBCRNA) has modified the process of recertification so that it will provide further evidence of continued competence in the profession (NBCRNA, 2013a). These requirements, however, will be implemented progressively through 2032, with mandatory testing for recertification

beginning in full at that time (NBCRNA, 2013b). Since mandatory testing will not begin for many more years, CRNAs may need an avenue for proving competence before then. Even after that date, mandatory testing will only occur every other certification cycle which could overlook the need to demonstrate continuing competence in the interim (Plaus, Muckle, & Henderson, 2011). The identification of measurable indicators that contribute to an accurate assessment of the competence of individual CRNAs would empower stakeholders to achieve a more definitive appraisal of the quality of patient care and safety actually being delivered.

I.

The purpose of this project was to develop a portfolio defining and measuring pertinent indicators associated with nurse anesthetist performance in the acute care setting. The reporting format in the portfolio included five sections. Prior to study implementation, the author selected eleven indicators from a list of twenty-two currently used in the cohort hospital as being most reflective of actual provider performance and less influenced by patient comorbidities. Beginning with the past quarter, any indicator event occurring for any provider during the data collection period was recorded.

Specific information included the total number of anesthetics performed by each CRNA, the number that did not pass the peer review process, and the outcome. This information demonstrated evidence of specific and measurable negative outcomes in the course of anesthesia administration on a daily basis for every provider as well as over the long-term and comprised Section I of the portfolios.

Section II consisted of quarterly performance evaluations by a peer, the Medical Director, and a self-evaluation. All of these sections utilized brief questionnaires in the form of a survey instrument. Because self-efficacy and performance measurements have been shown to be consistently related, specific Likert items were selected to evaluate self-efficacy in hopes of extrapolating the results to measure performance. Self-efficacy has less to do with the amount and type of skills a provider possesses, but rather about how confident he/she feels in the judgment calls utilizing those skills (Maurer & Pierce, 1998). Section III was used to demonstrate evidence of the required licenses and continuing education credits in an easily accessible form, as well as evidence of advanced skills and certifications.

Section IV consisted of documentation identifying consistent and continuing compliance with accurate patient care documentation and billing records. Accuracy of patient care documentation is necessary for third-party payers such as Medicare to ensure appropriate reimbursement. This data provided evidence of proper stewardship of goods and services through accurate and legible documentation and billing records.

In order to assess the accuracy of billing records, the administrative assistants employed by the business office documented incidences of inconsistent or illegible patient care documentation and/or absent documents necessary for billing purposes. Without correct and complete information from all these components (and legible handwriting from the anesthetist), the administrative assistant who bills for anesthesia services may be forced to call the hospital medical records department in order to have the needed information retrieved from the patient chart and faxed to her, decreasing the efficiency of the billing process.

Section V consisted of scholarly work by the CRNA, including accomplished or ongoing research, papers, projects, utilization of evidence-based practice materials, and publications. The portfolios were assembled by the administrative assistants with direct input from individual CRNAs.

Project Evaluation

The project was evaluated through the use of Likert scale questionnaires completed by each CRNA, the Medical Director, and each Administrative Assistant. The majority of study respondents agreed that the components included in the portfolio provided adequate, reasonable, and truthful evidence of CRNA professional competence and the portfolio did appear to be an improvement over the previous method (recording only credentialing and licensing information). Most CRNAs felt that the addition of peer review and the feedback on documentation/billing packet completeness and legibility would inspire practice change and the Medical Director felt that the portfolio would make it much easier to do annual performance reviews.

All respondents viewed the portfolio as an easier way to organize and access the data; most believed the portfolio would be very functional in regard to the information they would need or use, as well as making the hospital credentialing process more efficient. The CRNAs felt that having the performance improvement data in their own portfolio would keep them informed of the data that the hospital is tracking and aware of quarterly reporting results on a regular basis. This information trail would enable them to analyze their own progress and performance.

The majority of CRNAs responded that if they received information about incomplete documentation or illegible billing packets, they would take measures to improve it. The billing and documentation data collected over the last month showed that all CRNAs were deficient in at least one billing packet. One CRNA was deficient in eleven billing packets.

There is no conclusive data establishing a complete list of performance indicators for CRNAs, or any other medical specialty. However, the majority of respondents in this study felt that performance

improvement data was an important component in evaluating CRNA performance and that the eleven performance improvement indicators chosen from the hospital-utilized indicators were very reflective of CRNA performance and competence.

The Medical Director specifically spoke to the advantage of having a peer review done among the CRNAs, stating that persons practicing in the same profession can provide the most appropriate feedback about competence in practice. Several comments were made regarding the renewed incentive, both personally and professionally, when new information is disseminated, as well as the effectiveness of collaboration and discussion about practice issues and areas for improvement.

Implications for Practice

Instead of defining the standards of care based on what any prudent provider would do in the same situation, today's definition has broadened to include several other considerations. For example, whether or not the clinician did the right thing at the right time, whether it was effective, or was provided safely and in a timely manner, and whether or not the outcome was the best that could be expected based on the patient's condition, comorbidities, and the current best evidence must now be addressed as well (Buppert, 2012).

Conclusion

Outcomes of this project suggest that a CRNA practice portfolio could help bridge the evidence gap in defining practice competence of individual CRNAs, utilizable by the CRNA provider, as well as stakeholders such as employers, hospitals, third-party payers, and perhaps even patients. By providing retrospective and prospective data, CRNAs are able to view their own achievements, evaluate their professional progress, identify gaps in learning, and plan personal and professional goals and objectives (Hawks, 2012). Through the demonstration of best practice, CRNAs may be more readily identified as providers of quality anesthesia care.

References:

- American Association of Nurse Anesthetists (2013). Scope of Nurse Anesthesia Practice. Retrieved from <http://www.aana.com/resources2/professionalpractice/Documents/PPM%20Scope%20of%20Nurse%20Anesthesia%20Practice.pdf>
- Buppert, C. (2012). *Nurse Practitioner's business practice and legal guide* (4th Ed.). Sudbury, MA: Jones & Bartlett Learning.
- Dulisse, B., & Cromwell, J. (2010). No harm found when nurse anesthetists work without supervision by physicians. *Health Affairs*, 29(8), 1469-1475.

Hawks, S. J. (2012). The use of electronic portfolios in nurse anesthesia education and practice. *AANA Journal*, 80(2), 89-93.

Maurer, T. J., & Pierce, H. R. (1998). A comparison of Likert scale and traditional measures of self-efficacy. *Journal of Applied Psychology*, 83(2), 324-329.

National Board of Certification and Recertification of Nurse Anesthetists, NBCRNA (2013a). *Changing needs: Limitations of the current system*. Retrieved from

<http://www.nbcna.com/cpc/Pages/Changing-Needs.aspx>

National Board of Certification and Recertification of Nurse Anesthetists, NBCRNA (2013b). *Time frame*. Retrieved from

<http://www.nbcna.com/cpc/Pages/Timeframe.aspx>

Plaus, K., Muckle, T. J., & Henderson, J. A. (2011). Advancing recertification for nurse anesthetists in an environment of increased accountability. *AANA Journal*, 79, 413-418.

THE HEALTH-RELATED QUALITY OF LIFE IN MOTHERS OF SURVIVING DEAF BLIND ADULT CHILDREN WITH CONGENITAL RUBELLA SYNDROME IN THE UNITED STATES

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Abstract

The purpose of this study was to determine the health related quality of life (HRQOL) of mothers of surviving deaf-blind adult children with congenital rubella syndrome (CRS) and the relationship of factors that influence it. This study uses a cross sectional design with all of the study participants having surviving CRS children born from the 1963-1965 epidemic.

Analysis revealed: 1). Maternal CSI scores were significantly associated with the HRQOL $F(13, 273) = 67.175$ $p < .001$. Mothers who experienced high levels of caregiver stress had a poorer overall quality of life than those with lower levels of stress. 2). The deaf-blind adult child's with CRS functional ability was significantly associated with the maternal HRQOL $F(22, 263) = 17.03$ $p < .001$. Mothers of adult deaf blind children needing care had poorer overall quality of life than those more independent. 3). Communication methods were significantly associated with the HRQOL. Communication with Sign Language ($M = 80.39$, $SD = 20.8$) demonstrated better overall maternal HRQOL scores than those with gestures ($M = 31.49$, $SD = 32.57$), $F(8, 277) = 17.471$, $p < .001$. 4). Behaviors were significantly associated with the HRQOL with the largest difference between adult- children demonstrating no apparent behavior ($M = 89.77$, $SD = 11.7$) to those presenting aggressive behavior ($M = 30.95$, $SD = 30.37$), $F(7, 279) = 21.130$ $p < .001$. As the prevalence of children with disabilities continues to increase, so does the demand for professionals who understand the unique needs of caregivers. Professionals must understand the impact special needs have on the mother and by extension, the family, and be able to provide the care and resources needed to support the continued care.

Keywords: Congenital Rubella Syndrome, Deaf blind, Health, Mothers

Introduction

Today, there is increasing discussion of the need to not only assess, monitor, and cure specific disorders but also to consider a larger concept referred to as the health related quality of life (HRQOL) (Francic & Bothe, 2008). There is no single agreed-upon definition of HRQOL, although there is at least a consensus that it is dynamic and multidimensional. Definitions include "the value assigned to the duration of life as modified by the impairments, functional states, perceptions and social opportunities that are influenced by disease, injury, treatment or policy" (Patrick & Erickson, 1993, p. 22), as well as "patients' perceptions of performance in four areas, physical and occupational, psychological, social function and somatic sensation" (Bergner, 1989; MacKeigan & Pathak, 1992; McHorney & Tarlov, 1995; Patrick & Erickson, 1993; Schipper, Clinch, & Olweny, 1996, p. 11). However, the current standard is to view HRQOL as encompassing four domains: physical functioning, social functioning, role functioning, and mental health (Bergner, 1989; MacKeigan & Pathak, 1992; McHorney & Tarlov, 1995; Patrick & Bergner, 1990). Hence, HRQOL focuses on how the person feels, as opposed to clinical test results (Clancy & Eisenberg, 1998).

Studies have indicated that taking care of children with disabilities is often associated with impaired parental physical, social, role and mental functioning (Dyson, 1997; Hedov, et al, 2000) with mothers experiencing most of the negative effects (Beckman, 1995; Bristol, et al, 1988; Dyson, 1991, 1997; Hedov, et al, 2000; Krauss, 1993; Trute, et al, 1995). Terms such as caregiver burden and caregiver strain are commonly used to capture the negative consequences of undertaking this caregiving role (Hunt, 2003).

Smith (1996) identified a number of caregiver stressors, including demanding physical care of the individual, management of household and financial affairs, and direct observation of worsening conditions. Other variables observed included limited social lives, loss of privacy, sleep disruption, curtailed activities of other family members and generalized family dysfunction (Smith, 1996).

In 1962, a pandemic of German Measles (rubella) occurred, starting in Europe and later spreading to the United States. Between 1963 and 1965, the United States reported 12.5 million cases of the virus which gave rise to 20,000 cases of the congenital syndrome, including approximately 6,200 stillbirths (Herrmann, 1991). Rubella is generally benign to children and adults who contract it. However, it causes serious and lifelong health problems in the offspring when their mothers develop this disease during the first trimester of pregnancy. Infants of infected pregnancies are born with ocular, auditory, and other systemic abnormalities which are common manifestations of congenital rubella syndrome (CRS). Between 1963 and 1965 an estimated 20,000 infants were born in the United States with

congenital birth defects caused by the rubella virus (Herrmann, 1991). Many of these babies were born deaf, with vision problems and mental retardation. Today, this surviving CRS population, now adult, has unique problems with communication, mobility and other daily living skills that make independent living more difficult to achieve. Additionally, many residential services have little or no experience providing the supports needed by adults who are deaf-blind which often leaves the immediate family to care for them.

The cost associated with long-term care of individuals with CRS represents an economic burden for affected families and for society with an estimated cost of \$514,000 per case (PHAC, 2002). This figure does not reflect the additional financial burden surrounding the health of the primary caregivers, in particular, as it relates to the well-being of the mothers.

If the results of this study are consistent with results involving other disabled populations which demonstrate a negative effect on the health of the mother, it will support the need for earlier and more comprehensive services for families of individuals with CRS. Additionally, these results may illuminate the needs of other children with similarly severe disabilities.

I. Purpose

The purpose of this study is to determine the health related quality of life (HRQOL) of mothers of deaf-blind adult children with congenital rubella syndrome (CRS).

* This study examines both internal and external factors related to mothers of deaf-blind adult children with CRS.

* Internal factors are those unique to the care of the deaf-blind adult with CRS including: method of communication; behavior; functional ability and maternal caregiver strain.

* External factors, those which the literature has found to influence a HRQOL, include: the residential status of the deaf-blind adult child with CRS; the utilization of services; maternal financial status and education.

Literature review

Research has identified a number of caregiver stressors, including demanding physical care of the individual, management of household and financial affairs, and direct observation of worsening conditions. Other problems observed included limited social lives, loss of privacy, sleep disruption and curtailed activities of other family members (Townsend & Davidson, 1992).

The literature indicates a major factor contributing to caregiver strain and the caregiver's HRQOL is communication difficulty between the

caregiver and the person needing care (Kreps & O'Hair, 1995; Query & Kreps, 1996).

Research suggests that parental HRQOL is directly correlated with child behavior and mothers who provide care for adult children with mental disabilities have higher rates of chronic health conditions (Allik, et al., 2006; Magaña, et al., 2004).

Caregivers who care for impaired individuals report significantly higher caregiver strain scores than do caregivers who provide care to healthy individuals. Additionally, as the dependency increases, caregivers report poorer perceived health, increased health-risk behaviors, and increased anxiety and depression (England, 1996; England & Roberts, 2000).

Knowledge Gaps

It is not fully understood why some caregivers experience changes in their HRQOL and others do not. There are inconsistencies in the area of caregiver research; however, maternal HRQOL is underrepresented in the literature. Although considerable attention has been directed toward caregivers of acute and chronically ill individuals, there is limited information specific to those who care for the developmentally disabled population and no identified research on the care of adult children with CRS. Predictors of maternal HRQOL need to be defined in order to potentially promote health for these mothers and insure adequate, cost effective and appropriate health care for this population. Additionally, the pattern of support services used by these caregivers has not been investigated as well as their expectations of and barriers to using services.

Method and Design

This study uses a cross sectional design. Implicit in the cross-sectional study is the assumption that the study population has been exposed for a long time and will continue to be exposed unless some intervention is affected. All of the study participants have surviving CRS adult children born from the 1963-1965 epidemic. The dependent variable assessed is the maternal HRQOL represented by the eight domains within the SF-36. Independent variables assessed are divided into main predictors (internal factors) and covariates (external factors).

These include: years of maternal caregiving, adult deaf-blind child's residential status, maternal marital status, number of children, maternal education, maternal caregiver strain, method of communication, adult deaf-blind child's behavior, utilization of services, adult deaf-blind child's functional ability and maternal financial status. In addition, to ascertain the qualitative aspects of parenting an adult child with CRS and to assess

correlation of verbal and written responses, 5% of the study sample was contacted via phone interview.

Participants

This investigation focuses exclusively on the mothers of surviving CRS adult children born as a result of the 1963-1965 epidemic as its case criteria. According to HKNC's national registry, there are approximately 1000 deaf blind individuals 21 and older who are listed as having CRS in the United States (HKNC, 2006). According to the CDC, this cohort is the result of the 1963- 1965 rubella epidemic.

Data Collection Method

In this study, Helen Keller National Center's (HKNC) national registry was used to identify mothers who fit the case criteria (having a child with CRS from the 1963-65 epidemic). Mothers of deaf-blind adult children with CRS identified by the registry and who fit the case criteria were asked to participate in this study, via mailing, by the executive director of the HKNC. In addition public announcements were made by the National Rubella Listserv website.

Sample size and power analysis

An a-priori power analysis was conducted to determine the number of participants required to detect a medium effect size with power = .80 for a sample at alpha = .05. The power analysis suggested that 286 participants would be needed to achieve a power of .80 (<http://www.danielsoper.com/statcalc/calc16.aspx>).

Data Collection Tools

Demographic information was incorporated into a self-administered maternal questionnaire.

In addition, mothers of adult deaf-blind children with CRS were asked to complete: the Medical

Outcomes Study 36-Item Short-Form Health Survey (SF-36), the Caregiver Strain Index (CSI) and the Modified Barthel Index (MBI).

Ascertainment of health

The Medical Outcomes Study 36-Item Short-Form Health Survey was used to measure general health and well being (Guyatt, et al.,1993; Stewart, et al.,1988; Testa & Simonson, 1996; Ware, et al., 1993). This is a generic, multidimensional, self-report health questionnaire (Ware, et al., 1993). The SF- 36 measures eight health concepts or domains: physical functioning, role limitation, bodily pain, general perception of health, energy-fatigue, social function, role limitation due to emotional problems,

and mental health. Each scale score ranges from 0 (worst health state) to 100 (best health state). The SF-36 has shown validity and internal consistency when used in general populations (Brazier, et al, 1992; Lyons, et al, 1994; McCallum, 1995; McHorney, et al, 1992; Sanson-Fisher, et al, 1998). Internal consistency reliability is high ($\alpha = 0.86$) and construct validity is supported by correlations with the physical and emotional health of the caregiver and with subjective views of the caregiving situation (Sullivan, 2004; Thornton, 2003).

Ascertainment of caregiving

The Caregiver Strain Index (CSI) is a tool that can be used to quickly identify families with potential caregiving concerns. It is a 13-question tool that measures strain related to care provision. There is at least one item for each of the following major domains: Employment, Financial, Physical, Social and Time. Positive responses to seven or more items on the index indicate a greater level of strain. This instrument can be used to assess individuals of any age who have assumed the role of caregiver for an adult. Internal consistency reliability is high ($\alpha = 0.86$) and construct validity is supported by correlations with the physical and emotional health of the caregiver and with subjective views of the caregiving situation (Sullivan, 2004; Thornton, 2003).

Ascertainment of the adult child with CRS's functional ability

The Modified Barthel Index (MBI) was used to measure the deaf-blind adult child's functional ability. The MBI has shown to be valid and reliable for assessing disability (Kucukdeveci, et al., 2000; Shinar, et al., 1987). It contains 10 items with varying weights that score activities of daily living (ADL). The items bathing and grooming are scored 0 or 5; the items feeding, dressing, controlling bladder, controlling bowel, getting onto and off the toilet, and ascending and descending stairs are scored 0, 5, or 10. Items regarding moving from wheelchair to bed and walking on level surface are scored 0, 5, 10, or 15. The total MBI is a cumulative score of the 10 items, with a maximum score of 100 corresponding with complete independence, and a minimum score of 0 corresponding with total dependence. Celani et al., (2002) found that an MBI >90 (sensitivity 98%; specificity 97%) was a pivotal score for which patients did not require help from another person for everyday activities. Kay et al (1997) concluded that an MBI 80 (sensitivity 94%; specificity 80%) was the optimal cutoff score for self-reported dependency.

The MBI is primarily used as a record of what a patient does, not as a record of what a patient could do. The main aim is to establish the degree of independence from any help, physical or verbal, however minor and for

whatever reason. The MBI has been used in a variety of studies involving both acute and chronic disabilities. For example, although not comparable to the individual with CRS, a study assessing the management of Duchenne muscular dystrophy in young adults, found approximately 40% of their sample scored less than 50 points on the MBI (Meow-Keong Thong, et al., 2005). Another study evaluating the activities of daily living in patients with cerebral palsy found the MBI score was significantly lower in severe forms of the disability 16.9+/-24.0 and quadriplegic types 14.8+/-25.5 as compared with other disabilities (Lee, et al; 2004).

Statistical Analysis

To test the relationship between the independent and dependent variables, correlation and regression analysis was performed. The Pearson Correlation Coefficient factor was used to uncover the magnitude and significance of the relationship between the variables then a multivariate regression analysis was used to determine what the relationship between the variables are.

To assess the HRQOL (DV) the SF-36 structured self-reported scale, which evaluates eight domains of physical and mental health functioning with higher scores indicating better health, was used. The domains include: physical functioning, role limitation, bodily pain, general perception of health, energy fatigue, social function, role limitation due to emotional problems, and mental health. Each scale score ranges from 0 (worst health state) to 100 (best health state).

The results of this study are divided into internal and external factors which may predict maternal HRQOL. Internal factors are those unique to the care of the deaf-blind adult with CRS.

These include: method of communication (IV); behavior (IV); functional ability- assessed by using the MBI (IV) and maternal caregiver strain- assessed by using the CSI (IV). External factors are those which the literature has found to influence a HRQOL. These include: the residential status of the deaf-blind adult child with CRS the utilization of services, maternal financial status, maternal education, maternal years of caregiving, maternal marital status, number of children and birth order of children. This information was obtained via a self administered demographic questionnaire.

Results: Internal Factors

Communication between mother and adult deaf-blind child with CRS

- The communication method used between the mother and the deaf-blind adult child with CRS was significantly associated with the HRQOL domains (maternal SF36 total score).

- The more advanced method of communication between the mother and adult child with CRS, the higher the total score on the maternal SF36.
- The greatest comparison was between American Sign Language (M= 80.39, SD= 20.8) to gestures (M= 31.49, SD= 32.57), $F(8, 277) = 17.471, p < .001$.

Adult deaf-blind child with CRS's Behavior

- The deaf-blind adult child with CRS behaviors were significantly associated with the HRQOL domains (maternal SF36 total score).
- The more disruptive the adult child's behavior the lower maternal SF36 total score.
- The greatest comparison was between no apparent behavior (M= 89.77, SD= 11.7) to aggressive behavior (M= 30.95, SD= 30.37), $F(7, 279) = 21.130, p < .001$.

The deaf-blind adult child's functional ability-MBI

- The total MBI is a cumulative score with a maximum score of 100 corresponding with complete independence, and a minimum score of 0 corresponding with total dependence.
- The deaf-blind adult child with CRS functional ability (MBI) was significantly associated with the HRQOL domains (maternal SF36 total score): $F(22, 263) = 17.03, p < .001$ in the bivariate analysis.
- The MBI score indicated a positive relationship with a .51 point increase in the predicted HRQOL score in the multivariate analysis, holding all other variables constant. This was statistically significant $F(4, 280) = 222.327, p < .001$. (The higher the MBI score the more independent the child is resulting in a higher HRQOL score. The higher the HRQOL score the better the maternal health).

Maternal caregiver strain-CSI

- The Caregiver Strain Index (CSI) identifies families with potential caregiving concerns.
- Positive responses to seven or more items on the index indicate a greater level of strain.
- The maternal CSI scores were significantly associated in the bivariate analysis with the HRQOL domains (maternal SF36 total score): $F(13, 273) = 67.175, p < .001$.
- Multivariate analysis indicated a negative relationship: The CSI was associated with a - 4.6 point decrease in the predicted HRQOL score, holding all other variable constant.

This was statistically significant $F(4, 280) = 222.327, p < .001$. (A higher CSI score indicates more strain on the mother which is associated

with a lower HRQOL score. The lower the HRQOL score the poorer the health).

External Factors

The number of years the mother has cared for the adult deaf-blind child with CRS were significantly associated with the HRQOL domains (maternal SF36 total score). Additionally, with respect to the number of years, the regression coefficient for each year increase in caring would result in a 9.291 decrease in the HRQOL total score. This represents a negative association. The greatest comparison was between mothers providing care for 21-25 years ($M= 86.83$, $SD= 16.53$) to mothers providing care for more than forty years ($M= 30.74$, $SD= 29.27$), $F(8, 278) = 34.53$ $p < .001$.

Maternal marital status indicates a -1.0 point decrease in the predicted HRQOL score $F(4, 282) = 24.62$. This is not significant $p = .468$. Maternal education shows a 2.0 point increase in the predicted HRQOL score $F(5, 278) = 32.80$. This is not significant $p = .147$.

The number of children is associated with a 0.8 point increase in the predicted HRQOL score $F(7, 279) = 7.787$. This is not significant $p = .516$. Maternal financial status indicated a 4.9 point increase in the predicted HRQOL score $F(7, 279) = 20.48$. This is significant $p < .001$

With regards to the utilization of services, case management was associated with a 1.5 point increase in the predicted HRQOL score $F(2, 267) = 144.46$. This was not significant $p = .632$. A job coach shows a .02 point increase in the predicted HRQOL score $F(3, 269) = 101.45$. This was not significant $p = .994$. Residential placement indicates a -3.1 point decrease in the predicted HRQOL score $F(2, 273) = 207.38$. This was not significant $p = .285$. Respite care shows a .92 point increase in the predicted HRQOL score $F(2, 267) = 206.94$. This was not significant $p = .69$. Transportation demonstrated a 2.5 point increase in the predicted HRQOL score $F(2, 279) = 104.736$. This was not significant $p = .396$. Medical care was associated with a -6.2 point decrease in the predicted HRQOL score $F(2, 282) = 72.896$. This was not significant $p = .262$. Dental care illustrated a -4.0 point decrease in the predicted HRQOL score $F(2, 281) = 122.807$. This was not significant $p = .434$. Occupational therapy has a 5.0 point increase in the predicted HRQOL score $F(2, 238) = 64.666$. This was not significant $p = .056$. Physical therapy demonstrated a 4.4 point increase in the predicted HRQOL score $F(2, 246) = 45.468$. This was not significant $p = .166$. Speech therapy shows a -5.2 point decrease in the predicted HRQOL score $F(2, 232) = 38.651$. This was not significant $p = .115$. Psychotherapy has a 6.5 point increase in the predicted HRQOL score $F(2, 256) = 139.323$. This was not significant $p = .022$. Behavioral intervention demonstrated a 1.5 point increase in the predicted HRQOL score $F(2, 270) = 142.614$.

This was not significant $p = .604$. Social Security Benefits has a 1.8 point increase in the predicted HRQOL score $F(2, 278) = 44.475$. This was not significant $p = .569$. Money for personal expenses demonstrated a 1.2 point decrease in the predicted HRQOL score $F(3, 275) = 86.541$. This was not significant $p = .71$. Telephone contact

Participants verbally answered all five questionnaire questions in the same manner as their written responses. The findings of the open ended question; "What is it like having a child with CRS?" provided viewpoints to consider when exploring the impact of caring for an adult child with CRS. Annotations were documented during the interview process and common concepts, principles, and themes were noted.

Four major themes emerged from this data:

- Maternal commitment: Many women in this study felt that they were the primary person responsible for the well-being of their handicapped child. This was true for both single (either due to divorce or widowed) mothers and women who lived with a spouse.
- Demanding physical care of the child with CRS: The demands of physically taking care of an adult deaf blind child with CRS were frequently discussed by mothers whose children live at home.
- Time management: The issue of time management also was repeated throughout the interview process. Descriptions such as "always running" and "taking longer to do everything" were frequently voiced.
- Maternal health implication of having a child with CRS: Throughout the interview process there was an expressed concern for maternal health. While a majority of the mothers felt that the decline in health was due to the aging process others believed that the physical demands of caring for a disabled child influenced their state of health.

Interestingly, some questioned if their health issues were due to contracting Rubella during pregnancy.

Discussion

Mothers who are caring for an adult child with CRS are faced with a multitude of challenges during the course of their child's life. Although caregiving is a normal part of being the parent of a young child, this role takes on an entirely different meaning when a child experiences functional limitations and possible long-term dependence as they age and become adults.

Caregivers of adult children with CRS have a dual role of caring for themselves and for their adult child whose self-care demands cannot be independently met.

This study identified variables within the caregiving process that involved a lower level of maternal caregiver strain. These include a higher

level of functional ability of the adult child with CRS, enhanced communication between the adult child with CRS and the mother, the absence of behavioral abnormalities and the utilization of services. At the other end of this spectrum, certain aspects in caring for the adult child with CRS involved a high level of strain. These include severe behavioral problems, lack of effective communication methods, not utilizing services and the adult child's complete physical dependence.

Limitations

Several limitations of this study are acknowledged. The volunteer nature of the sample makes it difficult to determine the exact population it represents and how those who chose not to participate may be different from those who do. Another limitation was the reliance on self report measures. Self-report is appropriate for many of the variables that involve individual perceptions. Still, it would be beneficial to include multiple perspectives in future studies when appropriate. Additionally, as with any other data collected by questionnaires, many of the findings are confined by the responses to pre-assumed conditions. In the questionnaire section addressing the utilization of services, many of the respondents selected "I don't know" or wrote additional comments along the margin in an attempt to clarify their answers. This was especially true in the areas of behavior and utilization of services. Perhaps a different format would have provided a more accurate representation of their utilization response.

A potential confounding factor within this study is the role of the adult deaf-blind child's intelligence quota (IQ) in relation to communication and functional ability. Vernon (2005) explains that the IQ assessment of deaf and hard of hearing individuals is often difficult to ascertain due to improper testing instruments. Because there are so many etiologies surrounding hearing impairments that affect cognition differently, there is no homogeneous population to perform a comparison study. Research has indicated that severely deaf individuals are language and socially deprived and since performance IQ tests are cognitive tasks, the level of language development may or may not be related to cognitive ability (Vernon, 2005). The results of this study indicate both the adult deaf-blind child's communication and functional ability influence the mother's HRQOL, however, the link between these variables may not be direct but rather mediated by some other factor such as the child's IQ.

Conclusion

Recommendations for Future Research

The results of this study have important implications for future research as well as for interventions with maternal caregivers. Understanding

which characteristics of adult handicapped children contribute most significantly to problems experienced by the mother may be extremely valuable to professionals interested in helping families address these problems.

There is a great need for continued research in the area of IQ as it relates to deaf-blindness and more specifically, CRS. Most conventional assessment tools have not been designed or have the capacity to comprehensively assess individuals with dual sensory loss and multiple disabilities.

With deafblindness, individuals may be unable to see and hear instructions adequately and assessment tools that have clinical terminology may not be able to be directly translated into sign language. A range of clinical assessment tools partially adapted to suit people with deafblindness, in combination with observation and qualitative and quantitative data gathered over an extended time period might offer an area for further investigation. Because social support practices utilize many services, including health care, more needs to be known about how families, especially mothers, of adult children with special needs use these professional social support services. Areas such as barriers and incentives to utilization need further exploration.

The findings of the open ended question; “What is it like having a child with CRS?” provided viewpoints to consider when exploring the impact of caring for an adult child with CRS. More extensive data needs to be collected by interview instead of self administered questionnaires.

This would provide a richer perspective to validate or explicate portions of this study. Additionally, by interviewing these mothers, study participants would be better able to fully describe the actual experience without pre-set limitations.

Recommendation for practice, policy and education

The results of this study have implications for practice, policy and education. As women who have been the primary caregivers of their children with CRS increase in age, the predictors of maternal HRQOL become increasingly more important. It is imperative for health care providers to assess the health condition of caregivers in both the hospital and community settings whenever possible, to ensure that the challenges of caring will not cause them to become the second patient instead of the caregiver (Sit et al., 2004).

The number of years of caregiving was one variable most highly related to a significant decrease in the maternal HRQOL. Interventions may assist mothers of dependent adult children with late life caregiving responsibilities. One method to intervene might be to expand the available

respite care alternatives available or increase the utilization of support services.

Certain findings have particular implications for early intervention services to families of children with disability. The importance of communication, behavior and independence in activities of daily living skills in relation to maternal HRQOL suggests the need for greater focus on education, physical support and counseling assistance for both the disabled individual and the caregiver. The results also indicate the need for health care providers to be aware of and try to intervene before detrimental effects from stressful events in the lives of caregivers and from the day to day problems faced by mothers of the most severely disabled children occur.

The results of this study point to factors which influence maternal HRQOL. Successful intervention needs to address those factors identified as predictors of maternal HRQOL and provide services which are easily accessible to parents. The difficulties in obtaining access to and information about these services were voiced in interviews with this group of mothers. To quote one mother from Iowa: "Once my son reached his twenty-first birthday, all support stopped. He was too old for school programs and no longer entitled to intervention services. Every day I have to fight the state for help." A study by Sen and Yurtsever (2007) found that a majority of parents (81.5%) of disabled children want support and information but have difficulty acquiring it. More than half the families wanted information and counseling about their child's condition but found that the professionals provided insufficient support. Since each caregiver's situation is unique, it is important for health care providers to plan strategies for the needs of caregivers, make caregivers consciously aware of these strategies and implement and evaluate the plan to meet those needs. The caregivers' social network should be continuously assessed throughout the caregiving process. If support is lacking, health care providers can direct caregivers to the appropriate services. More resources are needed to support these families caring for adult disabled children at home. In addition, adult care alternatives need to be available when families are no longer able to care for this population. Furthermore, a full range of educational alternatives should be considered for funding and made available for adult disabled children.

Summary and Conclusion

Although rubella and new cases of congenital rubella syndrome are no longer a problem in the United States, currently, there are 10.2 million children with special health care needs (National Data Resource Center, 2008). In a time in which more parents are being encouraged to care for their disabled children in their homes, recognizing factors that influence maternal HRQOL and developing ways to assist them as they cope with added

burdens, as these children age, could well be among the most useful ways of helping these families.

As the prevalence of children with disabilities continues to increase, so does the demand for health care professionals who understand the unique needs of their caregivers. As these children transition to adult care, health care professionals must understand the impact the special needs have on the mother and by extension, the family, and be able to provide the care and resources needed to bridge the transition and support the continued care.

The importance of a full understanding of the predictors that impact a mother's health related quality of life cannot be overemphasized. Although this study made a contribution to the understanding of this area and ideally to the interventions that can actually improve one's life, more is needed.

The data presented in this study, identifies key factors affecting maternal health and wellbeing as it relates to the practical day-to-day needs of mothers caring for an adult deaf-blind child with CRS. Since CRS is often associated with a broad spectrum of disabilities that most often lead to some degree of dependence for self-care, mobility, and communication, it is thought that these findings could be cautiously generalized to mothers of children with other intellectual and physical disability. According to the National Data Resource Center for Child and Adolescent Health (2006), 1 in 5 American households with children have at least one child with a chronic or disabling health condition. Currently, 10.2 million children in the US are considered to have special health care needs (SHCN) (US Department of Health and Human Services, Maternal and Child Health Bureau, 2004). As increasing number of children with SHCN transition to adult care, health care professionals must understand the impact these special needs has on the child and family and be able to bridge that transition.

The data derived from this study is significant for health care professionals who work with caregivers and more specifically, mothers of children with disabilities. Health care professionals are in a position to assess, counsel and provide resources to caregivers before these predictors progress to emotional and physical illness. As the prevalence of children with disabilities continues to increase (Merrick & Carmeli, 2003), so does the demand for health care providers who understand the unique physical, psychosocial and caregiving needs.

Lastly, as further research is conducted, the information provided could potentially enable health care providers to tailor intervention and education strategies in order to better assist the growing number of families who take on the role of caring for a child with a disability. As these mothers take on a lifetime of caring for their children, health related quality of life issues become ever more important. This study has drawn attention to factors influencing the HRQOL of mothers caring for adult deaf blind children with

CRS. Several mothers in this study were acutely aware that their caregiving experience could have been worse. As one mother reflected, "I survived thanks to a solid, flexible marriage, professional experience dealing with disability issues, no behavior problems, and enough income to manage on reduced work hours. Not everyone with a CRS child has these things going for them. I have no idea how some mothers continue to survive." Yet, these mothers do continue to survive and struggle to persist in caring for their child with CRS on a daily basis. Proactive involvement by health care professionals, including routine contact with these mothers and appropriate support referrals has the possibility of significantly reducing the extent of caregiving difficulties while enhancing the quality and cost effectiveness of care. Finally, continued research among mothers of disabled children and adults may provide additional insights into how individuals, families, and communities adapt to ever-changing caregiving demands.

References:

- Allik, H., Larsson, J. and Smedje, H. (2006). Health-related quality of life in parents of schoolage children with Asperger syndrome or high-functioning autism. *Health Quality of Life Outcomes*. 4(1). 1477-1485.
- American Disability Association (2005). Information and technical assistance. Accessed at <http://www.ada.gov/>.
- American Occupational Therapy Association (2009). Accessed at <http://www.aota.org/>.
- American Rehabilitation Counseling Association (2005). Accessed at <http://www.arcaweb.org/>
- American Speech-Language-Hearing Association (ASHA). (2003). The prevalence and incidence of hearing loss in children. Rockville, MD: Author. Retrieved May 20, 2006, from <http://www.asha.org/public/hearing/disorders/children.htm>.
- Andersen, S. A. (1986). Cohesion, adaptability, and communication: A test of an Olson circumplex model hypothesis. *Family Relations*, 35, 289-293
- Barnes, H. L., & Olson, D. H. (1985). Parent-adolescent communication and the circumplex model. *Child Development*, 56, 438-447.
- Beach, S., Schulz, R., Yee, J. and Jackson, S. (2000). Negative and Positive Health Effects of Caring for a Disabled Spouse; Longitudinal Findings From the Caregiver Health Effects Study *Psychology and Aging*. 15(2). 259-261.
- Beckman, P.J. (1995). Comparison of mothers and fathers' perception of effect of young children with and without disabilities. *American Journal of Mental Retardation*. 95. 585-595.
- Bell, P., Eells, E. & Dodder, R. (2002). Controlling for environment and perceptions in studies of behavior of people with developmental disabilities. *Journal of Disability Policy Studies*, 13(1), 2-8.

- Bergner, M. (1985). Measurement of health status. *Medical Care*, 23, 696-704.
- Bergner, M. (1989). Quality of life, health status, and clinical research. *Medical Care*, 27, S148-S156.
- Bourquin, G. and Sauerburger, D. (2005). Teaching Deaf-Blind People to Communicate and Interact With the Public: Critical Issues for Travelers Who Are Deaf-Blind. *RE:view*, 37(3), 109-116.
- Brazier, J., Harper, R. and Jones, N.M. (1992). Validating the SF-36 health survey questionnaire a new outcome measure for primary care. *British Medical Journal*.305 (2). 160–164.
- Breslau, N., Staruch, K.S. and Mortimer, E.A .Jr. (1982). Psychological distress in mothers of disabled children. *American Journal of Disabled Children*.136:682 –686.
- Bristol, M.M., Gallagher, J.J. and Schopler, E. (1988). Mothers and fathers of young developmentally disabled and non-disabled boys: Adaptation and spousal support. *Developmental Psychology*. 24. 441- 451.
- Bruininks, R. H., Meyers, C. E., Sigford, B. B., & Lakin, K. C. (1981). Deinstitutionalization and community adjustment of mentally retarded people. Washington, DC: American Association on Mental Deficiency.
- Cadman D, Rosenbaum P, Boyle M, Offord, D.R. (1991). Children with chronic illness: family and parent demographic characteristics and psychosocial adjustment. *Pediatrics*. 87:884 – 889
- Chess, S. (1977). Follow up report on autism on congenital rubella. *Journal of Autism and Childhood Schizophrenia*. 7. 69-81.
- Chess, S. and Fernandez, P. (1980). Impulsivity in rubella deaf children. A longitudinal study. *American Annals of the Deaf*. 125. 505-509.
- Chess, S., Fernandez, P. and Korn, S. (1978). Behavioral consequences of congenital rubella. *Journal of Pediatrics*. 93. 699-703.
- Clancy, C. M., & Eisenberg, J. M. (1998). Outcomes research: Measuring the end results of health care. *Science*, 282, 245-246.
- Cummins, R.A. (2001). The subjective well being of people caring for a family member with a severe disability at home: a review. *Journal of Intellectual and Developmental Disability*. 26(1), 83-100.
- Dunlap, W.R. & Hollinworth, J. S. (1977) How does a handicapped child affect the family? The implication for practitioners. *Family Coordinator*. 26. 286-293.
- Dyson, L. (1991). Parents of young children with handicaps: Parental stress and functioning. *American Journal of Mental Retardation*. 95. 623- 629.

- Dyson, L. (1993). Response to the presence of a child with disabilities: parental stress and family functioning over time. *American Journal of Mental Retardation*, 98, 207–218
- Dyson, L.L. (1997). Fathers and mothers of school-age children with developmental disabilities: parental stress, family functioning, and social support. *American Journal of Mental Retardation*, 2:267–279.
- England, M. (2000). Caregiver strain: Considerations for change. *Nursing iagnosis*, 11(4), 164 - 176.
- England, M., & Roberts, B. (1996). Theoretical and psychometric analysis of caregiver strain. *Research in Nursing and Health*, 19,499-510.
- Erickson, M. and Upshur, C.C. (1989). Caretaking burden and social support: comparison of mothers of infants with and without disabilities. *American Journal of Mental Retardation*, 94:250–258.
- Franic, D. & Bothe, A. (2008). Psychometric Evaluation of Condition-Specific Instruments Used to Assess Health-Related Quality of Life, Attitudes, and Related Constructs in Stuttering. *American Journal of Speech - Language Pathology*, 17(1), 60-80.
- Friedrich, W.N., Friedrich, W.L. (1981). Psychosocial assets of parents of handicapped and nonhandicapped children. *American Journal of Mental Deficiencies*, 85:551–553.
- Grant, J., Elliott, T, Giger, J., & Bartolucci, A. (2001). Social problem-solving abilities, social support, and adjustment among family caregivers of individuals with a stroke. *Rehabilitation Psychology*, 46(1), 44-57.
- Grant, J., Glandon, G, Elliot, T, Giger, J., & Weaver, M. (2004). Caregiving problems and feelings experienced by family caregivers of stroke survivors the first month after discharge. *International Journal of Rehabilitation Research*, 27, 105-111.
- Grant, J. S., Elliot, T R., Weaver, M., Glandon, G. L., Raper, J. L., & Giger, J. N. (2006). Social support, social problem-solving abilities, and adjustment of family caregivers of stroke survivors. *Archives of Physical Medicine and Rehabilitation*, 87, 343-350.
- Guyatt, G.H., Feeny, D.H.and Patrick, D.L. (1993) Measuring heath-related quality of life. *Annals of Internal Medicine*.118. 622-629.
- Hedov, G., Anneren, G.and Wikblad, K. (2000). Self-perceived health in Swedish parents of children with Down's syndrome. *Quality of Life Research*. 9(1). 415–422.
- Helen Keller National Center for Deaf-blind Youths and Adults (HKNC). Accessed April 12, 2006 at HKNC.org.
- Herrmann, K.L. (1991). Rubella in the United States: toward a strategy for disease control and elimination. *Epidemiology of Infection*. 107(2). 55-61.

- Hicks, D. (1970). Comparison of profiles of rubella and non rubella deaf children. *American Annals of the Deaf*.115. 86-92.
- Hunt, C. (2003). Concepts in caregiver research. *Journal of Nursing Scholarship*, 35(1), 27-32.
- Isett, R. D., & Spreat, S. (1979). Test-retest and interrater reliability of the AAMD Adaptive Behavior Scale. *American Journal of Mental Deficiency*, 84, 93-95.
- Kahana F, Kahana B, Johnson JR, Hammond RJ, and Kercher K: Developmental challenges and family caregiving: bridging concepts and research. In *Caregiving Across the Lifespan*. Edited by: Kahana E, Biegel DE and Wykle ML. Thousand Oaks, A, Sage Publications; 1994.
- Kay R, Wong KS, Perez G, Woo J. (1997). Dichotomizing stroke outcomes based on selfreported dependency. *Neurology*. 49: 1694–1696.
- Kazak, A. and Wilcox, B. (1984). The structure and function of social support networks in families with a handicapped child. *American Journal of Community Psychology*. 12. 645-661.
- Knussen, C., & Sloper, P. (1992). Stress in families of children with disability: A review of risk and resistance factors. *Journal of Mental Health*, 1, 241-256.
- Krauss, M.W. (1993). Child-related and parenting stress: similarities and differences between mothers and fathers of children with disabilities. *American Journal of Mental Retardation*. 1993. 393-404.
- Krauss, M.W. (1993). On the medicalization of family caregiving. *Mental Retardation*. 31(2). 78-79.
- Krause, N. (1987). Chronic financial strain, social support, and depressive symptoms among older adults. *Psychology and Aging* 2.185–192.
- Krauss, M.W., Wells, N., Guley S. and Anderson, B. (2001). Navigating systems of care: results from a national survey of families of children with special health care needs. *Chilli Service and Social Policy Research and Practice*. 4:165-187.
- Kucukdeveci AA, Yavuzer G, Tennant A, Suldur N, Sonel B, Arasil T. (2000). Adaptation of the modified Barthel Index for use in physical medicine and rehabilitation in Turkey. *Scandinavian Journal of Rehabilitative Medicine*.32 (2):87-92.
- Lee, D; Oh, K; Lee, K; Choi, K. and Kim, M. (2004). The Current Status of Cerebral Palsy Patients in Handicapped Residential Facility. *Korean Journal of Rehabilitation Nursing*. 7(1). 96-104.
- Lyons, R., Perry, H.M. and Littlepage, B. (1994). Evidence for the validity of the Short-form 36 Questionnaire (SF-36) in the elderly population. *Age Ageing*. 23(3).182–184.

- MacKeigan, L. D., & Pathak, D. S. (1992). Overview of health related quality of life measures. *American Journal of Hospital Pharmacy*, 49, 2236-2245.
- Magana, S.M., Greenberg, J.S. and Seltzer, M.M. (2004). The health and well-being of black mothers who care for their adult children with schizophrenia. *Psychiatric Services*. 55(1). 711–713.
- McCallum, J. (1995) The SF-36 in an Australian sample validating a new, generic health status measure. *Australian Journal of Public Health*.19 (2).160–166.
- McGrew, K. S., Ittenbach, R. F., Bruininks, R. H., & Hill, B. K. (1991). Factor structure of maladaptive behavior across the lifespan of persons with mental retardation. *Research on Developmental Disabilities*, 12, 181-199.
- McHorney, C. A., & Tarlov, A. R. (1995). Individual-patient monitoring in clinical practice: Are available health status surveys adequate? *Quality of Life Research*, 4, 293-307.
- McHorney, C., Ware, J.E., Rogers, W., Raczek, A. and Lu, J. (1992). The validity and relative precision of the MOS short- and long-form health status scales and Dartmouth COOP charts results from the Medical Outcomes Study, *Medical Care*. 30 (5 Suppl). MS253–MS265.
- McHorney CA, Ware JE, Lu RJF, Sherbourne CD: The MOS 36-item Short Form Health Survey (SF-36) III. Tests of data quality, scaling assumptions, and reliability across diverse patient groups. *Med Care* 1994, 32:40-66.
- McHorney, C.A., Kosinski, M. and Ware, J.J. (1994). Comparisons of the costs and quality of norms for the SF-36 health survey collected by mail versus telephone interview: results from a national survey. *Medical Care*. 32:551-67.
- McKinney, B. and Peterson, R.A. (1987). Predictors of stress in parents of developmentally disabled children. *Journal of Pediatric Psychology*.12:133 – 150.
- Merrick, J. and Carmeli, E. (2003) A Review On The Prevalence Of Disabilities In Children. *The Internet Journal of Pediatrics and Neonatology*. 3(1). Accessed at <http://www.ispub.com/ostia/index.php?xmlFilePath=journals/ijpn/vol3n1/prevalence.xml>.
- Menser, M., Dods, L. and Harley, J. (1967). A twenty-five year follow up of congenital rubella. *Lancet*. 2. 1347-1349.
- Menser, M. and Reye, R. (1974). The pathology of congenital rubella: A review written by request. *Pathology*. 6. 215-218.
- Morreau, L. E. (1985). Assessing and managing problem behaviors. In K. C. Lakin & R. H. Bruininks (Eds.), *Strategies for achieving community*

integration of developmentally disabled citizens (pp. 105-127). Baltimore: Brookes.

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Nord, G., Wieseler, N., & Hanson, R. (1998). The assessed crisis service needs of clients in community-based programs serving persons with developmental disabilities. *Behavioral Interventions*, 13, 169-179.

O'Donnell, N. A Report on a Survey of Late Emerging Manifestations of Congenital Rubella Syndrome. October, 1991. Helen Keller National Center. Sands Point, New York.

O'Donnell, N. (1995). Congenital rubella syndrome: 30 years after the epidemic of the 1960's. *Deaf-Blindness American Rehabilitation*. Summer, 10-14.

Orange, J. B. (1991). Perspectives of family members regarding communication changes. In R. Lubinski (Ed.), *Dementia and communication* (pp. 168-186). Philadelphia: B.C. Decker.

Patrick, DL and Bergner, M. (1990). Measurement of Health Status in the 1990s. *Annual Review of Public Health*. 11(1). 165-183.

Patrick, D. L., & Erickson, P. (1993). *Health status and health policy: Quality of life in health care evaluation and resource allocation*. New York: Oxford University Press.

PHAC-Public Health Agency of Canada. (2002). Vaccine preventable diseases. http://www.phac-aspc.gc.ca/im/vpd-mev/rubella_e.html.

Raina, P., O'Donnell, M., Rosenbaum, P. and Brehaut, J. (2005). The health and well-being of caregivers of children with cerebral palsy. *Pediatrics*. 115(6). e626.

Raina, P., McIntyre, C, Zhu, B., McDowell, I., Santaguida, L., Kristjansson, B., et al. (2004). Understanding the influence of the complex relationships among informal and formal supports on the well-being of caregivers of persons with dementia. *Canadian Journal on Aging*, 23(Suppl. 1), 49-59.

Raphael, D. (1997). Quality of life of persons with developmental disabilities: Five issues concerning its nature and measurement. *Journal on Developmental Disabilities*, 5(1), 44-66.

Sabbeth, B. and Leventhol, J. (1984). Marital adjustment to chronic childhood illness. *Pediatrics*. 73(2). 762-768.

Sanson-Fisher, R. and Perkins, J. (1998). Adaptation and validation of the SF-36 Health Survey for use in Australia. *Journal of Clinical Epidemiology*. 51.961-967.

Segal, R., & Frank, G. (1998). The extraordinary construction of ordinary experience: Scheduling daily life in families of children with attention deficit

- hyperactivity disorder. *Scandinavian Journal of Occupational Therapy*, 5, 141-147.
- Schipper, H., Clinch, J. J., & Olweny, C. L. M. (1996). Definitions and conceptual issues. In B. Spilker (Ed.), *Quality of life studies: Definitions and conceptual issues* (pp. 11-24). New York: Raven Press.
- Sen., E and Yurtsever, S (2007). Difficulties experienced by families with disabled children. *Journal of Specialists in Pediatric Nursing*. 12(4). 238-253.
- Seybold, J; Fritz, J. & MacPhee, D. (1991) Relation of social support to the self perception of mothers with delayed children. *Journal of Community Psychology*. 19. 29-36.
- Shinar D, Gross CR, Bronstein KS, Licata-Gehr EE, Eden DT, Cabrera AR, Fishman IG, Roth AA, Barwick JA, Kunitz SC. (1987). Reliability of the activities of daily living scale and its use in telephone interview. *Archives of Physical Medicine and Rehabilitation*.68 (10):723-8.
- Sit, J., Wong, T, Clinton, M., Li, L., & Fong, Y (2004). Stroke care in the home: The impact of social support on the general health of family caregivers. *Journal of Clinical Nursing*, 13, 816-824
- Sloper, P. and Turner, S. (1993). Risk and resistance factors in the adaptation of parents of children with severe physical disability. *Journal of Child Psychology and Psychiatry*.34:167 –188.
- Smith, C.E. (1996). Quality of life and care giving in technological home care. *Annual Review of Nursing Research*, 14, 95-118.
- Smith, L. N., Lawrence, M., Kerr, S. M., Langhorne, P, & Lees, K. R. (2004). Informal carers' experience of caring for stroke survivors. *Journal of Advanced Nursing*, 46(3), 235-244.
- Stewart, A.L., Hays, R.D.and Ware, J.E. (1988) The MOS short-form general health survey. *Medical Care* 26.724-735.
- Sullivan, M. (2004). Caregiver Strain Index (CSI). *Medsurg Nursing*. 13(5). 353- 355.
- Testa, M.A.and Simonson, D.C. (1996) Assessment of quality-of-life outcomes. *New England Journal of Medicine*. 334:835-840.
- Thornton, M. (2003). Analysis of the reliability of the modified caregiver strain index. *Journal of Gerontology Series B. Psychological and Social Sciences*. 58(2):S127-32.
- Trute, B. (1995). Gender differences in the psychological adjustment of parents of young, developmentally disabled children. *Journal of Child Psychology and Psychiatry*. 36:1225-1242.
- Vernon, M. (1967). Characteristics associated with post rubella deaf children. *Volta Review*. 69.176-185.
- Vernon, M. (1969). Usher's syndrome—deafness and progressive blindness: Clinical cases, prevention, theory and literature survey. *Journal of Chronic Diseases*. 22(3). 133-151.

- Vernon, M. (2005). Fifty Years of Research on the Intelligence of Deaf and Hard-of-Hearing Children: A Review of Literature and Discussion of Implications. *Journal of Deaf Studies and Deaf Education*. 10 (3). 225-229.
- Vernon, M., Grieve, B. and Shaver, K. (1980). Handicapping conditions associated with the congenital rubella syndrome. *American Annals of the Deaf*. 3, 993-997.
- Vernon, M. and Hicks, D. (1980). Overview of rubella, herpes, cytomegalovirus and other viral diseases: Their relationship to deafness. *American Annals of the Deaf*. 125. 529-534.
- Von Bertalanffy, L. (1968). *General systems theory. Foundation, development and applications*: New York. Braziller.
- Ware, J.E. and Gandek, B. (1998). IQOLA Project. Overview of the SF-36 Health Survey and the International Quality of Life Assessment (IQOLA) Project. *Journal of Clinical Epidemiology*. 51. 903-912.
- Ware, J.E. and Sherbourne, C.D. (1992) The MOS short-form health survey (SF-36): 1. Conceptual framework and item selection. *Medical Care*. 30:473-483.
- Ware, J.E., Snow, K.K., Kosinski, M. and Gandek, B. (1993). *SF-36 Health Survey manual and interpretation guide*. The Health Institute. New England Medical Center, Boston.

ARE HUMAN CELL LINES HUMAN?

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Abstract

Among the most novel and startling objects in the biological world discovered and developed by modern science is the phenomenon of human cell lines: living cells separated from living bodies and living and reproducing in laboratories over extended periods of time. This scientific status and utility of such cells is first reviewed, distinguishing cell cultures from cell strains and cell lines. Next, the ontological status of cell lines is reviewed in the tradition of *philosophia perennis*, and it is asserted that cell lines are neither formally human as extensions of human life or human parts, nor materially human in configuration; rather, they are new organisms animated by a vegetative soul, despite the biological continuity between a human being and a human cell line. Such cells can be conceptualized as having undergone substantial change from human part to individual vegetative life forms, or as virtually present in the human being with the potency like elements in a mixture to emerge from the composite and exist under highly specific and artificial conditions.

Keywords: Human cells lines, human

Introduction

Aristotle said that philosophical inquiry begins with wonder.¹ Neither doubt nor certitude can sustain the philosophical endeavor. Skepticism and rationalism cannot construct the edifice of a philosophical understanding of the world *as given*. “(A) sense of wonder and astonishment in the face of the vista presented by creation remains the foundation for all philosophical and theological enterprise.”² The startling and strange specificity of the inanimate and animate world implies limitation and contingency: the world as finite and specific cannot account for itself. Yet inanimate and animate beings display order, which makes them accessible to

¹ Aristotle, *Metaphysics* (982^b12), in *The Complete Works of Aristotle*, Vol. 2, ed. J. Barnes (Princeton: Princeton University Press, 1984), 1554.

² Mark Armitage, “The Riddle of God and the Solutions of Man. Chesterton’s *Metaphysics* of Wonder,” *The Chesterton Review*, Vol. XXVII, No. 4 (November, 2001), 461.

the wondering human mind. Among the most novel and startling objects in the biological world discovered and developed by modern science is the phenomenon of human cell lines: living cells separated from living bodies and maintained alive and growing in laboratories over extended periods of time.

Human cells are used for many purposes, including research and the cultivation of vaccines. The cells constituting human cell lines have acquired the ability to endure and proliferate indefinitely, an ability referred to as immortalization. Some of these cells have been the subject of considerable controversy because they were derived from aborted human fetuses. Beyond the question of the moral illicitness of their use given their origin, there is an even more fundamental question as to their ontological status as living beings, in particular their relationship to the human soul. Are such cell lines some kind of extension of human life? As living beings, cells must have souls, but do they have human souls, or merely animal or vegetative souls? If the latter, do such cell lines constitute new life forms on the planet? Can new species be produced in the laboratory? Or do cell lines constitute a kind of virtual life within the organism? The following is an attempt to answer these questions while explicating the ontological status of human cell lines within the philosophical tradition of Aristotle and Aquinas, the tradition of *philosophia perennis*.

The Science

Before proceeding with a philosophical analysis, it is necessary to have a basic understanding of the science of human cell lines. Primary human *cell cultures* are cell populations derived from human tissue that have undergone no subcultivations.³ Subcultivation occurs when cells growing and dividing in basic nutrients or growth media in a container are split into smaller portions and introduced into new containers and growth media.⁴ *Cell strains* are cell populations that have the karyology, or the number and types of chromosomes, of the human tissue of origin and have a finite capacity to replicate.⁵ They have been subcultivated more than once *in vitro*.⁶ *Cell Lines* are cell populations that do not have the karyology of the human tissue of origin and grow *in vitro* by serial subcultivations for

³ L. Hayflick, "History of Cell Substrates Used for Human Biologicals," *Symposium on Continuous Cell Lines as Substrates for Biologicals*, Develop. Biol. Standard, Vol. 70 (1989), 12.

⁴ Stephen S. Hall, *Merchants of Immortality* (Boston/New York: Houghton Mifflin, 2003), 23.

⁵ L. Hayflick, "History of Cell Substrates," 12.

⁶ L. Hayflick and P. S. Morehead, "The Serial Cultivation of Human Diploid Cell Strains," *Experimental Cell Research* 25 (December, 1961), 586.

indefinite periods of time.⁷ Of note, cell strains do not produce tumors when inoculated into experimental animals, whereas cell lines may produce tumors.⁸

It has been known since the early 1960's that normal human cells display a finite proliferative lifespan *in vitro* culminating in senescence, whereas most common carcinomas contain cells that can proliferate indefinitely.⁹ Cell senescence and immortalization are two alternative cellular proliferation phenotypes.¹⁰ Previously, the finite cell doublings of normal cell populations *in vitro* was attributed to poor culture technique or the number of subcultivations, not to an innate characteristic of the cells which corresponds to the natural lifespan of the organism as a whole.¹¹ Cell lines share properties with cancer cells, exhibiting, regardless of whether the tissue of origin was normal or cancerous, the extraordinary capacity to multiply indefinitely *in vitro*. Such cell lines can be regarded as "oncogenesis *in vitro*."¹² In fact, replicative senescence as a preprogrammed limitation to cellular growth may be a suppressor mechanism against malignant transformation.¹³ Alternatively, "in many experimental systems immortalization appears to be an obligatory prerequisite for tumorigenic transformation."¹⁴

The goal of biotechnology is to make immortalization of cell lines not synonymous with malignant transformation. The goal is "to provide continuous cell lines from specific cell lineages that are safe to use and with phenotypic properties relevant to their tissue of origin".¹⁵ Unlike rodent cells, a major limitation on the exploitation of human differentiated cells for research and medicine is their limited *in vitro* lifespan, likely reflecting their greater genomic stability.¹⁶ Human dermal fibroblasts, for example, form vigorous cell cultures which can be subcultivated once or twice per week,

⁷ L. Hayflick, "History of Cell Substrates, 12.

⁸ *Ibid.*, 12-13.

⁹ E. K. Parkinson, "Human Keratinocyte Immortalization: Genetic Basis and Role in Squamous Cell Carcinoma Development," in *Culture of Immortalized Cells*, eds. R. Ian Freshney & Mary G. Freshney (New York: Wiley-Liss, 1996), 2.

¹⁰ Robert F. Newbold and Andrew P. Cuthbert, "Mapping Human Senescence Genes Using Interspecific Monochrome transfer," in Freshney & Freshney, 54.

¹¹ L. Hayflick, "The Limited *In Vitro* Lifetime of Human Diploid Cell Strains," *Experimental Cell Research* 37 (1965), 614, 628-29, 634.

¹² *Ibid.*, 628-29.

¹³ Robert F. Newbold and Andrew P. Cuthbert, "Mapping Human Senescence Genes," 54.

¹⁴ Emma L. Duncan, et al., "Immortalization of Human Mesothelial Cells," in Freshney & Freshney, 240.

¹⁵ R. Ian Freshney, "Preface," in Freshney & Freshney, xi.

¹⁶ L. V. Mayne, et al., "Development of Immortal Human Fibroblast Cell Lines," in Freshney & Freshney, 78; K. Mace, et al., "Human Hepatocyte," in *Culture of Immortalized Cells*, in Freshney & Freshney, 162.

but decline in growth rate and degenerate after approximately 60 population doublings.¹⁷

Human cell lines are valuable for many reasons. It is possible to do research on genetically identical cells for repeatable experiments, instead of using primary cells from multiple donors. The propensity of cell lines to form malignant transformations renders them useful for understanding the mechanism of cancer. They are useful for studying other disease states and for the study of wound healing. They are also cellular systems for the commercial production of differential cell proteins useful in medicine, such as hormones and growth factors.¹⁸ They are also useful for the study of viruses – which can only replicate in living cells – and for vaccine production.¹⁹ One famous cell strain derived from fetal lung tissue, called WI-38, revolutionized the manufacture of vaccines and was responsible for all the rubella vaccine produced in the Western Hemisphere, a vaccine mandatory for school admission in the U.S.²⁰ WI-38 or similar strains produce many other virus vaccines, including polio, adenovirus, rubeola, and rabies.²¹

There are also disadvantages to cell lines. Adult human cells may be teeming with viruses and may contain a latent cancer virus; as karyologically abnormal by definition, such cell lines may produce tumors when inoculated into animals or people.²² To lower these risks, pristine virus-free human fetal tissue has been used instead of contaminated monkey cells. Yet cell strains like WI-38 will eventually die. Furthermore, WI-38 and other cells strains have been derived from aborted human beings, which has been a fundamental ethical issue regarding their production and use. This was reflected in the controversy surrounding President Bush's decision to not allow government funding for the development of new stem cell strains, while allowing the use of existing strains.²³ It should be noted that human embryonic cells are considerably prone to malignant transformation, as they represent a state of development which is dynamic and genetically unstable. Unlike embryonic stem cell research, adult stem cell research, using cells from adult tissues or umbilical cords, has led to the successful treatment of

¹⁷ L. V. Mayne, et al., "Development of Immortal Human Fibroblast Cell Lines," 78.

¹⁸ Robert F. Newbold and Andrew P. Cuthbert, "Mapping Human Senescence," 54.

¹⁹ Stephen S. Hall, *Merchants of Immortality*, 21, 24.

²⁰ *Ibid.*, 24, 30-31, 33.

²¹ L. Hayflick, "History of Cell Substrates," 22

²² *Ibid.*, 24.

²³ Stephen S. Hall, *Merchants of Immortality*, 22-23, 297.

more than 70 kinds of cancer and autoimmune disorders; such cells are part of the adult body's natural repair mechanism.²⁴

The development of an immortalized phenotype, or actual cell lines versus cell strains, requires a number of genetic changes. "In general, normal rodent cells in culture readily generate immortal variants, unlike their human counterparts, which are completely resistant to spontaneous immortalization and can be induced only to generate immortal variants (by carcinogens or DNA tumor virus early genes) with great difficulty.²⁵ The most common and successful method for deriving immortal human fibroblasts is through the expression of Simian virus 40 (SV-40) t-antigen.²⁶ Yet this *in vitro* gene insertion means that every cell line produced has the oncogene integrated into different sites in the genome, which means that so-called identical cell lines can express different levels of oncogene product and different behaviors.²⁷

The effect of SV-40 T-antigen expression extends *in vitro* lifespan, although it does not directly prevent cell senescence. At the end of this extended lifespan, the cells enter a degenerative phase known as "crisis." SV-40 T antigen also destabilizes the genome, affecting chromosome stability and ploidy (the number of sets of chromosomes), which may favor *secondary* genetic changes relieving restrictions on imposed lifespan.²⁸ Rarely, foci of dividing cells may appear at a frequency of 10^{-5} to 10^{-9} .²⁹ These cells may or may not have undergone crisis themselves, but appear to have accumulated enough genetic changes to permit immortal growth: they have emerged from crisis.³⁰

There are advantages and disadvantages to such genetic manipulation for the production of cell lines. Advantages include avoiding the cytotoxic effects of carcinogens. Also, virus-transformed cells express many of the phenotypic or differential properties of the untransformed host, which makes them valuable as cell lines, providing large quantities of *in vitro* biomaterial for the study of normal functioning and disease.³¹ Disadvantages include the

²⁴ Tadeusz Pacholczyk, "The Ten Great Myths in the Debate Over Stem Cell Research," http://www.crossroadsinitiative.com/library_article/964/Ten_Great_Myths_in_the_Debate_Over_Stem_Cell_Research.html (accessed June 21, 2012); Steve Weatherbe. 2012. Fetal Stem Cells Treat More Diseases? *National Catholic Register*. June 17-30.

²⁵ Robert F. Nebold and Andrew P. Cuthbert, "Mapping Human Senescence," 55.

²⁶ L. V. Mayne, et al., "Development of Immortal Human Fibroblast Cell Lines," 78.

²⁷ M. Nobel and Susan C. Barnett, "Production and Growth of Conditionally Immortal Primary Glial Cell Cultures and Cell Lines," in Freshney & Freshney, 339.

²⁸ L. V. Mayne et al., "Development of Immortal Human Fibroblast Cell Lines," 78-79.

²⁹ Emma L. Duncan et al., "Immortalization of Human Mesothelial Cells," 241.

³⁰ L. V. Mayne et al., "Development of Human Fibroblast Cell Lines," 90-92.

³¹ Mark L. Sternberg, "Immortalization of Human Epidermal Keratinocytes by SV 40," in Freshney & Freshney, 96.

difficulty targeting rare cells and difficulty promoting cell division and the ongoing functioning of the immortalizing gene. There is also the need to grow such cells extensively *in vitro* before there are enough for experimental or commercial use.³² “Unfortunately most successful immortalizing genes (particularly SV 40 T) have pleiotropic actions and may perturb the growth and differentiation states of the cell to such an extent that it ceases to be a valid representation of the normal.”³³ An immortalizing gene by definition prevents cells from terminally differentiating and “can also alter the response of cells to exogenous signals, such as mitogens or regulators of differentiation.”³⁴ In general, increased proliferative potential occurs at the price of increased karyotypic changes. Accordingly, to varying degrees, *in vitro* cell lines become unlike *in vivo* human cells.

Human Soul?

Human cell lines are alive, therefore they have souls. According to Aristotle, the soul is the cause or source of the living body: “It is the source of movement, it is the end, it is the essence of the whole living body.”³⁵ According to Aquinas, the human soul is the principle of human life and all human acts.³⁶ As living beings derived from, but living apart from, a human being, the existence of cell lines begs the question as to their relationship to the human soul, the principle of life in the being of their origin. Are human cell lines an extension of human life? Another way of stating the question philosophically is to ask whether or not the change from cells living in a human being to cells living in a container of growth medium represents substantial change, or merely a change in quality or location.

According to Aristotle, there are six kinds of change: generation, destruction, increase, diminution, alteration, and change of place, which can be reduced to change in substance, quantity, quality and place.³⁷ Material being is changeable being (*ens mobile*). Change is the act of that existing in potentiality.³⁸ A material being is a composite being comprised of a purely potential or determinable principle (prime matter), by which it is individuated and capable of change, and a determining principle (form) by

³² M. Noble and Susan C. Barnett, “Production and Growth,” 339.

³³ David Wynford-Thomas, “Thyroid Epithelium,” in Frehsney & Freshney, 197.

³⁴ M. Nobel and Susan C. Barnett, “Production and Growth,” 336.

³⁵ Aristotle, *De anima* (415^b10) in Vol. 1, Barnes, 661.

³⁶ Thomas Aquinas, *Summa Theologiae*, trans. by Fathers of the English Dominican Province (1911; repr. Westminster, MD: Christian Classics, 1981), Ia, q. 75, a. 1; Ia, q. 76, a. 4, ad. 1.

³⁷ Aristotle, *Categoria* (15^a14) in Barnes, 23.

³⁸ Thomas Aquinas, *De Trinitate* (V, 4, response) in *The Trinity and the Unicity of the Intellect*, trans. Sr. Rose Emanuella Brennan, S.H.N (St. Louis: Herder, 1946), 163.

which it is actual and remains what it is.³⁹ To change, something must both 'be' and 'become;' that is, something must obviously change, yet something must also stay the same, or it would not be the same being undergoing change. Accordingly, a changeable being is a being in potency. Change is the actualization of the potency of an actual, composite material being. Pure potency cannot exist in itself, whereas pure act, namely God, cannot not exist and is utterly unchangeable. A material being can undergo both accidental change in quality or size and the more fundamental substantial change for which prime matter is the substrate.⁴⁰

Wherever there is life, there the soul must be present.⁴¹ The cell is the biological unit of life; therefore the soul must be present in every cell of the body. The body is composed of cells, so the soul must be present throughout the entire body.⁴² Yet the soul as the substantial form of the body has no parts. The soul in man possesses the simple, indivisible immaterial quality of its highest operations, namely intellect and will, which must in turn correspond to the immaterial quality of their objects, namely universal class-essences.⁴³ Substantial form and prime matter are *ultimate, immeasurable* co-principles of a material being, irreducible to anything else, not existing without the other, and constitutive of one material substance.⁴⁴ They are concreated with the composite, that is, they follow immediately upon the creation of the composite.⁴⁵ Yet the human soul is spiritual and so must come from outside matter; accordingly, it can survive the death of the composite. The human brain may be necessary for intellection in the composite creature which is man, but it is insufficient to account for intellection, which is a spiritual act. The human soul as a special type of substantial form is described by Aquinas:

A form which has an activity thanks to one of its powers or faculties in which its matter does not participate has existence of itself. It does not exist simply because its composite does, as in the case with other forms, but rather the composite exists thanks to it. Therefore, the composite being destroyed, a form which exists thanks to the existence of the

³⁹ *New Catholic Encyclopedia*, s.v. "Knowledge, Theories of – Greek Origins of the Problem."

⁴⁰ Celestine N. Bittle, *From Aether to Cosmos: Cosmology* (Milwaukee: Bruce Publishing, 1941), 243, 289.

⁴¹ *Ibid.*, 515.

⁴² Celestine N. Bittle, *From Aether to Cosmos: Cosmology* (Milwaukee: Bruce Publishing, 1941), 516.

⁴³ Mortimer J. Adler, "Universal and Particular," in *The Great Ideas* (New York: MacMillan Publishing, 1952), 887.

⁴⁴ J. F. Donceel, *Philosophical Psychology* (New York: Sheed & Ward, 1955), 36.

⁴⁵ Thomas Aquinas, *SummaTheologiae*, Ia, q. 44, a. 2, ad. 3; Augustine Regan, "The Human Conceptus and Personhood," *Studia Moralia* 30.1 (1992): 116.

composite is destroyed, whereas a form through whose existence the composite exists, not vice versa, need not be destroyed when the composite is destroyed.⁴⁶

That the human soul could endure in cell lines, thereby precluding substantial change, is not inconceivable given the nature of the presence of the soul in the composite. This mysterious presence is called *definitive presence*, and is distinguished from the *circumscriptive presence* of bodies, in which the whole is in the whole and the proportionate part in every proportionate part, and *omnipresence*, reserved to God, in which there is no being to which He is not present.⁴⁷ The human soul's definitive presence in the composite ensouled body is a non-quantitative presence: it is a presence of a simple, unextended substantial co-principle in place, in which it is entire in each part and entire in the whole. This type of presence cannot be imagined, but it can be conceived. It is present in discontinuous parts of the composite without sacrificing its indivisibility; it can also exercise some but not all of its powers in a given part.⁴⁸ Plant and animal souls are actually undivided but indirectly divisible and potentially multiple. Subject to certain conditions, plant bodies can be divided and each animated part can function as a whole plant without a need for assuming the generation of a new soul. Plants with grafts, on the other hand, have two souls. Some animals, such as the hydra, can be divided with each developing into a complete individual. Such souls appear to be indivisible *per se*, but divisible *per accidens*. Unlike the human soul, plant and animal souls are completely immersed in matter and intrinsically dependent upon matter: they are essentially material souls.⁴⁹ Plant and animal souls exist by means of the composite, whereas the human soul *makes* the composite – including the body.⁵⁰

The human soul's entire definitive presence in each cell makes it at least conceivable that its presence continues in living cells separated from the body. Because it is not possible to observe or measure the soul, evidence for its presence or absence is indirect and inferential, based upon what can be observed with regard to the material composite being. If the human soul persists in separated cell lines, such cells would not have undergone substantial change, would not represent new individual human beings, since the human soul is indivisible, and would be formally the same as the human

⁴⁶ Thomas Aquinas, *De Unitate Intellectus*, par. 38, <http://josephkenny.joyeurs.com/CDtexts/DeUnitateIntellectus.htm> (accessed June 21, 2012).

⁴⁷ *Catholic Encyclopedia*, s.v. "Bilocation."

⁴⁸ Celestine N. Bittle, *The Whole Man: Psychology* (Milwaukee: Bruce Publishing, 1945), 516-17.

⁴⁹ *Ibid.*, 490; 492-93.

⁵⁰ *Ibid.*, 493; Augustine Regan, "The Human Conceptus," 122.

being from which they were separated and derived. This would constitute a kind of ‘biological bilocation.’

Two empiric observations support the possibility of the ongoing presence of the human soul in human cell lines. First, there is a seamless continuity of life from the human being to the derivative cells. Usually in nature, living organisms that undergo instantaneous substantial change corrupt or die; they do not immediately evolve into a specifically different kind of living being. Secondly, defective or damaged human bodies do not preclude the presence of the human soul. Human beings who never develop higher cognitive operations, as with the retarded, are still considered to be human beings. People who have had strokes are still human. In other words, the fact that certain human bodies either do not develop, or develop and then lose the neuronal foundation for rational operations, does not mean that the rational soul is absent and a human being has undergone substantial change to a non-rational animal being. A defective body is not a different body. The rational soul is simply not able to actualize the higher intellectual operations, but the potency for such operations remains. As explained by Aquinas, “understanding is said to be the act of the composite, not essentially but accidentally, insofar as its object, the phantasm, is in a bodily organ and not because this activity is exercised through a bodily organ.”⁵¹ Cell lines could be a kind of defective human body still animated by the rational soul.

The argument against the enduring presence of the human soul in cell lines is stronger and more persuasive than the one in its favor, and is also consistent with common sense. If the human being who is the source of the cells constituting the cell line is dead, the presence of that soul in the derivative cell lines would mean that, on the contrary, he is not dead, which would constitute a violation of the principle of noncontradiction. The Catholic Church, for example, allows organ donation in the case of true brain death. The organ(s) transplanted must be alive, even though the donor is dead. The donor is not still alive through the transplanted organ. For a man to die, the rational soul must separate from the body, resulting in the substantial change of the human body to an entirely different substance: a corpse. What is true for organs should also be true for tissues and cells; namely, that their ongoing animation when separated from a dead body does not constitute an extension of human life in a kind of constricted body. If the cells in human cell lines do not possess a human rational soul, they cannot reasonably be called human beings.

If the cells in human cell lines are not complete human beings, are they still human parts? Certainly cells in the living human body are parts of the body. Cells separated from the living body and growing artificially in

⁵¹ Thomas Aquinas, *De Unitate Intellectus*, par. 40.

culture are still alive and still materially or accidentally human, otherwise they would not be sought after for research or therapeutics. They still possess the same DNA and differentiated structure of their tissue of origin. They are not defective bodies *as cells*. Yet they do not possess the capacity *essentially* and *per se* to grow and develop as human beings (cloning would represent a capacity *per accidens*); their body is not apt for rational ensoulment. Furthermore, they are no longer functioning as parts, both serving the body and directed by it. Accordingly, Aristotle encourages the natural scientist to be informed about the soul, “seeing at any rate that when the soul departs, what is left is no longer an animal, and that none of the parts remain what they were before, excepting in mere configuration, like the animals that in the fable are turned to stone.”⁵² Liver or skin cells living for years in a culture medium have become entities *per se*, not *in alio*. No longer living parts, they are living wholes. As they are no longer formally human parts, they cannot be animated by a human soul. As an integrated organism, each cell must have its *own* soul, as the soul is for the organism, not the part.⁵³ Accordingly, living human cells can exist in different states, displaying different formal organizations and thus different natures. Living beings with different natures have different kinds of souls, generically and/or specifically. Cells in the living human body are parts animated by the rational soul; they are true human parts.

Differentiated cells in the developed human being may be contrasted with cells in the very early human embryo. Totipotent stem cells are also living human cells. Like other cells in the human body, they are parts animated by the human rational soul and therefore true parts of an individual human being. However, unlike differentiated human cells, totipotent stem cells have the intrinsic capacity under certain circumstances to become new individuals of the human species. Twinning is essentially natural cloning and involves these early cells. A twin is animated by his own rational soul, or he would not be a distinct and unified individual. Accordingly, certain “cells separated from one life system are still toti- or pluri-potential, and thus have a natural exigency to grow and develop in another life system, thus animated by a new soul or life principle.”⁵⁴ It should be noted that this is not the same as the potential divisibility of material souls in plants and certain animals; rather, a *new* soul is present with twinning. Furthermore, as a new *rational* soul with a power independent of matter, it does not come into existence by means of the existence of the new composite individual; rather, the new composite individual exists through the new subsistent rational soul.

⁵² Aristotle, *De Partibus Animalium* (641^a19), in Vol. 1, Barnes, 997.

⁵³ Celestine N. Bittle, *The Whole Man*, 493.

⁵⁴ Augustine Regan, “The Human Conceptus,” 124.

Therefore, the existence of the new rational soul must be from a source other than the new living body. As life comes from life, and the effect must be commensurate with the cause, the source of the new rational soul must be from a living spiritual being, “ever solicitous for the work of His hands.”⁵⁵

The cells constituting human cell cultures and strains are also living cells with human cell configuration. Unlike other cells in the human body, they are no longer parts of the body. Unlike totipotent stem cells, they do not have the intrinsic capacity to grow and develop as new individual human beings animated by a new rational soul or life principle. They are living, individual, whole organisms not animated by a human soul and therefore not formally human. Accordingly, they must be new individuals of a new *species*.

What is true for living cells separated from the human body must be true for living tissues and organs so separated. In transplant medicine, a living liver or heart is separated from a presumptively dead human body (living liver donation is an exception). Unlike cell strains and lines, such organs have a very limited capacity to survive outside a living human body. Unlike cell strains and lines, they cannot reproduce. Until the organ is attached to the body of the recipient, becoming a part again animated by the soul of that person, it is a living individual not animated by a human soul and, apparently, a new kind of animate being. The same would seem to be the case for those parts of the human body which grow for awhile after death.

Vegetative Soul?

If the living cells constituting human cell cultures and strains are not formally human, but only accidentally so, or with respect to configuration, what about the cells constituting cell lines? Recall that cell lines share properties with cancer cells and that the price of immortalization may be malignant transformation. The genetic changes necessary for a human cell line *in vitro* make the cells to a greater or lesser extent unlike human cells *in vivo*. Accordingly, human cell lines may not even be human in configuration. The more genetic changes there are, the greater the material discontinuity with normal human cells. In Scholastic thinking, whether mediated directly or indirectly, material properties can be “so remodeled or redispersed that they are no longer apt to inhere in their previous substance or substances but call for a new ontological basis, and so induce a new substantial form which reindividualizes the prime matter and individualizes itself in the process.”⁵⁶ A type of substantial change necessary for human

⁵⁵ Ibid.

⁵⁶ Augustine Regan, “The Human Conceptus,” 115.

life is the digestion and assimilation of dead biological material from different species as food. A type of substantial change which could be destructive to human life is the tumorigenic potential of cells from cell lines inoculated into human beings. Although there is a certain biological continuity between a human being and a human cell line, it is not the continuity of individual human life, or of a human part, or even of the same biological material configuration.

As previously noted, the cells of cell strains and lines are no longer living parts but living wholes. The new life of cell lines is characterized by nutrition, growth, and reproduction, not sensation or locomotion. Generically, such organisms are vegetative; accordingly, such cells must have material vegetative souls. The biological continuity between a human being and cell lines covers an underlying substantial change and the induction of a new substantial form or soul individualizing prime matter, resulting not just in a new individual, but in a new biologic composite being. There has been a substantial change of a remarkable kind resulting in a new individual substance of a different species.

Virtual Life

Are there philosophical obstacles to biological substantial change from higher to lower being, from spiritual to material soul, as with cell strains? In the production of cell strains or lines, a living *part* becomes a whole. It is not problematic that a spiritual soul be suddenly replaced by a material soul, which does have a certain proximate affinity to the living human body. The reason has to do with the hierarchy of forms in which the lower forms are virtually contained in the higher, not higher forms in lower ones. The rational soul has the powers of vegetative and sentient souls.⁵⁷ According to Aquinas, “there is nothing absurd about the effect of a higher agent having the power that the effect of a lower agent has, even more so. Hence the intellective soul, although it is from an external agent, nonetheless has the powers had by the vegetative and sensitive souls which are produced by inferior agents.”⁵⁸

In the hierarchy of forms, the inferior form completely sacrifices or sublimates its substantiality for the sake of the higher form. Yet the inferior form retains a type of presence. According to Aristotle, constituents in compounds “neither *persist* actually, as body and white persist; nor are they *destroyed* (either one of them or both), for their potentiality is preserved.”⁵⁹ The lower forms are virtually present in the higher composite, but not

⁵⁷ Celestine N. Bittle, *The Whole Man*, 499-500.

⁵⁸ Thomas Aquinas, *De Unitate Intellectus*, par. 49.

⁵⁹ Aristotle, *De Generatione et Corruptione* (327^b 29-31), in Vol. 1, Barnes, 536.

actually so. As there can be no medium between substance and accident according to Aquinas, this virtual presence must be a kind of accidental presence in which “the proper qualities of the elements remain, though modified; and in them is the power of the elementary forms.”⁶⁰

Like elements in a mixture, cells have the ability to ‘come out’ of the body into their own substantiality in specific or finite ways. Unlike the virtual presence of elements in a mixture, cells in the human body are derived from one original cell, which replicates into other cells that also replicate while differentiating into specialized cells, accounting for both the growth of the body and secondary organization into tissues and organs. The notion of virtual presence may be used analogously to convey that individual cells in a human being are not formally present as a perfection or substance, just as the substantiality of individual atoms are subsumed in the molecule or compound, yet still have a potential to come out of the whole as wholes and to have a kind of preserved power or presence in the whole. Ancient and modern materialism tends to view atoms as the actual substances and configurations thereof as accidental.

Conclusion

Among the most novel and startling objects in the biological world discovered and developed by modern science is the phenomenon of human cell lines, cells which have acquired the ability to endure and proliferate indefinitely. It has been the contention of this philosophical inquiry into the ontological status of cell lines in the tradition of *philosophia perennis* that such cells are not formally human or an extension of human life, and so not animated by the human rational soul. Such cells appear to be the product of biological substantial change, the terminus of which are cells animated by a vegetative soul. A qualification to considering such cells as simply having undergone substantial change to new individuals of a new species is to consider at least human cell cultures and stains as having entered a new mode of being, from virtual individual biological life in the spiritually ensouled human body to actual individual life as separated cells. Such cells are occasions for wonder in the face of the world as given, such wonder being the start and sustenance of the philosophical endeavor.

References:

Adler, Mortimer. “Universal and Particular.” *The Great Ideas*. New York: Macmillan Publishing, 1952.

⁶⁰ Thomas Aquinas, *Summa Theologiae* Ia, q. 76, a. 4, ad. 4. See also Thomas Aquinas, *Summa contra Gentiles*, II, ch. 56, 4.

- Aquinas, Thomas. "De Trinitate." In *The Trinity and Unicity of the Intellect*. Trans. Sr. Rose Emmanuella Brennan. St. Louis: B. Herder, 1946.
- Aquinas, Thomas. *Summa Theologiae*. Trans. Fathers of the English Dominican Province. 1911. Reprint, Westminster, MD: Christian Classics, 1981.
- Aquinas, Thomas. *De Unitate Intellectus*. <http://dhspriority.org/thomas/DeUnitateIntellectus.htm> (accessed May 5, 2014).
- Aristotle. *The Complete Works of Aristotle*. Edited by J. Barnes. Princeton: Princeton University Press, 1984.
- Armitage, Mark. "The Riddle of God and the Solutions of Man. Chesterton's Metaphysics of Wonder." *The Chesterton Review*. 27.4 (November, 2001): 457-469.
- Bittle, Celestine N. *From Aether to Cosmos: Cosmology*. Milwaukee: Bruce Publishing, 1941.
- Bittle, Celestine N. *The Whole Man: Psychology*. Milwaukee: Bruce Publishing, 1945.
- Donceel, J. F. *Philosophical Psychology*. New York: Sheed & Ward, 1955.
- Freshney, R. Ian and Mary G. Freshney, eds. *Culture of Immortalized Cells*. New York: Wiley-Liss, 1996.
- Hall, Stephen S. *Merchants of Immortality*. Boston/New York: Houghton Mifflin, 2003.
- Hayflick, L. "History of Cell Substrates Used for Human Biologicals." *Symposium on Continuous Cell Lines as Substrates for Biologicals*. Develop. Biol. Standard. Vol. 70, 1989.
- Hayflick, L. "The Limited *In Vitro* Lifetime of Human Diploid Cell Strains." *Experimental Cell Research* 37 (March 1965): 614-636.
- Hayflick, L. and P. S. Morehead. "The Serial Cultivation of Human Diploid Cell Strains." *Experimental Cell Research* 25 (December 1961): 585-621.
- Pacholczyk, Tadeusz. "The Ten Great Myths in the Debate Over Stem Cell Research." http://www.crossroadsinitiative.com/library_article/964/Ten_Great_Myths_in_the_Debate_Over_Stem_Cell_Research.html (accessed June 21, 2012).
- Regan, Augustine. "The Human Conceptus and Personhood." *Studia Moralia* 30.1 (1992): 97-127.
- Weatherbe, Steve. "Fetal Stem Cells Treat More Diseases?" *National Catholic Register*. June 17-30, 2012.

DEVELOPMENT OF COMPLEX TECHNOLOGIES FOR PROCESSING OF RICE BRAN WITH OBTAINING OF THERAPEUTIC OIL AND MEDICINE – PHYTIN

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Abstract

In this article, showed effectiveness of obtaining therapeutic, edible oil and medicine-phytin and researched the viability of using waste generated during processing of rice - rice bran. Carried out research on the qualitative and physical - chemical characteristics of rice bran and defined quantitative content of phytin in raw materials and substances.

Keywords: Rice bran, oil, phytin, technology

Introduction

The problem of efficient processing of secondary raw materials for producing competitive products is relevant for all industrialized countries. Considering great potential of the fat-and-oil production and pharmaceutical enterprises in the Republic Kazakhstan, the recycling of secondary resources in the food industry is appropriate and effective. Nowadays achieved great success in high-performance and creating synthetic medicine. However, products derived from vegetable raw materials, occupy a significant place in medical practice and constitute about one-third of the total number of

medicines. The annual harvesting and processing of vegetable raw materials are tens of thousands of tons, at the same time, to better satisfaction of the needs of health medicines and expanding range of high-performance low-toxic medicine are necessary to search for new sources of natural bioactive compounds and development on the basis of technology of complex use of raw materials. A particularly important problem is the development of modern technologies for the production of biologically active substances from the available cultivated and promising in terms of introduction of medicinal and food plant materials. One of the most important tasks of the pharmaceutical and food industry is development new medicines and food products. Therapeutic, edible rice oil and medicine - phytin will satisfy all needs of the cosmetics and fat-and-oil production. In this paper are solved the problem of obtaining new food and pharmaceutical products and waste management by complex using waste of rice production - rice bran (Tashmenov R. S., Myrkhalykov Zh. U., 2012, Tashmenov R.S., 2008, Kamilov H. M., Tashmenov R.S., 2008, Tashmenov R. S., Sagdullaev S. S., 2010, Tashmenov R. S. et al 2011, Tashmenov R. S. et al 2012, Tashenov R. S. et al 2014).

Particularly important problem is the development of modern technologies for the production of biologically active substances from the available cultivated and promising in terms of introduction of medicinal and food plant materials.

One of the unique biologically active species raw materials for food products are waste of rice production - rice bran. Rice bran serve as a source of valuable raw materials for cosmetic production: wax, essential fatty acid, rice starch and proteins. They include Tocopherol (vitamin E), ferulic acid, lecithin and vitamins A, PP, E and C.

Rice bran oil contains three antioxidants: Tocopherol, tocothreenol and oryzanol, which act on free radicals, removes toxic substances from human body and fight with aging process. It contains a wide range of nutrients, including essential fatty acids, phosphatides, vitamins and minerals.

Rice bran as well as rice bran oil effectively reduces cholesterol and coagulability of the blood, prevents the formation of atherosclerotic plaques, and provides prevention of complications of atherosclerosis. Also rice bran oil has antiphlogistic action, neutralizes oxygen free radicals, and increases anti-tumor immunity. Rice bran oil is used in preparation for protection against sunburn, sun protection and as hair conditioners.

Natural rice bran oil is recognized worldwide as health oil. Kazakhstan has a large amount of acreage of rice. Such factors as good location, clean water, modern equipment and the latest technology in the

production of oil considering availability of powerful research laboratory, guarantee to produce high quality design rice bran oil and its derivatives.

The average content of phytin of rice bran about 4.0% (Sobolev A., 1992, Popov P.S., 1993).

One of the new, promising directions in the application of phytin is their use as medicine. Nowadays are famous more than 100 phosphorus-containing medicines.

At first time organic phosphorus compound were used as phosphorus-containing medicine, in particular in ophthalmology and obstetrics (Sobolev A., 1992). Recently in medicine has been recognized phosphorus-containing medicine, which have anticholinesterase activity and fundamentally different from previously used phosphorus-containing medicine, both in chemical structure and mechanism of action. Along with anti-glaucoma and other anticholinesterase means now used phosphorus-containing vitamins and their analogues, medicines for prevention and treatment of diseases of the cardiovascular system, antifungal, antibacterial, anthelmintic agent, hormonal agents, stimulant of metabolism and other medicines.

Among the natural phosphorus-containing compounds of particular importance are calcium-magnesium salt ionized hexaphosphoric acid (phytin) (Popov P.S., 1993).

Versatile and high biological activity of phytin due to the high content of phosphorus and transition metal ions. It is known that the main function of phosphorus content in the human body reaches 650 g, is associated with growth and maintaining the integrity of bone and teeth (Popov P.S., 1993). Another part of it is in the soft tissues and is involved in anabolic and catabolic reactions, which can be seen from the role of phosphate in the formation of high-energy compounds (ATP) and the phosphorylation of intermediate products of carbohydrate metabolism.

Calcium is one of the five the most common elements of the alive organism as (O, C, N, H). Besides the formation of bone calcium ions play a key role in many physiological and biochemical processes (for example, in the transmission of nerve excitation, maintaining the integrity of cell membranes, and so on).

The calcium intake of an adult organism reaches 1.0 to 1.1 grams/day (Popov P.S., 1993). The suggestion of a possible high biological activity of metal intermediates ionized hexaphosphoric acid was actually confirmed in later synthesized coordination compounds with cobalt and gland recommended for the treatment of hemolytic anemia (Sobolev A., 1992).

Current study has shown the principal possibility of complex and low-waste technology of production of edible oil and pharmaceutical

medicine (Kamilov H. M., Tashmenov R.S., 2008, Tashmenov R. S. et al 2014).

I.

Considering the significant volumes of production and processing of rice in Kazakhstan, of particular interest is secondary raw material processing grain rice, rice bran, which can be the source of a number of physiologically and biologically functional components, including precious vegetable oils. However, currently this resource in Kazakhstan is practically not used. The present work is devoted to the study of secondary use of rice bran in the food industry.

This work has been conducted for studying the chemical composition of rice bran resulting from the processing of rice grown in the southern regions of Kazakhstan. This conditioned to the possibility of making and producing a large number of new products. High content in rice bran vitamins played a major role in nutrition, medicine, and chemistry. The most valuable components of rice bran are high-quality protein and edible oil, which is dedicated to research.

We used as object of research - rice bran. That output takes 10-12 % by weight of raw rice. We studied qualitative and quantitative characteristics of rice bran as a source of valuable biologically active substances, including oil and phytin. Quality characteristics of rice bran are presented in table 1.

Table 1 - Average content of rice bran on the main constituent substances, %

№	Index	Rice bran				
		Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
1.	Oil content	14.15	14.5	17.2	16.1	15.8
2.	Starch	37.54	38.05	37.8	39.44	39.7
3.	Crude protein	16.35	16.5	17.09	17.20	16.65
4.	Phytin	4.42	4.21	3.95	3.98	4.12
5.	Ash content	8.97	8.99	9.2	9.01	9.14
6	Humidity	8.3	9.1	8.5	9.0	8.7

As can be seen from table 1, the main component of bran, and grains of rice are carbohydrates, which are mostly starch, the content of which varies to 37.54...39.7 %. Along with carbohydrates bran contain a fairly high amount of oil (14.15...15.2) and protein (16.35...17.20).

In this work used methods of analysis which is widely used in the fat-and-oil production (Tashmenov R. S. et al 2011). The oil content of rice bran was determined in the apparatus as Zaichenko and Naaband the content of crude protein by Kjeldahl method. The quantitative content of phytin in raw materials was determined by the gravimetric method.

We first developed an integrated technology of processing of rice bran with obtaining therapeutic, edible oils and medicine - phytin. Below is described mentioned before developed technology.

Description of technology for oil: grinding rice bran, hydrothermal treatment, drying, extraction (oil extraction and production, refinement, filling (Karpilenko G. et al, 2005, Nikogda V. O., 2011). The raw material is subjected to hydrothermal treatment with subsequent drying of the material. Then carrying out –extraction, moisturizing oil-containing raw material at a temperature of 50-55°C with an aqueous solution of vegetable oil concentration of 0.2-0.4% when the ratio of the crushed oil-containing raw material aqueous solution oil (1.0:0.3)-(1.0:0.5), and drying was performed until reaching a moisture content of 6-8%. For extraction of oil from rice bran was used extraction method of periodic action. As the solvent used for extraction gasoline. Extraction was carried out at the ratio of raw material and the extractant, respectively 1:5. The extract was separated from the cake by filtration. The meal is added back to the extraction gasoline in the ratio of raw material and extractant, respectively 1:3. Next, the extract was separated from the cake by filtration and collected in one container. While the oil content of the meal was less than 1 %. Fat-free cake in the process of extraction meal contains from 25 to 40% of solvent and water. The solvent in the meal is in a bound state, in the form of micelles. After the process of extracting, from the meal separated the rest of the extractant by means of evaporation. As a result of this processing is stored food and the nutritional value of the meal. Mixed oil passed through the oil filter, which is cleaned from various impurities. Then rice oil is separated from the solvent in a vacuum evaporation apparatus. The resulting solvent after evaporation can be re-used for the extraction process. And oil is directed to the refinement.

During research identified optimal parameters of hydrothermal processing of crude rice bran, pre-moistened up to 16-18 %, 45-50 min; the temperature of the heating bran at the end of the heat treatment process 105-107 °C; the content moisture in the cooked bran 6-7%.

Next process is receiving phytin from low-fat rice bran. The raw material is subjected to fermentation (hydrolysis of biopolymers) and extraction of phytin. For this extractor was filled calculated amount of 0.5% solution of the enzyme preparation amilorinozine p10x and rice bran. Next was acidified up to pH=4.5 and was stirred for at a temperature of 45-50°C. For separation of the extract suspension was passed through a centrifuge. Extract of phytin was separated from the insoluble residue and bleaching. Phytin besieged at pH=7 from the clarified extract. Precipitated from the solution of phytin was separated by filter. The precipitate was washed with water and squeezed for removing water. Unloaded the precipitate was dried in a dryer at 90°C and grinded. Further crushed phytin alloy preformed. For

this phytin was moistened starch paste and the wet mass was passed through a universal granulator. The wet granules are scattered evenly and dried at temperature of 80 °C to a residual moisture content of 7.5-8%. Next conducted a dry granulation and dusting. The dusting was carried out in the mixer, which along with pellets gave a mixture of starch and stearic acid. The resulting mass alloy preformed.

Qualitative and quantitative indicators of phytin were determined by the content ionizehexophosphoric acid (IHPA). We have developed a spectrophotometric method standardization substance for the quantitative content ionizehexophosphoric acid, which is the basis of the phytin molecule (Tashmenov R.S., 2008). The method is based on spectrophotometrically ($\lambda=510$ nm) excess from ionizehexophosphoric acid amounts of iron (III) forming a colored solution when interacting with sulfosalicylic acid.

The analysis was carried out as follows: 0.25 g (accurately weighed) of a substance of phytin was dissolved in a small amount of 0.1n HCl, in a volumetric flask 50.0 ml. After dilution of the sample, the volume of solution bring to the same HCl solution up to the mark, mixed. From the resulting solution of phytin took 2.50 ml aliquot parts, was placed in a glass with a capacity of 80-100 ml, added a bit redundant, but the exact volume of solution (4-5 ml) of iron with a titer of 0.56 mg/ml. We mixed and defended within 3-5 minutes. The precipitation of the iron complex was separated from not reacted amounts of iron (III) by filtration through a paper filter into a volumetric flask of 50.0 ml, which is pre-infused 3.0 ml of 10% aqueous sulfosalicylic acid solution. The filter cake was washed with distilled water 4-fold. Then the volume of wash water containing unreacted iron (III) brought purified water to the mark, mixed. The optical density of the resulting solution was measured on a spectrophotometer SF-26 in a cell with a layer thickness of 10 mm at $\lambda=510$ nm relative to purified water. From the calibration graph to find the number not reacted iron (III). Mass share IHPA in phytin calculated by the formula:

$$\text{IHPA} = \frac{(Fe(III)_{in} - Fe(III)_{res.}) \cdot 2.9547 \cdot V_s \cdot 190}{V_{al} \cdot g} \%,$$

where: $Fe(III)_{in}$ – initial quantity of iron (III), mg;

$Fe(III)_{res}$ – not reacted iron (III), mg;

2.9547 – index of conversion (molecule IHPA: 4 atoms Fe);

V_s – volume of prepared solution for analysis, ml;

V_{al} – volume of aliquot solution, ml;

g – shot of ionize phosphate Ca or ionize phosphate Mg.

Table 2. Content of the ioninsitgectophosphoric acid in the phytin substance

№	Substance	Ionizehexophosphoric acid, %
1	Phytin	77.41
2	Phytin	77.94
3	Phytin	77.80
4	Phytin	77.68
5	Phytin	76.97

Thus, the content ioninsitgectophosphoric acid in the substance of phytin contains not less than 77 %.

Received phytin in their qualitative and quantitative indicators fully complies with the requirements of normative documents.

From low-fat rice bran obtained medicine - phytin (calcium-magnesium salt ionizehexophosphoric acid) can be widely used in medical practice (Tashmenov R.S., 2008).

Thus, the above study shows the feasibility and effectiveness of using rice bran as a comprehensive source of therapeutic, edible oil and medicine-phytin, which has high nutritional value and therapeutic effect.

References:

- Kamilov H. M., Tashmenov R.S. Obtaining a mixed magnesium salt ionize phosphoric (phytin) from rice bran. Materials of scientific-practical conference "Topical issues of education, science and production in pharmacy". Tashkent, 2008.
- Karpilenko G., Kazakov E. Biochemistry of grain and grain products. 2005, 512 p.
- Nikogda V. O., Martovshuk V.I., Martovshuk V.E., Gulushanyan A. P. and others Method of production of vegetable oils from oil-containing raw materials /Patent RF №2430963. Published 10.10.2011.
- Popov P.S. Definition of phytin in the seeds. //Methods biochemical research in the breeding of oilseed crops. - Krasnodar, 1993. p. 87-88
- Sobolev A. A. Distribution, generation and utilization of phytin in higher plants// advances in biological chemistry, 1992., p.248-260.
- Tashmenov R. S., Myrkhalykov Zh. U., Kaldybaeva G. Copyright certificate № 27433, 2012 Way tof obtaining inosine phosphoric (phytin) from rice bran.
- Tashmenov R.S. Development of methods for quantitative determination of phytin. Materialy IV mezinarodni vedesko-prakticka conference "Evropskaveda XXI stoleti - 2008". Praha, 2008.
- Tashmenov R.S. Dynamics of extraction of salt inosine phosphoric from rice bran. Pharmaceutical Bulletin. Almaty, 2008. No. 3-4. p. 13-15.

Tashmenov R. S., Sagdullaev S. S. Application of amilorinozine p10x upon receipt of derivative ionize phosphoric from rice bran. Materials of scientific-practical conference "Integration of education, science and production in pharmacy". Tashkent, 2010.

Tashmenov R. S., Kaldybaeva G., Togatayev T.U. Development of technology insists that magnesium. Proceedings of ISIC "Auezov reading-10". Shymkent, 2011, S. 214-216.

Tashmenov R. S., Kaldybaeva Y., Togati T. C. Optimization of hydrolysis of biopolymers from rice bran. Proceedings of the Regional Scientific Practical Conference «Updated Kazakhstan in the modern world" achievements and prospects of development. Shymkent, 2012, p. 186-188.

Tashmenov R. S., Orymbetova G., Myrkhalykov Zh.U. Using of secondary by-products of rice to obtain rice oil. International scientific journal "Science and world" №4(8), 2014, volume 1, P. 112-115.

STRATEGIC ELEMENT IN HEALTH, OPERATIONAL AND FINANCIAL PERFORMANCE ASSESSMENT: EXAMPLE OF SELCUK UNIVERSITY MEDICAL FACULTY HOSPITAL

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Abstract

Today, transferring resources to the health sector, distribution of transferred resources between health care services, use of resources and quality of provided services are very important in countries. When it became clear that the growing importance of strategic management and development of institutions are connected to provide improvements not only in a sub-unit but also in all sub-unit and in an integrated manner, researches carried out in hospitals reached holistic and administrative size. For a holistic assessment managers focused on the measurement of hospital performance.

In this study, we made the operational and financial data analysis of the Hospital of Selcuk University Faculty of Medicine that was established in 2001 and started its activities in 2009. In this context, firstly some basic financial ratios were calculated by ratio analysis method based on the hospital's balance sheet. In the study second, medical statistics which described as operational data were analyzed. In addition some assessment and recommendations were made by comparing basic analysis results to overall Turkey. In this way, the hospital's current financial and operational performances have comparatively been evaluated.

Keywords: Performance Management in Health, Financial Performance, Ratio Analysis, Operational Performance

Introduction

With standing out of the strategic management and a service approach creating value, maximizing the value for the patients, i.e. the

studies in the direction of obtaining the best result with the lowest cost gain importance increasingly at the present days. These studies are adapted to the health sector in the form of setting the strategy and targets, revealing the existent potential, analyzing the stakeholders in the health sector, and calculating the concrete indicators such as effectiveness, profitability, and performance.

The subject matter of this study, using the actual data of Selcuk University Medical Faculty Hospital, is to measure the actual performance of the hospital via ratio analysis and make some basic evaluations. It is considered that, this study, via assessing together the financial and operational data of a health business, may assist to the health managers in their preparing the managerial strategies on the future.

Theoretical framework: performance in health institutes and measurement of performance

Health sector gained a competitive structure in the recent years. In this process, hospitals took serious actions, in order to reduce their costs, and to increase their performance compared to their competitors (Raju and Lonial, 2002). Due to the fact that hospitals are complex organizations using a number of resources in presenting the various medical treatment services, establishing performance management system in hospital is more difficult compared to the other industrial branches (Chen et al. 2012).

With performance management system, it is aimed that to help the hospitals for making plan and coordinating about what to do, to provide feedback and feed-forward in time for the work they do and if necessary to promote the corrective behaviors (Antony and Govindarajan, 2007; cited by Conrad and Uslu, 2012).

More strict budgets and common restructuring applications led the expectations of many stakeholders such as patients, health employees, and taxpayers to rise. In this process, performance criteria became more concrete and restrictive. Today, hospitals are obliged to achieve several targets. These targets can basically be put in order as providing high clinic performance, increasing the effectiveness in restricted budgets, employing the qualified health staff, and attracting attention of patients (Minvielle et al., 2008). The targets can also be determined as presenting a better service in education and research, beside full treatment, care, and rehabilitation, in related to the traditional hospital function. (Tengilimoğlu and Toygar, 2013).

Performance in health sector must be perceived as a multidimensional phenomenon. Financial perspective is only one of these

dimensions. Performance should also be evaluated in the context of effectiveness, efficiency, and equality criteria. While the concept of effectiveness expresses to rehabilitate the patients via the presentation of medical care services and the concept of efficiency expresses the use of input in the scale to produce service with the minimum cost, the concept of equality states to provide an equitable health service among humans, to eliminate the distinctions in reaching the health (Begley et al., 2004).

Potential areas, which can measure the performances in health services, can be defined as on the following (Metler and Rohner, 2009):

- Financial power of health services: income optimization, efficiency increase, waste and cost control, activity based costing
- Health services operations: Common management and measurement, cooperation opportunities, rapidity and flexibility development, business capital, and asset management.
- Developing the health employees: experience measurement, liability analysis, precautions of learning and growing, innovation, knowledge, analysis of cultural and intangible values
- Patient service and satisfaction: patient experience, participation, happiness, measurement of liability and relationship,
- Marketing of health services: branding, management of credibility and reliability, segmentation of patient –customer, patient profitability, and patient’s survival value.

When the different applications are examined, it is seen that the financial performance criteria among performance measurement areas, include the points such as hospitalization days of patient, business capital, and cost of patient care hours. Among the measures of patient satisfaction, the outputs of health care as well as care in department care in house, and support care services take place. In measuring the clinical applications and outputs, access to coronary angiography, repeated applications due to acute myocardial infarction, complications, rate of one-day surgery, and application after hysterectomy are handled. As performance criteria showing the systemic integrity, the points such as clinical information technologies, clinical data collection, intensity of using information, continuity and coordination of health care services, the other services out of hospital, and cooperation ability with the other service presenter and agencies are evaluated (Aydin et al., 2007).

In public institutes, it is more difficult to define and measure the performance, because expectations of stakeholders are heterogeneous. Despite all of these difficulties, in hospitals, especially measuring financial performance and providing the sufficient capacity is important,

because financial capacity is a precondition for the care of patient (Macinatia and Pessinaa, 2014).

With moving from this importance, in this study, calculated financial ratios which are related to Selcuk University Medical Faculty Hospital and operational data on hospital capacity were interpreted in integrated way.

Methodology

Study Method and Sample

The universe of study consists of all hospitals taking place in Turkey. At the same time, Selcuk University Medical Faculty Hospital is the sample area of study. The data of Selcuk University Medical Faculty Hospital were basically examined by means of the method of ratio analysis. Method of ratio analysis, in literature, is a frequently preferred method to measure the financial performance. In this scope, data were subjected to analysis by calculating some financial, non-financial, and operational ratios.

Selcuk University Medical Faculty Hospital is a hospital basically having the medical and administrative departments. In the hospital, health services are carried out with 10 scientific branches under Basic Medical Sciences, 19 scientific branches under Internal Medical Sciences, and 13 scientific branches under Surgical Medical Sciences. In addition, for carrying out the health services provided in a way of problem-free and high quality, in hospital, 17 administrative units have been continuing their activities. Education Unit, Statistics Unit, and Public Relations Unit being in active in administrative part of hospital, with their activities, emphasize that presenting a high quality service and enabling this service to last with the continuous improvements are extremely important for the managers.

The financial data of hospital are the ones obtained from accounting the records such as income-expenditure table. In this study, by using the data obtained from accounting records, 13 financial ratios were calculated such as Working Assets, Short Termed Foreign Resources, Current Rate, Acid Test Ratio, Cash Rate, Borrowing Rate, Financing Rate, Stock Turnover, Net Operating Capital (NOC) Turnover, Asset Turnover, Debt/Income Ratio, and Short Termed Foreign Resources Income Rate. On the other hand, operational data are the ones that will be qualified as input and output for hospitals. In this study, 9 medical statistical data such as Number of Bed In Hospital, Number of Outpatient, Number of Inpatient, Number of Surgery, Number of Discharged Patient, Number of Hospitalization Day, Average Hospitalization Time, Bed Occupancy Rate, and Bed Turnover were Analyzed.

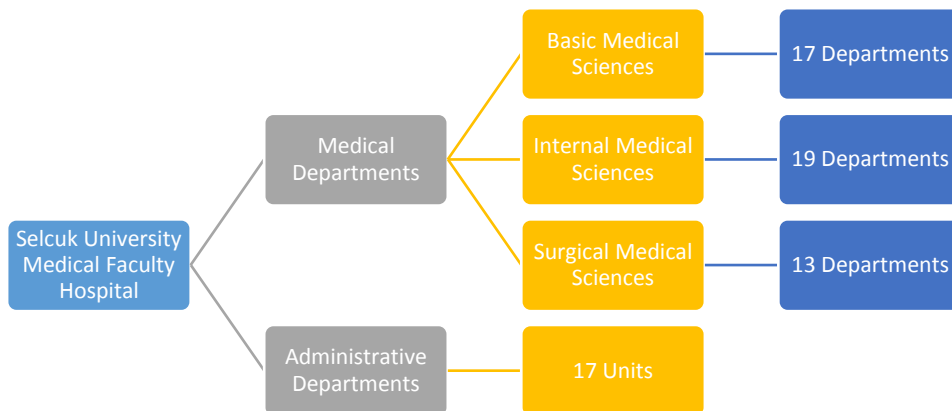


Figure 1: System Structure of Selcuk University Medical Faculty Hospital

Findings

Ratio Analysis and Its Results

According to the balance sheet and the income table of Selcuk University Medical Faculty Hospital, some financial ratios and calculated via ratio analysis, are shown in Table 1.

Table 1: Ratio Analysis of S.U. Medical Faculty Hospital

Financial Ratios	Formula	General Rare	S.U. Medical Faculty Hospital,	
			2012	2013
DV_t	$(DV_t - DV_{t-1}) / DV_{t-1}$		69%	-6,48%
$KVYK_t$	$\frac{(KVYK_t - KVYK_{t-1})}{KVYK_{t-1}}$		46%	45,10%
Current Rate	$DV / KVYK$	≥ 2	0,75	0,44
Acid Test Ratio	$(DV - \text{Stocks}) / KVYK$	≥ 1	0,51	0,31
Cash Rate (NİŞ)	$(HD + MK) / KVYK$	$\geq 0,20$	0,01	0,0002
Borrowing Rate (Leverage)	$\frac{(KVYK + UVYK)}{\text{Asset}}$	0,50-0,60	1,31	1,48
Financing Rate	Equity / Debts	≥ 1	0	-0,24
Stock Turnover	$\frac{\text{Cost of Sales}}{(\text{Stock}_{t-1} + \text{Stock}_t) / 2}$		It cannot be calculated due to lack of data	10,65
Receivable Turnover	$\frac{\text{Net Sales}}{\text{Receivables}}$		2,75	5,99
NOC Turnover rate	$\frac{\text{Net Sale}}{DV - KVYK}$		2,75	-3,31
Asset Turnover	Net Sale / Asset		3,63	4,12
Rate of Debt/Income			33%	46%
KVYK/Income Rate			39%	51%

According to Table 1, it is seen that the increase rate of working assets (cash + bank /+ receivable + stocks) of the year 2013 is decreased from the level of 69% to the level of -6,48% compared to the previous year. In spite of this, in the increase rate of short termed foreign resources, between the relevant years, from the level of 46% to the level of 45.10, a regression actualized. It can be expressed that this regression not arising from the commercial borrowing in working assets resulted from the decreasing remainder in the other accounts.

When the delaying receivables in the middle term are considered, the realization of the share of hospital beds in the assets above the generally acceptable values as 1.48, will be able to also make effect in the negative direction on the ability to pay of the hospital its debts.

The stock turnover's speed is becomes important in terms of that it indicates at what rapidity the business sold the service it produced. Also with NOC Turnover, in the sense of the ability of the most fundamental assets such as cash, stocks, and receivables to be able to return to the service sale (efficiency in some meaning), the consistent and valid evaluations based on the numbers can be made. The decrease of rate in 2013 shows that the hospital should be focused on the issues of net operating capital and incomes of service sale.

That receivable turnover rises from the level of 2.75, the rate of the previous rate, to the level of 5.99 in 2013 can be evaluated as positive from the point of collecting the receivables.

For being able to make the analysis of efficiency and profitability, it is also necessary to calculate a healthy asset value turnover. That asset value turnover turns out above 1, can be evaluated in such a way that the assets are efficiently used. The augmentation of asset rate from 3.63 in 2012 to the level of 4.12 in 2013 gives the positive signals related to the ability to reflect the actives (assets = cash + receivable + stock) to the incomes of service sale, the studies should be continued for this rate to be as high as possible.

As seen in Table 1, the rate of debt/income (33%) ranged below the average of the year 2012 (42%). This rate actualized in 2013 at the level of 46%. (Above the average of the year 2012 of our country). In addition, for 2012, in ordering of the size of debt/income of university hospitals, S.U. Medical Faculty Hospital takes place the 24th order among 44 medical faculty hospitals.

Analysis of Operational Data and Its Turkey-Wide Comparison

In Table 2, there are the operational data of S.U. Medical Faculty Hospital belonging to the years 2012 and 2013.

Table 2: Operational Data of S.U. Medical Faculty Hospital

Operational Data	Selcuk University Medical Faculty Hospital				2012				2013			
	2012	2013	2014 ⁽ⁱ⁾	2012-2013 Variation Rates (%)	Over all Turkey	Central Anatolia	University Hospitals	2011-2012 Turkey Variation Rate (%)	Over all Turkey	Central Anatolia	University Hospitals	2012-2013 Turkey Variation Rate (%)
Number of bed in the hospital	903	748	748	-17,17	200.072		35.150	2,86	202.031	2.521	36.056	0,98
Number of Outpatient	415.660	500.940	393.813	20,52								
Number of Inpatient	34.023	39.670	29.315	16,6	11.978.827	722.997	1.601.878	4,74	12.373.557	708.637	1.630.464	3,30
Number of Surgery	19.639	22.892	16.268	16,56	4.410.218		664.695	4,99	4.684.237		715.889	6,21
Number of Discharged Patient	33.901	39.390	28.773	16,19								
Number of Hospitalization Day	156.488	165.005	121.717	5,44	47.510.099	1.527.220	9.846.341	5,57	48.679.990	1.518.784	9.753.138	2,46
Average Hospitalization Time	6,71	6,03	5,98	-10,13	4	4,1	6,1	2,56	3,9	3,6	6	-2,50
Bed Occupancy Rate ⁽ⁱⁱ⁾	47,48	60,43	90,4	27,27	65,1	60,8	76,7	-0,76	66	63,3	74,1	1,38
Bed Turnover (Patient) ⁽ⁱⁱⁱ⁾	37,68	53,03	39,19	40,74	59,9	54,7	45,6	-1,48	61,2	66,2	45,2	2,17

(i) The data of the year 2014 is the data belonging its first 9 month (January -September)
(ii) The bed occupancy rate was calculated by the formula of Bed Occupancy Rate=(Number of hospitalized day*100) / (365*Number of Bed)
(iii) Bed turnover was calculated by the formula of Bed Turnover=Number of Inpatient / Number of Bed

According to Table 2,

- between the years 2012-2013, the increase rate of inpatient actualized at the level 20.52%;
- between the years 2012-2013, the increase rate of outpatient , at the level 16.60%;
- between the years 2012-2013, the increase rate of number of surgery, at the level of 16.56%;
- between the years 2012-2013, the increase rate of number of discharged patient at the level of 16.19%;

- between the years 2012-2013, the increase rate of number of hospitalization day, at the level of 5.44%;
- between the years 2012-2013, the increase rate of bed occupancy rate , at the level of 27.27%;
- between the years 2012-2013, the increase rate of bed turnovers, at the level of 40.74%;
- between the years 2012-2013, the decrease rate of bed number in hospital, at the level of 17.17%; and
- between the years 2012-2013, the decrease rate of average hospitalization time, at the level of 10.13 %.

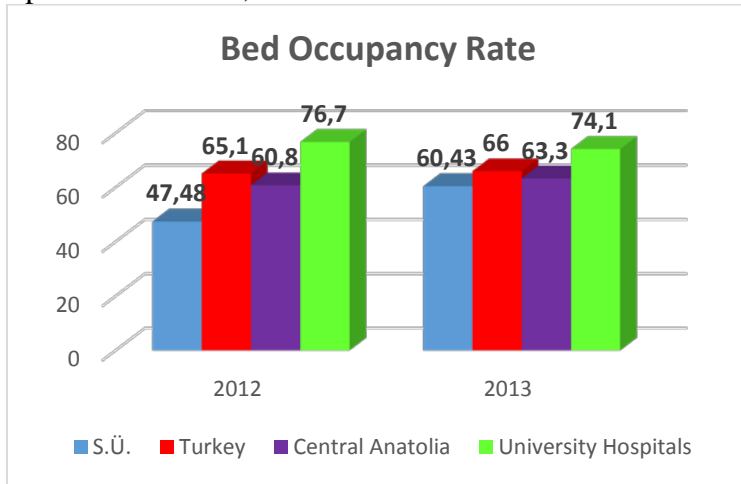


Figure 2: Bed Occupancy Rates of Hospital

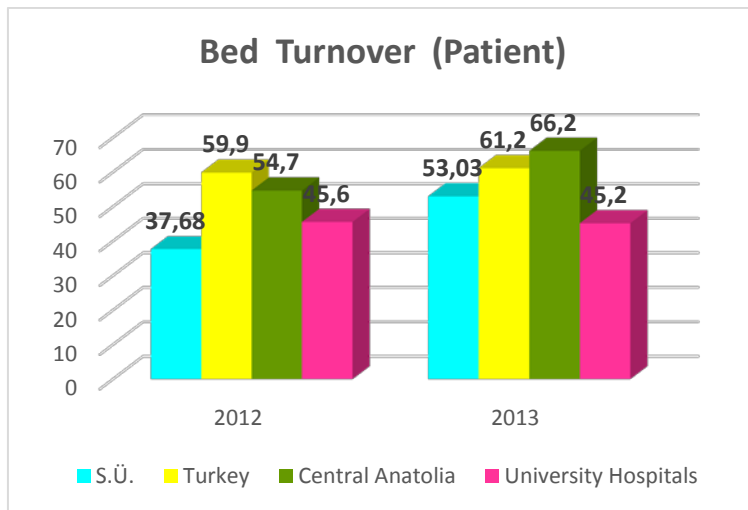


Figure 3: Bed Turnover of Hospital

Provided that the operational data of S.U. Medical Faculty Hospital in Table 2, Figure 2, and Figure 3 and their Turkey averages are comparatively examined, the following results are reached;

- In the recent years, in S.U. Medical Faculty Hospitals, the variation rate of number of inpatient and the variation rate of number of total surgery are higher than the average of universities in overall Turkey. This, in respect with these years, can be the indicator of that the prefer ability of the hospital about inpatient treatment increases . In addition, in Turkey-wide university hospitals, while the variation rate of inpatient decreases, in Selcuk University, this rate increases.
- Average hospitalization time of S.U. Medical Faculty Hospital is higher than Turkey-wide and average of university hospitals. But, in specific to hospital, in respect with the years, for inpatients, decrease of average hospitalization time can be an indicator of the shortness of treatment times, and improvement of treatment possibilities and treatment quality.
- Bed Occupancy Rates of S.U. Medical Faculty Hospital are lower than the average of Turkey University Hospitals and that of Central Anatolian Hospitals.
- Bed Turnover of S.U. Medical Faculty Hospital are lower than the average of Turkey , University Hospitals and Central Anatolian Hospitals

Table 3: Data of Academic Staff Number on S.U. Medical Faculty Hospital*

	2012	2013	2014**	2013 Vertical Analysis (%)	2014 Vertical Analysis (%)	2012-2013 Variation Rates (%)	2013-2014 Variation Rates (%)
Prof.	37	45	48	12,36	12,60	21,62	6,67
Assoc. Dr.	26	37	39	10,16	10,24	42,31	5,41
Asst. Prof. Dr.	58	54	55	14,84	14,44	-6,90	1,85
Specialist	7	17	22	4,67	5,77	142,86	29,41
Research Asst.	173	211	217	57,97	56,96	21,97	2,84
Total	301	364	381	100	100		

*For the year 2012, Health Ministry University Hospitals;: Number of specialist: 13,544; Number of General Practitioner : 215; Number of Asst. Physician: 13,238 and for 2013, University Hospitals: Number of Specialist: 14,911; Number of General Practitioner :222; Number of Asst. Physician: 13,179
**The data of Year 2014 are the data belonging to the first nine month of the year

Table 3 includes the data analysis, regarding the numbers of academic staff of S.U. Medical Faculty Hospital. There is a balanced rate according to the results of analysis, in the distribution of academic member of the hospital. In addition, as can be seen from the results of commercial analysis, it can be said that the hospital has a young and dynamic physician infrastructure. This infrastructure shows that the presence of health service providers researching, learning, and implementing the latest technologies in the world. The data of academic staff indicates that Selcuk University Medical School Hospital has a structure being innovative and open to change, giving importance to the research and development, and trying to increase the patient satisfaction as well as service quality for the health of society in the health sector.

Conclusion and discussion

When the results of ratio analysis are evaluated in integrated way, the following points should be considered:

- According to the data of the hospital belonging to the years of 2012-2013, it was observed that the bed occupancy rate increased in the rate of 27.27 %, in return to the decrease in the rate of 17.17% in the number of actual bed . This situation shows that the hospital should go toward increasing capacity. On the other hand, the decrease in the number of bed in the hospital can also be accepted as an indicator of that the hospital will go toward specialization in time.
- The medical statistical data of hospital, cash –to-cash cycle of the hospital should be evaluated, considering that the numbers of income, expenditures etc.
- The increase in the data of the hospital such as inpatient, outpatient etc. should be examined in detail in the context of income, expenditure, and budgetary items. In addition, it is necessary to make assessments about balancing the decrease rate in the actual number of bed and increase in the rate of bed occupancy.
- That the hospital, using the young and dynamic academic infrastructure of the hospital, specializes and shapes its medical activities according to the main features of this infrastructure is suggested for a sustainable successful.

When the findings are taken into consideration which are obtained as a result of the study and main administrative process in today's health organizations, the following suggestions, specific to S.U. Medical Faculty and for hospitals generally, can be developed.

- Especially efficiency and profitability analyses of hospitals, in the hospitals developed by World Health Organization that can make a performance assessment, for developing quality, it is necessary to develop the criteria like performance assessment tool of hospitals (PATH) and implement institute –specific applications. However, with this way, in health institutes, it can be provided the minimization of expenditures and maximization of utility by the efficiency and effectively.
- It is necessary to train the relevant staff about the financial analysis and assessment, for the efficiency of financial resources and human resources, to form a training and quality culture related to the employees, adopted by the top management and become widespread on the basis of employee.
- Instead of traditional performance assessment, a sustainable assessment system should be established. Therefore, the studies should be carried out beyond the financial indicators which are taken as a base in the study, with the indicators based on multiple criteria. It is necessary to make rich the aspect of financial indicators explaining the past with the fundamentals in managerial accounting i.e. with an approach that can offer solution suggestions toward the future.

References:

- Aydın, S. vd. (2007) Sağlıkta Performans Yönetimi, Performansa Dayalı Ek Ödeme Sistemi. Sağlıkta Dönüşüm Serisi 2 [Performance Management in Health, Performance Based Supplementary Payment System. Health Transformation Series 2] Sağlık Bakanlığı Yayınları, Ankara.
- Begley, C.E. vd. (2004). Evaluating The Healthcare System Effectiveness, Efficiency and Equity, Third Edition, Health Administration Press, Chicago.
- Chen, H.F., Hou, Y.H. ve Ray-E Chang, R.E. (2012) Application Of The Balanced Scorecard To An Academic Medical Center In Taiwan: The Effect Of Warning Systems On Improvement Of Hospital Performance, Journal of the Chinese Medical Association 75.
- Conrad, L. ve Uslu, P.G. (2012). UK Health Sector Performance Management: Conflict, Crisis And Unintended Consequences, Accounting Forum 36.
- Macinatia, M.S. ve Pessinaa, E.A. (2014). Management Accounting Use And Financial Performance In public Health-Care Organizations: Evidence From The Italian national Health Service. Health Policy (Article in Press).
- Mettler, T. ve Rohner, P. (2009). Performance Management in Health Care: The Past, The Present, and The Future. Wirts chafts informatic Proceedings.

Minvielle, E. vd. (2008) Hospital Performance: Competing Or Shared Values? Health Policy 87.

Raju, P.S., Lonial, S.C. (2002), The Impact Of Service Quality And Marketing On Financial Performance In The Hospital Industry: An Empirical Examination, Journal Of Retailing And Consumer Services.

Tengilimođlu, D. ve Toygar, Ő.A. (2013). Hastane Performansının Ölçümünde PATH Yöntemi [PATH Method in the Hospital Performance Measurement], Sosyal Güvenlik Dergisi, Cilt 3, Sayı 1.

“SENTIDO DE VIDA Y ESTRÉS LABORAL EN TRABAJADORES DE LA SALUD MENTAL QUE ASISTEN PACIENTES DROGODEPENDIENTES. ESTRATEGIAS DE AFRONTAMIENTO OBSERVADAS”

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Abstract

The concern that prompted us to conduct this research arose from my own experiences as a health professional attending to drug clients for over 20 years in the institution where this study was conducted. Also, we observed the attitudes of professionals and technicians involved in the service vocation. Despite how stressful, they result to work in a mental health institution and care for addictive cases which was really frustrating.

Keywords: Drug addiction, health care

Resumen

La inquietud que motivó la realización de esta investigación, surgió a partir de mis propias vivencias como profesional de la salud que atiende pacientes drogodependientes desde hace más de 20 años en la institución donde se realizó este estudio. Así como también el observar en los profesionales y técnicos involucrados una gran vocación de servicio, a pesar de lo estresante que significa trabajar en una institución de salud mental y de lo frustrante que muchas veces se evidencia en la atención de las problemáticas adictivas.

Palabras Clave: Sentido de Vida. Estrés. Afrontamiento. Engagement. Motivación

Introducción

Desde esta perspectiva, surgieron algunos interrogantes que orientaron el deseo y propósito de realizar el presente trabajo: ¿Cuáles son los intereses que motivan a los profesionales y técnicos para desarrollar allí

su vocación laboral? ¿Qué los mantiene entusiasmados para continuar eligiendo este lugar, a pesar de los constantes tropiezos con los que se encuentran en la cotidianeidad de normativas que limitan su creatividad? ¿Es el Sentido de vida que descubren en el ejercicio de su labor, el motor que sostiene su elección vocacional? ¿Es el sentido de vida lo que los protege al convivir con el estrés propio de este tipo de organizaciones y patologías tratadas?

Se considera que si bien el estrés es inherente al trabajo institucional y a las patologías complejas que se atienden, los profesionales y técnicos de este centro de salud, en su mayoría se observan motivados y comprometidos con la tarea.

De este modo se planteó analizar la relación entre el Sentido de vida y el Estrés laboral observando las Estrategias de afrontamiento más significativas utilizadas.

Se han realizado numerosas investigaciones sobre Estrés, Afrontamiento y Sentido de Vida, tanto en Argentina como en otros países del mundo. Aquí se consideran las vinculadas a las variables utilizadas en este estudio.

Una investigación que se desarrolló en la provincia de Buenos Aires, Argentina (Spinelli, Trotta, Guevel, Santoro, García Martínez, Negrín y Morales Castellón, 2013), se propuso estudiar cuál es la situación de salud de los trabajadores de los hospitales públicos de la provincia de Buenos Aires, recortando el objeto de estudio a hospitales públicos del Gran Buenos Aires, en el período entre el 2010-2012. Las categorías ocupacionales incluidas fueron las de profesionales, técnicos, administrativos y obreros. Se trabajó con un concepto amplio de salud, más allá de lo biológico y de la enfermedad. Por otro lado en España, se realizó un estudio exploratorio entre las enfermeras catalanas (Bao, Rebekka, Scott y Dolan, 2012); dicho estudio mostró correlación entre las relaciones de la incongruencia de valores de los individuos y el bienestar de las organizaciones, con las variables de percepción de la salud, el deseo de cambio -personal, de empleo, de ubicación- y la propensión a accidentes, como mediada por el agotamiento. Se realizó una encuesta en uno de los mayores hospitales universitarios de Cataluña España en 2009, utilizando un diseño transversal. Un total de 234 enfermeras participaron en el estudio.

En lo que se refiere al estrés, una investigación realizada en China (Zhang, Smith, Zheng y Wang, 2011), con 336 profesionales de la salud, ha detectado una serie de problemas somáticos, como cansancio ocular, jaquecas y desórdenes del sueño en un porcentaje considerable de ellos. Entre las variables relacionadas con estos problemas, se encuentra un entorno ocupacional adverso, y una situación familiar problemática. En el otro extremo, un entorno laboral amigable y un alto interés en la tarea que se

realiza, muestran una correlación negativa con estos síntomas psicosomáticos.

Mientras que en Alemania, un equipo condujo una investigación que abarcó a 1748 individuos, tratando de comparar la prevalencia del estrés ocupacional entre profesionales de la salud y trabajadores de otra rama (Schmid, Drexler, Fischmann, Uter y Kiesel, 2011). La muestra incluyó médicos, enfermeras y personal administrativo de un hospital y por otra parte, ejecutivos y empleados de una firma proveedora de servicios financieros. Los resultados muestran formas específicas de manifestación del estrés para los diferentes grupos ocupacionales.

Por otro lado en San José, Costa Rica, se ha empleado un Programa Holístico para la Vivencia del Estrés en Profesionales de Enfermería (Espinoza Guerrero, Valverde Hidalgo y Vindas Salazar, 2011). La población participante estuvo integrada por un grupo de enfermeras que trabajan en la sala de operaciones del Hospital Hotel La Católica. Este trabajo, da como resultado que los niveles de estrés que aparecen en los profesionales de enfermería son: la confianza en sí, la expresión de sentimientos, la autonomía y la resolución de problemas. Se concluye que las enfermeras mantienen elevados niveles de estrés.

En el Hospital Universitario del Sur de Brasil, se realizó un estudio cuantitativo que tuvo como objetivo identificar estresores, nivel de estrés de los enfermeros, estado general de salud y formas de afrontamiento implementadas por los enfermeros en el ámbito laboral (de Azevedo Guido, da Costa Linch, de Oliveira Pitthan y Umann, 2011). La población del estudio se compuso de 143 enfermeros, la mayoría de ellos con bajo nivel de estrés (55,25%) y con estado regular de salud (50,35%). En relación a las formas de afrontamiento, se identificó a la resolución de problemas como el factor de media mayor, llegando hacia la conclusión que deben incentivarse acciones educativas, minimizando el efecto del estrés en su estado de salud y en su trabajo.

Por otro lado, en la Universidad Católica de Costa Rica, se llevó a cabo un diagnóstico sobre las estrategias de afrontamiento utilizadas por un grupo de once técnicos en emergencias médicas (TEM) de la Cruz Roja Costarricense (Pérez Molina y Rodríguez Chinchilla, 2011). Desde el enfoque teórico de la crisis, los hallazgos del diagnóstico mostraron afectadas todas las áreas conductuales, afectivas, somáticas, interpersonales y cognoscitivas, así como el área espiritual. La investigación da cuenta de la necesidad de potenciar la salud de manera integral de la población, a través de las áreas de autocuidado, habilidades sociales, expresión de sentimientos y manejo del estrés.

Por su parte en Brasil, se realizó un estudio a profesionales de la salud mental sobre estrés y estresores ocupacionales (Santos y Cardoso,

2010). En el mismo, se evaluó la manifestación de estrés, la autopercepción de estrés y los factores estresantes del trabajo en profesionales de servicios sustitutivos de salud mental. Participaron 25 trabajadores de la salud mental en consulta externa y hospitalización, de una ciudad del interior del Estado de San Pablo Brasil, a los cuales se les aplicó el Inventario de Síntomas de Estrés para Adultos de Lipp y el Guión Complementario. Se verificaron 36% de los profesionales con manifestación de estrés y 44% percibiéndose bajo estrés. Se observó que los profesionales crean estrategias de cuidado para reducir las situaciones estresantes. Se concluyó en que: los profesionales vivencian estresores asociados a los cambios relativos al paradigma psicosocial de atención.

El Inventario de Estrategias de Afrontamiento ha sido utilizado también en el trabajo realizado en Argentina, por Ciano y Gavilán (2010), el cual articula el Modelo de Envejecimiento Activo y el Modelo Teórico Operativo en Orientación. La muestra estuvo conformada por sesenta personas de entre 64 y 74 años de edad, residentes en la Ciudad de La Plata. Las primeras conclusiones dan cuenta de la importancia que atribuyen los adultos mayores a la elaboración de proyectos en esta etapa del ciclo vital, así como la identificación de factores económicos, condiciones de salud, demanda de cuidados de otros familiares y apoyo social entre otros. Los resultados mostraron que: las situaciones problemáticas presentadas por los adultos mayores son: conflictos familiares, mudanzas, rupturas de lazos, problemas de salud y escasos recursos económicos.

Otro estudio realizado con el Inventario de Estrategias de Afrontamiento fue el realizado en Extremadura España por Felipe Castaño y León del Barco (2010), el cual intentó describir las relaciones entre el estilo de conducta interpersonal auto-informado y las estrategias de afrontamiento, en una muestra de 162 estudiantes universitarios -125 mujeres y 37 varones- ante situaciones de estrés general y estrés interpersonal. Para ello, se emplearon las Escalas de Adjetivos Interpersonales y el Inventario de Estrategias de Afrontamiento. Se encontraron diferencias significativas en cuanto a las estrategias de afrontamiento utilizadas por los participantes en ambas situaciones y correlaciones significativas entre los estilos interpersonales y las estrategias de afrontamiento.

Mientras tanto, en España se realizó una investigación con el fin de identificar factores psicosociales relacionados con el estado de salud mental en profesionales de Organizaciones de Servicio Humano (OSH). Para ello, se evaluaron profesionales Socio-sanitarios y de la Educación de diferentes centros pertenecientes a la Administración Pública de Andalucía (Vázquez Díaz, Pérez Cano, Arroyo Yanes y Suárez Delgado, 2010). Participaron 117 profesionales que trabajan en distintas Organizaciones de Servicio. El trabajo concluyó en que las variables psicosociales motivacionales, representan

factores a tener en cuenta en la definición del estado de Salud en profesionales de OSH.

Por su parte, Carrasco González, de la Corte y León Rubio (2010) plantearon que la gran mayoría de las investigaciones acerca del estrés y el desgaste profesional se han centrado en estudiar los factores que afectan a la salud y al bienestar laboral, y lo han hecho desde una perspectiva negativa, que implica identificar enfermedades, síntomas, factores de riesgo, datos epidemiológicos y fuentes de malestar. Los autores destacaron sin embargo, la existencia de investigaciones recientes que emplean un enfoque más positivo, intentando identificar factores protectores del bienestar profesional y personal del trabajador y explicar por qué hay personas y organizaciones que gozan de una mayor energía positiva en relación con el trabajo. Esta línea de investigación nos parece interesante, y está detrás del objetivo de analizar la relación que existe entre el proceso de descubrimiento del sentido de la vida y la presencia de estrés. Los autores mencionados plantean la utilidad del concepto de engagement, tomado de la Psicología Positiva, que refiere a altos niveles de energía y una fuerte identificación con el trabajo, como una herramienta fundamental para la comprensión de estos fenómenos y la prevención del estrés.

La Escala Existencial fue el instrumento elegido para el presente trabajo, así como también en el realizado en la Universidad del Aconcagua Mendoza por Nesci (2010), el cual analiza la importancia del desarrollo de las competencias personales y existenciales de los adolescentes en la escuela. Se esbozaron conclusiones en los adolescentes de entre 17 a 18 años de edad, que cursan el tercer año del polimodal en una Institución Educativa Privada de la Ciudad de Mendoza, durante el mes de noviembre de 2009. Entre el 40% y el 50% presentan una baja puntuación en el autodistanciamiento personal-existencial para la construcción del proyecto de vida. El 42,9% mostró una baja puntuación en el desarrollo del autodistanciamiento personal – existencial, esto indicaría una desorganización del espacio libre interior. El 52,4% no atribuye validez objetiva a los valores. En el 90,5% aparecen sus deseos como centro de interés en la vida. Con respecto al Valor Existencial, integrado por la libertad y la responsabilidad, en general tienen un buen desarrollo de esta capacidad.

Mientras tanto, en Sevilla España, (Morano-Báez, Albar-Marín, García-Ramírez, Prieto-Guerrero y García-Nieto, 2009) se realizó un trabajo de investigación que indagó el afrontamiento del estrés en profesionales de enfermería hospitalaria. Los participantes fueron profesionales de enfermería de 4 unidades de medicina interna del Hospital Universitario Virgen Macarena de Sevilla. Se utilizó el cuestionario ISTAS, entrevistas y grupos de discusión. Las situaciones problemáticas identificadas con el cuestionario, se relacionan con las exigencias psicológicas, el conflicto de roles y la

estima. La principal causa del estrés en los profesionales es la falta de personal, según la opinión de los supervisores.

Mientras que, en la Universidad Simón Bolívar, Venezuela, se ha investigado acerca de las relaciones entre el estrés laboral, la sensibilidad egocéntrica negativa y la salud en profesionales venezolanos (Goncalves, Feldman y Guarino, 2009). Para este estudio, se midieron: el estrés laboral percibido, según el Modelo demanda-control-apoyo social, la sensibilidad egocéntrica negativa y el estatus salud física y psicológica autopercebida, en 441 profesionales venezolanos de diferentes disciplinas y de ambos sexos. Los resultados mostraron que el estrés laboral y la sensibilidad egocéntrica negativa impactan sobre la salud autopercebida. Los resultados obtenidos confirman la asociación entre el estrés laboral y la salud, con base al modelo de demanda-control-apoyo social de Karasek y Theorell (1990).

Por otra parte se realizó una investigación en Perú, para conocer el grado de agotamiento laboral en los profesionales de la salud que se desempeñan en los centros de salud de Lima Metropolitana (Loli P., Arias Galicia, Alarcón y Loli P., 2008). Se evaluó una muestra de 89 sujetos que cursaban estudios de postgrado en diversos centros superiores de estudio, encontrando un nivel de agotamiento laboral normal con tendencia a ser más bajo. En un análisis más minucioso, se detectaron correlaciones entre el estrés y variables de la organización y condiciones de trabajo. Se encontró una asociación negativa entre estrés y variables como familia, satisfacción con el horario, con la vida y suficiencia de materiales.

En Brasil se investigó de forma integrada, posibles indicadores de alteraciones cognitivas, depresión, ansiedad y agentes estresores ocupacionales en auxiliares y técnicos de enfermería y de enfermeros de la Santa Casa de Misericordia de Asís-SP, por medio de instrumentos de rastreo psicológico y cognitivo (Paschoalini, Martins Oliveira, Frigério, Ribeiro Pereira Dias y dos Santos, 2008). Participaron en el estudio 66 profesionales de enfermería, evaluados por instrumentos de rastreo psicológico y cognitivo. Para medir el estrés, se utilizó el Índice de Estrés de Enfermería-NSI, el cual investiga los agentes estresores de la profesión de enfermería. Los resultados indicaron que la experiencia de estrés no fue homogénea en el equipo de enfermería; los puntajes altos en el rastreo de depresión fueron asociados a puntajes cognitivos bajos.

En cuanto a la relación del estrés con las estrategias de afrontamiento, existe una investigación realizada en Málaga con profesionales de enfermería de salud mental (Perea-Barena y Sánchez Gil, 2008). El estudio incluyó 44 enfermeras de salud mental de tres servicios del Hospital Virgen de la Victoria de Málaga y detectó que la mayoría de las enfermeras no usan estrategias de afrontamiento adaptativas. No obstante, se encontró una correlación positiva entre el uso de estrategias adaptativas, principalmente

las orientadas a la resolución de problemas, y la satisfacción laboral. Para medir las estrategias de afrontamiento se usó el Inventario de Estrategias de Afrontamiento de Tobyn, Holroyd, Reynolds y Kigal (1989) adaptado por Cano, Rodríguez y García (2007), el cual se utilizó también para el presente estudio.

Por otra parte en Venezuela, se llevó a cabo un trabajo de investigación sobre afrontamiento y sensibilidad emocional como moderadores de la relación estrés-salud en médicos (Bethelmy y Guarino, 2008). La muestra estuvo conformada por 130 médicos, que trabajan en unidades de hospitales públicos de la ciudad de Caracas, a quienes se evaluó su nivel de estrés laboral, sensibilidad emocional, estilos de afrontamiento y salud percibida. Las regresiones jerárquicas indicaron que los estilos de afrontamiento racional y por desapego emocional, actúan como variables protectoras de síntomas físicos, mientras que el afrontamiento por evitación constituye un factor de riesgo que acentúa efectos negativos de estrés.

Por otra parte en Argentina en el año 2008, se realizó un estudio sobre la relación entre estrategias de afrontamiento y estrés laboral en hombres y mujeres de 18 a 41 años (Garcete, 2008). Dentro de estrés laboral, se han tomado en cuenta sólo aquellos que han tenido algún problema laboral. Esta investigación se realizó con una muestra total de 100 personas de ambos sexos. Se utilizó el Inventario de Respuestas de Afrontamiento, cuyos autores son Moos y Moos (1993). Al evaluar la distribución de respuestas de afrontamiento, se evidencia mayor uso de respuestas de afrontamiento por aproximación, es decir, que se focalizan en el problema, mientras que una minoría elige respuestas por evitación.

Rodríguez Fernández (2008) destaca que existe una relación detectada en varias investigaciones, entre el sentido de la vida y una mejor salud mental. En la misma línea, existen investigaciones que señalan la existencia de una relación significativa entre el sentido de la vida y el estrés. (Bauer-Wu y Farran, 2005). Además el autor sostiene que en otras investigaciones, se encontró una relación significativa entre el hecho de hallar un sentido a la vida y el impacto resultante de enfrentar situaciones estresantes. Por este motivo, se consideró al proceso de búsqueda de sentido de la vida, como un factor protector o amortiguador entre el estrés y sus consecuencias negativas (White, 2004).

Objetivos

Objetivo general

Examinar la relación entre Sentido de Vida y Estrés Laboral en los profesionales y técnicos de la salud que trabajan en un centro especializado en drogodependencia, observando las Estrategias de afrontamiento más significativas utilizadas.

Objetivos específicos

Objetivo 1: Examinar los niveles de Estrés que presentan los profesionales y técnicos que trabajan en un centro de drogodependencia. Objetivo 2: Evaluar las capacidades personales y existenciales relacionadas con el Sentido de Vida. Objetivo 3: Analizar la relación entre la presencia de síntomas de Estrés y las capacidades personales y existenciales relacionadas con el Sentido de la Vida. Objetivo 4: Observar e identificar las Estrategias de afrontamiento más significativas utilizadas según los resultados. Objetivo 5: Examinar la relación entre la presencia de síntomas de Estrés y las Estrategias de afrontamiento más significativas utilizadas según los resultados.

Material

Participantes: Estudio cuantitativo con 110 profesionales y técnicos (P y T) de un centro de salud especializado en drogodependencia -de planta y contratados-

Estudio cualitativo con 22 P y T que fueron seleccionados en forma aleatoria del total de la población estudiada. La muestra de este estudio está compuesta por un 64.5% de mujeres y un 35.5% de hombres, siendo la edad aproximada de la población estudiada una media de 45,43 años.

Métodos

Instrumentos de evaluación: Se ha utilizado una batería de instrumentos autoadministrables, que incluyen tres técnicas de evaluación sobre las 3 variables utilizadas: Sentido de Vida, Estrés y Estrategias de Afrontamiento.

Para el análisis cualitativo se han tomado entrevistas semiestructuradas con 10 preguntas disparadoras, a 22 P y T elegidos en forma aleatoria del total de la población. Los ejes propuestos fueron: el grado de Estrés, el Sentido de Vida y las Estrategias de Afrontamiento.

Procesamiento de datos: a) La evidencia estadística fue analizada mediante el software SPSS. b) Se produjeron tablas de contingencia con dos recursos: diferencia de porcentajes y pruebas de chi cuadrado, con una significación inferior al 0.10. c) Se han utilizado como indicadores de control: la cantidad de síntomas y la autopercepción del estrés. d) Las variables presentadas tienen una asociación estadística significativa en todos los casos.

Instrumentos de recolección de datos:

- Escala Existencial (EE). Längle, Orgler y Kundi: Este instrumento evalúa las competencias personales y existenciales de la persona, en lo que respecta al trato consigo mismo y con el mundo. Se trata de un cuestionario auto-administrable de 46 ítems agrupados en dos escalas independientes: la

escala P que evalúa la dimensión personal: autodistanciamiento y autotranscendencia y la escala E que evalúa la dimensión existencial: libertad y responsabilidad. Cada una de las sub-escalas arroja un puntaje, a partir de los cuales se obtienen los puntajes por escala y el puntaje total, que evaluaría el estado del sujeto en el proceso de descubrimiento y desarrollo del Sentido de Vida.

- CASAS (Cuestionario de Auto evaluación de Síntomas Actuales del Estrés), Dr. Roberto Kertész: Se trata de un cuestionario auto-administrable que evalúa la presencia de síntomas de estrés en los distintos aspectos contemplados por el enfoque multimodal (biológico, afectivo, de sensaciones, de imágenes, cognitivo, conductual y social). Del cuestionario total, fueron seleccionados 79 ítems, de los cuales 70 consisten en afirmaciones acerca de los distintos aspectos mencionados. Los 9 ítems restantes se refieren a variables sociodemográficas, de tratamiento psicológico y de autopercepción del estrés.

- Inventario de Estrategias de Afrontamiento adaptado al español (Cano García, Rodríguez Franco y García Martínez), en la Universidad de Sevilla. Consta de 41 ítems agrupados en 8 factores, que aluden a 8 estrategias de afrontamiento.

Resultados

En cuanto a la estrategia resolución de problemas, es dable remarcar que se considera adaptativa, puesto que quien la utiliza, intenta buscar una solución al conflicto que lo aqueja, con el fin de evitar el malestar que pudiera surgir frente a la situación estresante. Esta estrategia es considerada por Lazarus y Folkman (1986) tanto cognitiva como conductual ya que el sujeto elabora una posible solución, para luego ejercer una acción encaminada a disminuir el estrés.

Tabla 1 Resolución de Problemas por Cantidad de síntomas Tabla de contingencia

			Cantidad de síntomas			Total
			Bajo	Medio	Alto	Bajo
Resolución de Problemas	Bajo	Recuento	6	4	9	19
		% de Cantidad de síntomas	15,0%	10,0%	30,0%	17,3%
	Medio	Recuento	14	20	13	47
		% de Cantidad de síntomas	35,0%	50,0%	43,3%	42,7%
	Alto	Recuento	20	16	8	44
		% de Cantidad de síntomas	50,0%	40,0%	26,7%	40,0%

Total	Recuento	40	40	30	110
	% de Cantidad de síntomas	100,0%	100,0%	100,0%	100,0%

En la tabla anterior, los datos más significativos muestran que: a menor utilización de la estrategia resolución de problemas, mayor cantidad de síntomas y viceversa.

Con respecto a la estrategia retirada social, los autores mencionados anteriormente la describen como desadaptativa, dado que el sujeto que la utiliza busca aliviar el malestar que le provoca la situación estresante, alejándose del entorno social-laboral.

Tabla 2. Retirada Social por Cantidad de síntomas

			Cantidad de síntomas			Total
			Bajo	Medio	Alto	Bajo
Retirada Social	Bajo	Recuento	3	9	4	16
		% de Cantidad de síntomas	7,5%	22,5%	13,3%	14,5%
	Medio	Recuento	32	20	14	66
		% de Cantidad de síntomas	80,0%	50,0%	46,7%	60,0%
	Alto	Recuento	5	11	12	28
		% de Cantidad de síntomas	12,5%	27,5%	40,0%	25,5%
Total		Recuento	40	40	30	110
		% de Cantidad de síntomas	100,0%	100,0%	100,0%	100,0%

En tabla anterior, se observa que: a mayor utilización de la estrategia retirada social, mayor cantidad de síntomas.

Autodistanciamiento: se considera así a la capacidad de organizar el espacio libre interior y a la captación del mundo.

Tabla 3. Cantidad de síntomas por Autodistanciamiento Tabla de contingencia

		Autodistanciamiento (Tri)			Total	
		Bajo	Medio	Alto	Bajo	
Cantidad de síntomas	Bajo	Recuento	7	13	19	39
		% de Autodistanciamiento (Tri)	17,9%	31,7%	67,9%	36,1%
	Medio	Recuento	15	17	7	39
		% de Autodistanciamiento (Tri)	38,5%	41,5%	25,0%	36,1%
% de Autodistanciamiento (Tri)	Alto	Recuento	17	11	2	30
		43,6%	26,8%	7,1%	27,8%	
Total		Recuento	39	41	28	108
		% de Autodistanciamiento (Tri)	100,0%	100,0%	100,0%	100,0%

En la tabla anterior, los datos más significativos muestran que: a menor cantidad de síntomas, mayor autodistanciamiento y viceversa.

Autotrascendencia: se considera así a la capacidad de percibir valores con el compromiso de sentir y compartir.

Tabla 4. Cantidad de síntomas por Autotrascendencia Tabla de contingencia

		Autotrascendencia (Tri)			Total	
		Bajo	Medio	Alto	Bajo	
Cantidad de síntomas	Bajo	Recuento	4	16	20	40
		% de Autotrascendencia (Tri)	14,3%	36,4%	54,1%	36,7%
	Medio	Recuento	10	17	12	39
		% de Autotrascendencia	35,7%	38,6%	32,4%	35,8%

		(Tri)				
% de Autotrascendencia (Tri)	Alto	Recuento	14	11	5	30
		50,0%	25,0%	13,5%	27,5%	
Total		Recuento	28	44	37	109
		% de Autotrascendencia (Tri)	100,0%	100,0%	100,0%	100,0%

En la tabla anterior, los datos más significativos muestran que: a menor cantidad de síntomas, mayor autotrascendencia y viceversa.

Libertad: se considera así a la capacidad de decidir por sí mismo y accionar al respecto.

Tabla 5. Cantidad de síntomas por Libertad Tabla de contingencia

		Libertad (Tri)			Total	
		Bajo	Medio	Alto	Bajo	
Cantidad de síntomas	Bajo	Recuento	5	11	23	39
		% de Libertad (Tri)	13,2%	29,7%	67,6%	35,8%
	Medio	Recuento	18	15	7	40
		% de Libertad (Tri)	47,4%	40,5%	20,6%	36,7%
	Alto	Recuento	15	11	4	30
		% de Libertad (Tri)	39,5%	29,7%	11,8%	27,5%
Total		Recuento	38	37	34	109
		% de Libertad (Tri)	100,0%	100,0%	100,0%	100,0%

En la tabla anterior los datos más significativos muestran que: a menor cantidad de síntomas, mayor capacidad de libertad y viceversa.

Responsabilidad: se considera así al involucramiento ante decisiones y consecuencias derivadas de los actos.

Tabla 6. Cantidad de síntomas por Responsabilidad Tabla de contingencia

			Responsabilidad (Tri)			Total
			Bajo	Medio	Alto	Bajo
Cantidad de síntomas	Bajo	Recuento	3	11	26	40
		% de Responsabilidad (Tri)	7,7%	31,4%	72,2%	36,4%
	Medio	Recuento	15	16	9	40
		% de Responsabilidad (Tri)	38,5%	45,7%	25,0%	36,4%
	Alto	Recuento	21	8	1	30
		% de Responsabilidad (Tri)	53,8%	22,9%	2,8%	27,3%
Total	Recuento	39	35	36	110	
	% de Responsabilidad (Tri)	100,0%	100,0%	100,0%	100,0%	

En la tabla anterior se observa que: a menor cantidad de síntomas, mayor responsabilidad y viceversa.

Según muestran los indicadores de control, aquellos que se autoperciben menos estresados son los que presentan menor cantidad de síntomas y viceversa.

Las mujeres manifiestan mayor cantidad de síntomas y mayor autopercepción del estrés que los varones. Los que trabajan más horas manifiestan mayor cantidad de síntomas y mayor autopercepción del estrés. Los que presentan mayores capacidades personales tienen entre 35 a 50 años. Aquellos que manifiestan menor autodistanciamiento tienen más de 50 años. Los contratados manifiestan menor autotrascendencia. Los que tienen otros trabajos independientes manifiestan mayor autotrascendencia.

Datos complementarios: Si bien el Estrés es inherente al trabajo institucional y a las patologías complejas que se atienden, el descubrimiento y desarrollo del Sentido de Vida posibilita sobrellevarlo más saludablemente y prevenir los síntomas negativos asociados al Estrés.

Los de más de 50 años, presentan menor autodistanciamiento, dada su mayor experiencia clínica y menor autotrascendencia por el agotamiento

que proviene de los años trabajados. Los que ejercen con mayor libertad, se observan más motivados, más estimulados y menos estresados. Los que ejercen con mayor responsabilidad, evidencian menos Estrés al evitar preocupaciones que surgen del trabajo no resuelto. Los que utilizan la estrategia resolución de problemas evidencian mayor bienestar al buscar modificar las situaciones estresantes. Los que utilizan la retirada social experimentan malestar al llevarse los problemas consigo y evitar socializarlo.

Conclusion

En relación al objetivo 1 se corrobora que: Los profesionales y técnicos (P y T) se encuentran medianamente estresados. En relación al objetivo 2 se corrobora que: Los P y T presentan en gran parte capacidades personales y existenciales que amortiguan los factores estresores. En relación al objetivo 3 se corrobora que: Los P y T que evidencian menor cantidad de síntomas y menor autopercepción del estrés, manifiestan mayores capacidades personales y existenciales. En relación al objetivo 4 se corrobora que: Los P y T utilizan con mayor frecuencia la estrategia de afrontamiento resolución de problemas y medianamente la retirada social, de acuerdo a las circunstancias. En relación al objetivo 5 se corrobora que: Los P y T que presentan menor cantidad de síntomas y menor autopercepción del Estrés utilizan la resolución de problemas. Los que presentan mayor cantidad de síntomas y mayor autopercepción del estrés utilizan la retirada social.

Sugerencias: Quienes logren trabajar en pos de un mayor desarrollo del Sentido de Vida podrán contar con más recursos, habilidades, capacidades personales y existenciales para enfrentar las situaciones estresantes propias del trabajo institucional y de la atención de patologías complejas.

Es posible que si los profesionales y técnicos que se desempeñan en las instituciones, ejercieran su tarea con cierto grado de iniciativa y creatividad laboral sin que por ello se alejen de los principios y fines establecidos, resulten agentes de salud más eficientes para lograr los objetivos institucionales.

References:

Cano García, F. J.; Rodríguez Franco, L. y García Martínez, J. (2007). *Adaptación española del Inventario de Estrategias de Afrontamiento*, 35(1), 29-39.

Carrasco González, A. M., de la Corte, C. y León Rubio, J. M. (2010) Engagement: un recurso para optimizar la salud psicosocial en las organizaciones y prevenir el burnout y estrés laboral. *Revista digital de prevención*, 1.

- Corral-Mulato, S.; Antoniassi Baldissera, V.; dos Santos, J.; da Silva Philbert, L. y Villela Bueno, S. (2011) Estresse na vida do acadêmico em enfermagem. (Des) conhecimento e prevenção. *Invest. Educ. Enferm.*, 29 (1), 109-117.
- Cremades-Puerto, J. (2011) Factores laborales estresantes en profesionales de enfermería que trabajan en unidades hospitalarias con pacientes ingresados por problemas médico-quirúrgicos: una revisión bibliográfica. *Recién* (2), 1-17.
- Durán, M. M. (2010) Bienestar psicológico: el estrés y la calidad de vida en el contexto laboral. *Revista Nacional de Administración Costa Rica*, 1 (1): 71-84.
- Espinoza Guerrero, M.; Valverde Hidalgo, S. y Salazar Hellen, V. (2011) Vivencia holística del estrés en profesionales de Enfermería. *Enfermería actual en Costa Rica* (20).
- Garcete, M. E. (2008) Estrategias de afrontamiento y estrés laboral en hombres y mujeres de 18 a 41 años. *PsicopediHoy*, 10 (88).
- Goncalves, L.; Feldman, L. y Guarino, L. (2009) Estrés laboral, sensibilidad egocéntrica negativa y salud en profesionales venezolanos. *SUMMA Psicológica UST*, 6(1), 3-14.
- Kertész, R. (1989) *El monitor del stress*. Buenos Aires: Ippem.
- Kertész, R., Kerman, B. y Kertész, A. (2006) *El manejo del estrés psicosocial*. Buenos Aires: Editorial de la Universidad de Flores.
- Landaboure, N. B. (2002) *Escala existencial de A. Längle, C. Orgler & M. Kundi. Manual Introductorio*. Buenos Aires: Dunken.
- Loli P., A.; Arias Galicia, F.; Alarcón V., Jorge y Loli P., R. (2008) Agotamiento laboral en profesionales de la salud de Lima Metropolitana. *Revista de Investigación en Psicología*, 11(2).
- López-Araujo, B.; Osca Segovia, A. y Peiró, J. M. (2007). El papel modulador de la implicación con el trabajo en la relación entre el estrés y la satisfacción laboral. *Psicothema*, 81-87.
- Martínez Ortiz, E. (2009) *Buscando el sentido de la vida*. Barcelona: Ediciones Aquí y Ahora.
- Martínez Ortiz, E. y Castellanos Morales, C. (2013). Percepción de sentido de vida en universitarios colombianos. *Pensamiento Psicológico*, 1(1), 71-82.
- Morano-Báez, R.; Albar-Marín, M.; García-Ramírez, M.; Prieto Guerrero, M. y García Nieto, A. (2009) Afrontamiento del estrés ocupacional entre profesionales de enfermería hospitalaria desde la investigación-acción participativa. *Enfermería Clínica*, Barcelona.
- Nava Quiroz, C.; Ollua Méndez, P.; Vega Valero, C. y Soria Trujano, R. (2010) Inventario de Estrategias de Afrontamiento: una replicación. *Psicología y Salud*, 20(2), 213-220.

- Nesci, V. (2010) *La construcción del proyecto de vida. La importancia del desarrollo de las competencias personales y existenciales de los adolescentes en la escuela*. Mendoza: Facultad de Psicología, Universidad del Aconcagua.
- Olivé Pibernat, V. (2012). *Coaching por valores*. México: LID.
- Olivieri, M. F. (2002) *Estrés, una aproximación a su conocimiento y prevención. Tesis Doctoral*. Buenos Aires: UFLO.
- Perea-Baena, J.M. y Sánchez-Gil, L.M. (2008). Estrategias de afrontamiento en enfermeras de salud mental y satisfacción laboral. *Index Enfermería*, 17(3), 164-168.
- Salazar Lozano, H. (2006) Estandarización de la Escala Existencial de A. Längle, C. Orgler y M. Kundi en una Muestra de Universitarios. *Psicologías, Estudios sobre Mente, Cultura e Historia*.
- Santos, A. F. y Cardoso, C. L. (2010) *Profesionales de la salud mental: estrés y estresores ocupacionales en salud mental*. Brasil: Departamento de Psicología y Educación, Facultad de Filosofía, Ciencias y Letras de Ribeirao Preto, Universidad de San Pablo.
- Schmid, K.; Drexler, H.; Fischmann, W.; Uter, W. y Kiesel, J. (2011) Which occupational groups in a hospital are particularly estressed? *Deutsch Medical Wochenschr*, 136(30), 1517-22.
- Spinelli, H.; Trotta, A.; Guevel, C.; Santoro, A.; García Martínez, S.; Negrín, G. y Morales Castellón, Y. (2013). *La salud de los trabajadores de la salud. Trabajo, empleo, organización y vida institucional en hospitales públicos del aglomerado Gran Buenos Aires, Argentina, 2010-2012*. Buenos Aires: OPS.
- Tebé, L. (2007) *Eustrés: la Respuesta de la Superación*. Perú: Salud Vital.
- Zhang, X., Smith, D.R., Zheng, Y., Wang, R.S. (2011) Occupational stress and psychosomatic complaints among health professionals in Beijing, China. *Work*, 40(2), 239-45.

POTENCIALIDADES Y APLICACIONES DE LAS INTELIGENCIAS MÚLTIPLES

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Abstract

Traditionally and even today, most educational institutions at all levels tends to value exclusively or at least predominantly, the kinds of intelligence that Gardner (1983) called Logical/Mathematical and Verbal/Linguistic. They are required especially in careers like engineering, systems, or law. People who do not excel in these areas tend to be discriminated, and this could lower their self esteem and performance. However, other careers primarily involves additional skills, such as the case of Psychology, Graphic Design, or Physical Activity and Sport. In this sense, Gardner (1983) proposed the existence of at least 5 other types of intelligence: Intrapersonal, Interpersonal, Visual/Spatial, Bodily/Kinesthetic, and Musical/Rhythmic. In turn, each type of Intelligence is decomposable into a number of sub-intelligences that describe different aspects of it. According to Macías (2002), *"This new view of intelligence vindicates the human condition in relation to its multiple capabilities of cognition and education, and in generatings new pedagogical and institutional practices. Finally, the value of the cultural environment for the development of human intellect is stressed"* (p.27). In addition, he continues: *"Every intelligence expresses a capability that operates according to its own procedures, systems and rules, and has its own biological basis"* (p.32)

Keywords: Potentials, Applications, Multiple Intelligences

Resumen

Tradicionalmente y aún en la actualidad, en la mayoría de las instituciones educativas, en todos los niveles, se tiende a valorar exclusivamente o por lo menos, preponderantemente, a los tipos de Inteligencia que Gardner (1983) denomina Lógico / Matemática y Verbal / Lingüística. Los mismos son requeridos especialmente en carreras como Ingeniería, Sistemas, o Derecho. Las personas que no se destacan en estos aspectos, tienden a ser discriminadas, lo cual podría disminuir su autoestima y rendimiento. Sin embargo, otras carreras implican principalmente

habilidades adicionales, como el caso de Psicología, Diseño Gráfico o Actividad Física y Deporte. En este sentido, Gardner (1983) propuso la existencia de por lo menos otros 5 tipos de Inteligencia: Intrapersonal, Interpersonal, Visual / Espacial, Corporal / Kinestésica, Musical / Rítmica.

A su vez, cada tipo de Inteligencia es desglosable en un número de sub – inteligencias que describen aspectos diferentes de la misma. Según Macías (2002), *“Esta nueva visión de la inteligencia permite reivindicar la condición humana con relación a sus múltiples capacidades de cognición y genera en la educación nuevas prácticas pedagógicas e institucionales. Finalmente, se señala también el valor del entorno cultural para el desarrollo del intelecto humano”* (p.27) y prosigue: *“Cada inteligencia expresa una capacidad que opera de acuerdo con sus propios procedimientos, sistemas y reglas y tiene sus propias bases biológicas”* (p.32)

Palabras clave: Potencialidades, Aplicaciones, Inteligencias Múltiples

Introducción

Aristóteles diferencia entre la potencia (las posibilidades y capacidades latentes de un ser humano, y el acto que equivale a llevar a cabo esas potencialidades. Por ejemplo un niño posee la potencia de llegar a adulto.

Para poder explicar el cambio Aristóteles necesitará recurrir no sólo a la teoría de la sustancia, que le permite distinguir la forma de la materia, sino además a otra estructura metafísica, la que permite distinguir dos nuevas formas de ser: el ser en acto y el ser en potencia. A su estudio dedicará el libro IX de la "Metafísica" (1).

Del mismo modo, acorde a Gardner, todos poseemos potencialidades en cada uno de nuestros 7 tipos de Inteligencia o habilidades pero para que lleguen al acto necesitan que el entorno familiar, educativo y social motive y apoye a los jóvenes para dichos desarrollos.

Esto depende de factores culturales, sociales y económicos. Justamente por eso tradicionalmente se hizo hincapié en las Inteligencias Matemáticas y Lingüísticas. Los mejores alumnos de los colegios de nivel primario eran los que tenían los mayores puntajes en eso dos tipos.

En general la sociedad de consumo desestima alguna de ellas por una persona plena tiene las alternativas y el derecho de ponerse en contacto con todas ellas y aplicarlas que sean factibles en las diversas áreas que mencionamos.

Como ejemplo el pequeño Mozart era un genio musical que desde muy pequeño contó con el pleno apoyo de su familia que hizo posible sus aportes.

Definiciones de Inteligencia y de Inteligencias Múltiples. Howard Gardner

Inteligencia

- Es la capacidad o facultad de entender, razonar, saber, aprender y de resolver problemas. En este sentido se asemeja a conceptos como 'entendimiento' e 'intelecto'.

-En Psicología, inteligencia es la capacidad cognitiva y el conjunto de funciones cognitivas como la memoria, la asociación y la razón.

Se puede entender también como la habilidad o destreza para realizar algo (2)

- Del latín, *intellegentia*, es la capacidad de pensar, entender, asimilar, elaborar información y emplear el uso de la lógica. El *Diccionario de la lengua española* de la Real Academia Española define la inteligencia, entre otras acepciones, como la «*capacidad para entender o comprender*» y como la «*capacidad para resolver problemas*». La inteligencia también está ligada a otras funciones mentales como la percepción o capacidad de recibir información, y la memoria, o capacidad de almacenarla (3)

Historia

Thomas Armstrong en su libro *Las inteligencias múltiples en el aula* (1999), explica clara y sistemáticamente la teoría de las inteligencias múltiples (IM) desarrollada por Howard Gardner.

En 1904, el Ministerio de Instrucción Pública de Francia pidió al psicólogo francés Alfred Binet y a un grupo de colegas suyos, que desarrollaran un modo de determinar cuáles eran los alumnos de escuela primaria que corrían el "riesgo" de fracasar, para que estos alumnos recibieran una atención compensatoria. De sus esfuerzos nacieron las primeras pruebas de inteligencia. Importadas a los Estados Unidos varios años después, las pruebas de inteligencia se difundieron ampliamente, así como la idea de que existía algo llamado "inteligencia" que podía medirse de manera objetiva y reducirse a un único número o puntaje de "coeficiente intelectual"(CI) (4).

Inteligencias Múltiples

En 1979, la Fundación Bernard Van Leer -grupo filantrópico holandés- pidió al investigador y psicólogo de la Universidad de Harvard, Howard Gardner, y a sus colegas, que investigaran sobre el "Potencial Humano". De esta forma nació el "Proyecto Zero", dando inicio a la Teoría de "Múltiples inteligencias", las cuales plasmó en su libro *Frames of Mind* (Marcos Mentales, 1983) (5) con el objetivo de ampliar la toma de conciencia sobre nuestras capacidades, tradicionalmente concentradas en sólo dos de ellas: *Verbal / Lingüística y Lógico / Matemática*.

Revolucionó las ideas anteriores sobre qué capacidades o habilidades deben tener las personas para decir de ellos “Son inteligentes”.

Definición de “inteligencia” según Gardner (1993)

En lugar de adjudicarla al puntaje logrado en un test determinado, la considera, con un enfoque fuertemente pragmático y cultural, como:

- a) La capacidad de resolver problemas de la vida real;
- b) La capacidad de descubrir y generar nuevos problemas a ser resueltos;
- c) La capacidad de generar productos y servicios valorados en la propia cultura

Dicho autor estableció que, aunque todos poseemos toda la gama de “inteligencias”, cada individuo demuestra diferentes niveles y combinaciones de las mismas.

Adicionalmente, fijó algunos criterios fundamentales para poder llamar “inteligencia” a una capacidad o talento. Entre ellos, mencionaremos los siguientes:

1. Que pueda ser coartada por una lesión cerebral
2. Que posea una historia evolutiva, la cual es atravesada por el individuo en su desarrollo, en condiciones más o menos favorables de educación y apoyo ambiental;
3. Que sea observable en poblaciones especiales, como los autistas, los *idiotas savants* o los niños prodigio.
4. Que muestre evidencias de localización cerebral (ejemplo: lo Visual/Espacial en la corteza occipital)
5. Que pueda ser codificada en un sistema de símbolos (p.ej., el lenguaje, las imágenes o las matemáticas).

La importancia de la definición de Gardner es doble:

Primero, amplía el campo de lo que es la inteligencia y reconoce lo que todos sabíamos intuitivamente, y es que la brillantez académica no lo es todo. A la hora de desenvolvemos en esta vida no basta con tener un gran expediente académico.

Hay gente de gran capacidad intelectual pero incapaz de, por ejemplo, elegir bien a sus amigos y, por el contrario, hay gente menos brillante en el colegio que triunfa en el mundo de los negocios o en su vida personal. Triunfar en los negocios, o en los deportes, requiere ser inteligente, pero en cada campo utilizamos un tipo de inteligencia distinto. No mejor ni peor, pero si distinto. Dicho de otro modo, Einstein no es más inteligente que Michel Jordan, pero sus inteligencias pertenecen a campos diferentes.

Segundo y no menos importante, Gardner define la inteligencia como una capacidad. Hasta hace muy poco tiempo la inteligencia se consideraba

algo innato e inamovible. Se nacía inteligente o no, y la educación no podía cambiar ese hecho. Al definir la inteligencia como una capacidad, Gardner la convierte en una destreza que se puede desarrollar. Gardner no niega el componente genético.

Todos nacemos con unas potencialidades marcadas por la genética. Pero esas potencialidades se van a desarrollar de una manera o de otra dependiendo del medio ambiente, nuestras experiencias, la educación recibida, etc. Ningún deportista de elite llega a la cima sin entrenar, por buenas que sean sus cualidades naturales. Lo mismo se puede decir de los matemáticos, los poetas, o de la gente emocionalmente inteligente. Howard Gardner añade que igual que hay muchos tipos de problemas que resolver, también hay muchos tipos de inteligencia

Con estos y otros criterios, Gardner propuso inicialmente 7 tipos de las “Inteligencias Múltiples”, con un enfoque transcultural

Verbal/ Lingüística: la capacidad para pensar en conceptos y palabras, y emplear el lenguaje para expresarse y comprender significados complejos.

Presente en escritores, poetas, conferencistas, políticos y abogados.

Lógico/ Matemática: permite abstraer, calcular, cuantificar, considerar hipótesis y propuestas, realizar operaciones matemáticas, extrapolar las consecuencias probables de nuestras decisiones. Predomina en científicos, contadores, ingenieros, licenciados en sistemas.

Visual/ Espacial: habilidad para pensar en imágenes tridimensionales y operar con las mentales (internas), crear y transformar las externas, orientarse en el espacio, manejo de diseño y colores. En arquitectos, artistas plásticos, pilotos, cirujanos.

Corporal/ Kinestésica: habilita para manipular objetos y controlar al propio cuerpo en movimientos de alta exigencia y precisión. En atletas, bailarines, actores, cirujanos. No tan valorada en Occidente como lo cognitivo; sin embargo, es esencial para la supervivencia, así como para la autoexpresión.

Musical/Rítmica: necesaria para percibir, retener reproducir y crear sonidos de todo tipo; su altura, timbre y ritmo. Presente en músicos, compositores, directores de orquesta, críticos musicales, pero también en actores y políticos.

Intrapersonal: el conocimiento de sí mismo, la autoevaluación, la percepción de los propios pensamientos, imágenes, emociones y sensaciones, y su aplicación para la planificación y control de la vida del individuo. Desarrollada en psicólogos, filósofos, teólogos, algunos escritores autobiográficos.

Interpersonal: comprensión de los demás, comunicación e interacciones efectivas. Evidente en docentes, psicólogos, líderes en general, actores, vendedores y políticos.

Así como la cultura occidental ha comenzado, relativamente, recientemente a aceptar la integración de mente, cuerpo y ambiente, está reconociendo cada vez más la importancia de establecer relaciones humanas satisfactorias. Esto se entiende especialmente como producto de la disminución del autoritarismo en las diversas instituciones. Es muy raro que un educador golpee actualmente a un alumno con dificultades de comprensión o trastornos de conducta, y como se espera que coadyuve en el desarrollo de la personalidad de sus discípulos, así como su individualidad y creatividad, requerirá cada vez mayores habilidades interpersonales (*social skills*: Gazda, 1982). Algo similar ocurre con los directivos, al constatarse el mayor rendimiento de los equipos de trabajo y la delegación del poder (Dolan y Martín, 2000).

En la práctica se observa que determinada tarea o profesión requiere una *combinación* de varios tipos de Inteligencia. O, más bien, de las *sub-inteligencias* específicas requeridas. Sería un ejercicio altamente valioso determinar cuáles deben coadyuvarse para ejecutar determinada tarea exigente, para capacitarse en cada una de ellas. Por ejemplo, una intervención quirúrgica requiere subinteligencias Visuo-Espacial, como la memoria visual de las estructuras anatómicas, Corporal/ Kinestésica como la habilidad manual con el instrumental, y Lógico/ Matemática para el monitoreo de los signos vitales y la toma de decisiones en la operación.

Resumen del Cuestionario de Autoevaluación de las Inteligencias Múltiples (CAIM)

El CAIM Fue creado por el Dr. Roberto Kertész en 1996 para su aplicación inicial a estudiantes de la Universidad de Flores. La primera versión, con sólo 4 variables o *sub-inteligencias* fue tomada a 219 alumnos de 1er. Año, en 1997 por una de las docentes. La consigna para el llenado fue la siguiente: “*Marca con un puntaje entre 0 (ninguna eficacia) y 10 (máxima eficacia), la forma en que te desempeñas en las siguientes actividades (o sub-inteligencias).*”

Como numerosos sujetos manifestaron que las 4 subinteligencias no cubrían una gama suficiente de las mismas dentro de cada tipo de Inteligencia, desechamos los puntajes hallados y decidimos ampliar su número a 10, para mayor validez del Cuestionario. Solamente calificamos que los puntajes más bajos correspondieron a la Inteligencia Musical/Rítmica. Puede explicarse esto adjudicándole el mayor peso en lo genético y por el escaso porcentaje de personas que estudia música.

En nuestra opinión, no es necesario incorporar Inteligencias adicionales que son en realidad, combinaciones de algunas subinteligencias previas. De otro modo podrían agregarse una lista interminable de las mismas.

Las Inteligencias personales (Intra- e Interpersonal) son las menos genéticas y, por ello, las que más responden a la capacitación y psicoterapia, que en nuestro enfoque es primordialmente grupal.

Para cada una de estas 7 Inteligencias hemos seleccionado una serie de 10 sub-inteligencias que representan diferentes componentes de las mismas.

En el Cuestionario se le solicita a la persona que, luego de completarlo, relacione sus respuestas con

1. La carrera que eligió o que decidirá.
2. Su trabajo, profesión, hobbies, deportes. ¿Cuáles Inteligencias o sub-inteligencias aplica mejor para cada rol?
3. Cuales necesita desarrollar más para cumplir sus tareas efectivamente.
4. Los puntajes de su pareja, socios, compañeros. Cuales son sus conclusiones.

La forma en que se desempeña en las actividades que figuran en el CAIM, se marcan con un puntaje de 1 a 10, en el cual 1 significa nunca y 10 significa siempre.

Intrapersonal (lo que ocurre en mi mente).

1. Analizo y mejoro mis ideas y proyectos
2. Puedo corregir mis ideas o creencias cuando percibo que son erróneas
3. Sé cuando puedo arreglarme solo y cuando necesito pedir ayuda
4. Me doy cuenta de las distintas emociones que siento (alegría, afecto, miedo, rabia, tristeza, fastidio, etc.)
5. Reconozco tanto mis virtudes y aciertos, como mis limitaciones y errores
6. Acepto mi responsabilidad por lo que pienso, siento y hago en vez de culpar a otros
7. Me doy cuenta de lo que me digo a mí mismo (puedo escuchar mis diálogos internos)
8. Cuando me equivoco, aprendo de eso para no repetirlo
9. Cumpló los compromisos que asumo conmigo mismo y con los demás
10. Escucho y aplico las opiniones de los demás sobre mi persona o logros sin por ello reducir mi autoestima

Interpersonal (*mis relaciones con los demás*)

1. Al observar las conductas de otras personas, me doy cuenta de las emociones que sienten
2. Escucho a los demás y llego a aceptarlos aunque no esté de acuerdo con ellos
3. Puedo reflejar ,como si fuera un espejo, lo que otros dicen o expresan con sus gestos y su cuerpo
4. Obtengo los resultados deseados como líder o conductor de grupos
5. Capto lo negativo y lo positivo de las personas, pero tiendo a reforzar lo positivo en ellas en vez de criticarlas o discutir con ellas
6. Disfruto estando en compañía de gente que tenga valores e intereses parecidos a los míos
7. Pido lo que necesito en forma amable, directa y verbal
8. Puedo negociar y llegar a acuerdos flexiblemente
9. Apoyo a las personas cuando percibo que realmente lo necesitan
10. Defiendo mis derechos y me hago respetar, en forma firme y serena

Verbal-lingüística (*leer, escribir, comunicarme hablando*)

1. Entiendo los diversos textos escritos y puedo comentarlos
2. Expreso fácilmente por escrito lo que pienso y siento, en forma comprensible para otros
3. Entiendo y empleo el buen humor, el doble sentido de los chistes y los juegos de palabras
4. Expreso fácilmente hablando lo que pienso y siento, en forma comprensible para otros
5. Tengo facilidad para aprender idiomas
6. Lo que digo coincide con la forma en que lo expreso (gestos, tonos de voz, etc.)
7. Me interesa el significado preciso de las palabras y las uso de esa manera
8. Mantengo la fluidez hablando en público
9. Tengo buena ortografía
10. Puedo describir verbalmente imágenes, ya sean internas o externas, con precisión

Visual-espacial (*imaginar, observar, crear formas*)

1. Dibujo y / o pinto en forma creativa
2. Recuerdo mis sueños en forma clara
3. Me oriento por mapas con facilidad
4. Puedo hacer gráficos y diagramas para representar distintos temas
5. Recuerdo claramente los lugares que vi
6. Capto cómo funcionan los aparatos y máquinas viéndolos y/o imaginándolos por dentro
7. Distingo los matices de los colores y puedo reproducirlos
8. El ver una foto puedo reconstruir la situación en que fue tomada
9. Empleo imágenes o escenas internas para hallar soluciones creativas
10. Tengo buena orientación en el espacio

Lógico-matemática (*abstraer, razonar, calcular*)

1. Cuando ocurre algo, pienso en lo que pudo haberlo provocado
2. Puedo hacer cálculos y operaciones matemáticas mentalmente y por escrito
3. Soluciono los problemas en forma racional
4. Resuelvo acertijos y problemas numéricos
5. Cuando aprendo algo, lo aplico a situaciones futuras
6. Puedo asignarle valores numéricos a un tema o problema
7. Sustento mis ideas con argumentos lógicos y datos verificables
8. Siempre saqué buenas notas en matemáticas, física o química
9. Tomo decisiones fijando el estado actual, el estado deseado y buscando distintas opciones para lograrlo
10. Manejo eficazmente mi presupuesto

Musical-rítmica (*oído musical para tonos de voz, sonidos, ritmos*)

1. Puedo seguir o reproducir distintos ritmos con mi cuerpo o golpeando algún elemento
2. Diferencio distintos sonidos del ambiente y me doy cuenta de qué los produce (aparatos, motores, relojes, animales)
3. Recuerdo y puedo tararear, cantar o silbar la música que escucho
4. Puedo crear melodías o canciones, aunque no sepa escribirlas
5. Reconozco un tema musical que escuché, a los primeros sonos
6. Me doy cuenta de si un cantante o instrumentista está desafinado
7. Puedo hacer arreglos musicales combinando instrumentos y voces
8. Tengo oído armónico (capto cuáles acordes corresponden a una melodía)
9. Soy capaz de evocar música en mi mente y cambiarla a voluntad (la melodía, ritmo o tonalidad)
10. Diferencio los tonos de voz de las personas y las emociones que transmiten

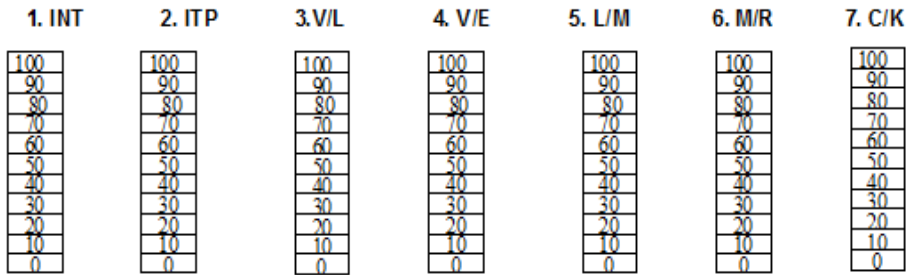
Corporal-kinestésica (*percepción y control del propio cuerpo, expresión física, habilidad manual*)

1. Percibo mis sensaciones físicas
2. Bailo bien y con gracia
3. Mis sensaciones físicas me ayudan a percibir situaciones y tomar decisiones
4. Soy hábil jugando con objetos con las manos o los pies
5. Expreso lo que siento con mímica y empleando mi cuerpo
6. Soy efectivo / a en las actividades físicas
7. Tengo habilidad manual para desarmar y armar objetos, aparatos, máquinas
8. Identifico y diferencio objetos por el tacto
9. Puedo mover, contraer o relajar los músculos a voluntad
10. Manejo bien aparatos y vehículos

Una vez que haya fijado los puntajes por tipo de Inteligencia, puede representarlos gráficamente mediante gráficos de barras. Cada Inteligencia fue dividida en 10 sub-tipos, a cada uno de los cuales Ud. asignó un puntaje

de 1 a 10 en función de su propia eficacia, pericia o habilidad para emplearlos.

Suma los Totales para cada tipo de Inteligencia. Obtendrá un valor entre 10 y 100 para cada una. Marque la altura que corresponda en cada columna al número obtenido con un punto. Una todos los puntos y obtendrá su Perfil de Inteligencias Múltiples. Podría asignar diferentes colores a cada barra, le va a llegar más al Niño que lleva dentro suyo:



Analizamos sus resultados: Cuál es la más alta? En qué tareas, roles, la aplica?

Y las que la siguen? Y la más baja? Cómo lo afecta en su vida en general?

Le interesa desarrollarla más?

Si quiere hilar más fino, puede estudiar cuáles *sub-inteligencias* son las que tiene más bajas y decidir incrementarlas.

Existen numerosas actividades, hobbies, cursos, seminarios, carreras o hasta psicoterapia para los fines que Ud. requiera. Con ellos puede incrementar su calidad de vida.

Sería valioso que proponga completar este Cuestionario a sus familiares y otros allegados y que intercambien opiniones sobre los resultados que cada uno obtenga.

Subinteligencias que deseo desarrollar:

Inteligencia:

Subinteligencia N°: Puntaje que me asigné:

(seguir en otra hoja con otras subinteligencias)

Actividades o ejercitaciones que me servirían para este fin: (busque algo que le guste, además de serle útil):

.....
 Plan concreto que decido ejecutar:

.....
 ..

Ejemplos:

En mi Inteligencia Interpersonal deseo aumentar mi sub-inteligencia Nº 1: “*Al observar las conductas de otras personas, me doy cuenta de las emociones que sienten*”. Actividades útiles: asistir a talleres o grupos de crecimiento con Análisis Transaccional o Gestalt.

O en el caso de la Inteligencia Corporal Kinestésica, en la subinteligencia Nº 6: “*Soy efectivo en las actividades físicas*”, la actividad puede consistir en contratar a un entrenador personal o iniciar algún deporte.

Nota impresa debajo del Cuestionario: “*Le invitamos a compartir sus resultados y sugerencias con nosotros, escribiendo al Dr. Roberto Kertész, rkertesz@uflo.edu.ar y a la Lic. Cristina Stecconi, cstecon@uflo.edu.ar y licris0902@gmail.com.*

Enviando su dirección de correo, recibirá: 1. La Hoja Anexa Explicativa, 2. Los datos estadísticos recogidos a la fecha para comparar sus resultados, 3. El trabajo “Los factores de la decisión o redecisión vocacional: El rol de las Inteligencias Múltiples” y 4. Información sobre nuevos avances en el tema. Si aplica el Cuestionario, debe citar al autor”.

Actualmente estamos trabajando en la validación del CAIM con la información brindada por 813 ingresantes a la Universidad de Flores:

Este proyecto propone explorar la asociación entre los puntajes en ingresantes a la Universidad de Flores y alumnos de los primeros años de las carreras de grado y su elección de carrera.

Áreas posibles de aplicación del CAIM

Educación

Decisión y Redecisión Vocacional

Howard Gardner (1983) denominó *Lógico/Matemática* y *Verbal/Lingüística*, a los dos tipos de inteligencia que se valora más en las instituciones educativas, por lo que las personas que no se destacan en estos aspectos, tenderán a ser discriminadas y sus potenciales de otro tipo limitados, tanto en el aula como en su vida en general. Famosos deportistas (como Diego Maradona), demostraron capacidades superiores en su sociedad, a pesar de una escolaridad mediocre o insuficiente.

El CAIM será útil para conocer en qué rindo mejor, mis aptitudes y habilidades. Suelo administrarlo a alumnos de los últimos años de la escuela secundaria a fin de colaborar con ellos en su futura elección de carrera, a alumnos que están por ingresar a la Universidad y a alumnos que están decidiendo una segunda carrera o profesión.

Howard Gardner (1983) denominó *Lógico/Matemática* y *Verbal/Lingüística*, a los dos tipos de inteligencia que se valora más en las instituciones educativas, por lo que las personas que no se destacan en estos aspectos, tenderán a ser discriminadas y sus potenciales de otro tipo

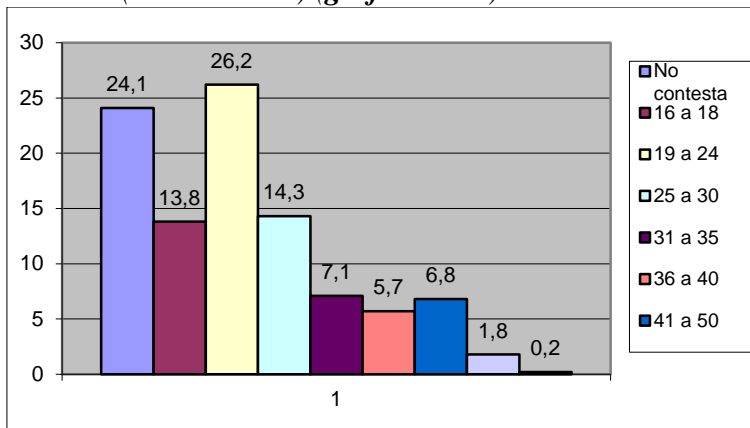
limitados, tanto en el aula como en su vida en general. Famosos deportistas (como Diego Maradona), demostraron capacidades superiores en su sociedad, a pesar de una escolaridad mediocre o insuficiente.

En la práctica se observa que determinada tarea o profesión requiere una *combinación* de varios tipos de Inteligencia. O, más bien, de las *inteligencias* específicas requeridas. Por ejemplo, una intervención quirúrgica requiere inteligencias Visuo-Espaciales, como la memoria visual de las estructuras anatómicas, Corporal/ Kinestésicas como la habilidad manual con el instrumental, y Lógico/ Matemáticas para el monitoreo de los signos vitales y la toma de decisiones en la operación.

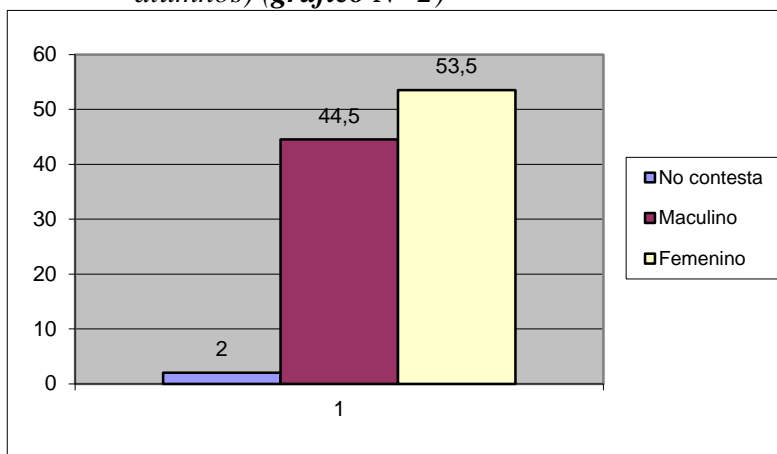
Actualmente estamos trabajando en la validación del CAIM con la información brindada por 813 ingresantes a la Universidad de Flores:

La selección de la muestra inicial para la validación del instrumento, punto de partida del presente proyecto, fue de tipo intencional, por cuotas de género y edad. Participaron del estudio 813 sujetos muestrales (45,4% hombres y 54,6% mujeres), todos ingresantes a alguna de las carreras de la Universidad de Flores. El rango etario de los participantes fue de 16 a 60 años. Tanto la muestra piloto como la nueva muestra para la determinación de la validez de constructo y determinación de la versión fina del CAIM-2, será obtenida de alumnos ingresantes a la UFLO y de estudiantes de los dos primeros años, preferentemente de la sede principal en Buenos Aires

1.1 Edad: El mayor porcentaje de los ingresantes tiene entre 19 y 24 años, (26,2%). Seguido por 112 alumnos (13,8%) que están dentro de la franja etaria de 16 a 18 años. El 14,3% (116 alumnos) tiene entre 25 y 30 años. El 7,1% (58 alumnos) entre 31 y 25 años, el 6,8% (55 alumnos) entre 41 y 50 años, el 5,7% (46 alumnos) entre los 36 y 40 años. El 1,8% (15 alumnos) tienen entre 51 y 60 años y el 0,2% (2 alumnos) más de 60 años. No contesta el 24,1% (196 alumnos) (gráfico N° 1)

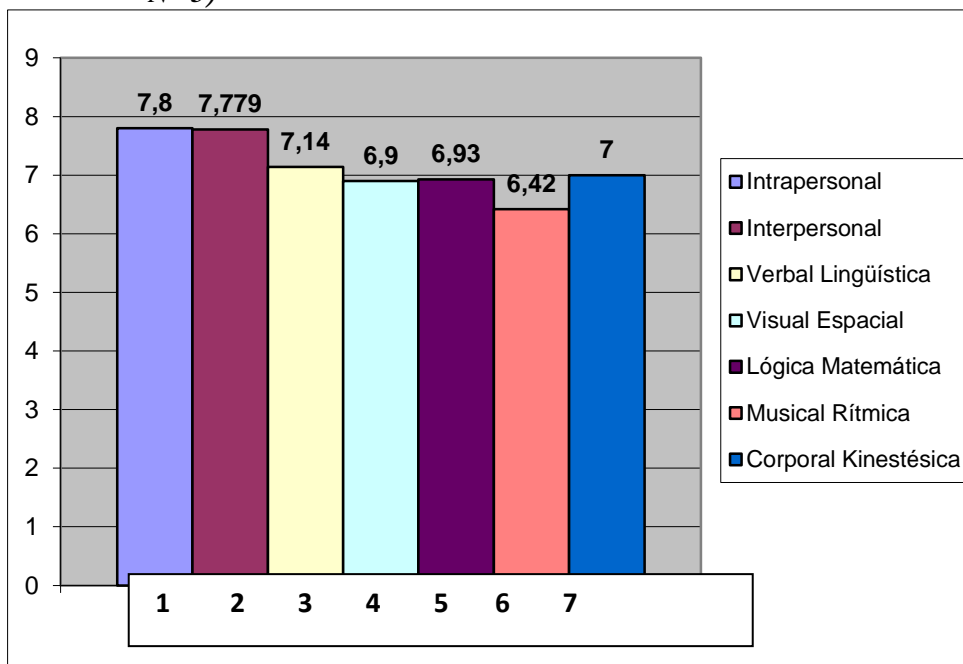


1.2 **Sexo:** Son del sexo femenino el 53,5% (435 alumnos) y del masculino el 44,5% (362 alumnos). No contesta el 2% (16 alumnos) (gráfico N° 2)



1.2.1.1.1.1

1.2.1.1.1.2 En los 813 ingresantes a la UFLO, el puntaje total más alto corresponde a la Inteligencia Intrapersonal, seguida, en orden decreciente, por las Inteligencias Interpersonal, Verbal Lingüística, Corporal Kinestésica, Lógica Matemática, Visual Espacial y por última, la Inteligencia Musical Rítmica (gráfico N° 3)



Este proyecto propone explorar la asociación entre los puntajes en ingresantes a la Universidad de Flores y alumnos de los primeros años de las carreras de grado y su elección de carrera.

Adicionalmente, las aplicaciones posibles del instrumento, entre otras:

- La Decisión y Redecisión vocacional
- El proceso educativo
- El enriquecimiento del desempeño profesional y académico
- El desarrollo de actividades del tiempo libre, como los hobbies y deportes
- El manejo creativo del tiempo en los adolescentes y en la tercera edad
- Opciones de actividades gratificantes de personas con capacidades diferentes

Desarrollo personal y Sentido de Vida (Frankl) en las distintas edades Adultos Mayores

El envejecimiento poblacional es uno de los más grandes logros de la humanidad pero a la vez se convierte en uno de los mayores desafíos en la actualidad (National Institute on Aging, 2007). Debido al progreso social, tecnológico y médico, el envejecimiento poblacional se convierte en un fenómeno social propio de nuestra época, lo cual conlleva una serie de repercusiones no solamente sociales, sino también económicas y políticas (6).

Para convertir a la tercera edad en una “buena edad”, como lo decía Leopold Bellak, un importante psiquiatra norteamericano, quien permaneció activo y productivo hasta su muerte a los 80 años, poseemos numerosas opciones. Una de ellas consiste en explorar nuestras habilidades (skills) o inteligencias, como las denominó Gardner, en su descripción de las Inteligencias Múltiples, (1983-1999).

Para reconocer qué tipo de Inteligencia prevalece en cada uno de nosotros, aplicamos el CAIM en Talleres de Adultos Mayores, con experiencias vivenciales especialmente diseñadas para la activación de sus 7 tipos de Inteligencia.

En dicho Taller y con la utilización del instrumento, brindamos un listado de actividades posibles vinculadas con las 7 Inteligencias y los lugares donde se realizan las mismas.

Todo esto es una atractiva invitación a conectarse con los potenciales personales y trascender una existencia a veces rutinaria o, a veces, puramente vegetativa.

Y ocurre que muchas de estas personas manifiestan por primera vez en su vida alguna de esas formas creativas que le ayudarán adicionalmente a establecer nuevos lazos sociales, tanto entre los participantes del Taller como para su futuro con quienes pueda llegar a conocer.

Para otras edades, el empleo del instrumento ofrece recursos similares.

Incremento de la autoestima al contar con mayores recursos.

Comunicación efectiva (empatía), al comprender los diferentes perfiles de cada persona.

Hobbies, compensando la rutina laboral

Entendemos por hobby o hobbies en plural a todas aquellas actividades que una persona realiza por gusto e interés personal y no por obligación como pueden ser el trabajo o el estudio. Normalmente el hobby es un pasatiempo que puede no estar relacionado en nada con la actividad laboral o profesional que uno ejerce.

La variedad de hobbies existentes es tan numerosa como número de personas hay ya que cada uno puede tener un hobby diferente y particular, adaptándolo a su estilo de vida único (7). A través del hallazgo de distintas capacidades, habilidades y recursos internos no vistos hasta ese momento, el Cuestionario resulta de mucha importancia, en su recorrido podemos darnos cuenta qué actividad se puede convertir en un camino de disfrute, de eustress, de diversión.

Creatividad

La Inteligencia como la creatividad son plural, se desarrollan de acuerdo con las Inteligencias Múltiples. Gardner (1998) nos muestra que las personas creativas son también excepcionales en el campo de la inteligencia. En su libro “Mentes creativas” propone una aproximación conceptual a la creatividad que denomina *perspectiva interactiva*. Aquí reconoce tres niveles de análisis que no pueden ser desatendidos en una consideración de la creatividad: **La persona**, con su propio perfil de capacidades y valores, **el campo** o disciplina en que trabaja con sus sistemas simbólicos característicos y **el ámbito circundante** con sus expertos, mentores, rivales y discípulos que emite juicios sobre la validez y calidad tanto del individuo como de sus productos.

La creatividad debe entenderse como un proceso donde intervienen los tres niveles anteriores” (Macías, 2002).

Organizacional

Ampliación de las competencias laborales.

Determinación del perfil laboral efectivo en distintas profesiones, en base a casos Exitosos.

(Desde luego pueden existir otras aplicaciones posibles)

References:

- Frankl, Víctor E. (1971): *Man's search for meaning; an introduction to Logotherapy*, 7ma. ed., Pocket Book, Nueva York.
- Gardner, Howard (1983): *Frames of mind: The theory of múltiple intelligences*. Basic Books, Nueva York.
- Gardner, Howard (1993): *Múltiple Intelligences; The theory in practice*, Basic Books, Nueva York.
- Gardner, Howard (1999): *Intelligence reframed*. Basic Books, Nueva York.
- Kertész, Roberto (1993): *El placer de aprender*. Ed. IPPEM, Buenos Aires.
- Kertész, Roberto (2002): *Inteligencias múltiples y decisión vocacional*. Relato presentado en el Ilo. Congreso Nacional y Io. Internacional de Educación, Córdoba, 3-5 de Octubre.
- Kertész, Roberto, Atalaya, Clara y Kertész, Adrián (2003): *Análisis Transaccional Integrado*, 3ª ed. Editorial IPPEM, Buenos Aires.
- Kertész, Roberto (2003): *Sabiduría Budista y autorrealización: El aporte de las nuevas ciencias de la conducta*. Editorial de la Universidad de Flores, Buenos Aires.
- Macías, María Amarís (2002): *Las Inteligencias Múltiples*. Psicología desde el Caribe, enero-julio N° 10. Universidad del Norte, Barranquilla, Colombia. Pp. 37, 27-38.
- Maslow, Abraham (1968): *Toward a Psychology of being*. D. Van Nostrand, Nueva York.
- Maslow, Abraham (1991): *La personalidad creadora*. Troquel, Buenos Aires.
- Steconni, Cristina (2003): *Los siete factores de la decisión o redisección vocacional: el rol de las Inteligencias Múltiples*. Relato presentado en el Ier. Congreso de Ciencias Sociales y Tecnología en Educación, organizado por la Universidad de Flores y la UTN, Fac. Reg. Buenos Aires, octubre 2-4.

Webgrafía:

- Entrada a la web 5 de marzo de 2015:
http://www.webdianoia.com/aristoteles/aristoteles_meta_4.htm (1)
- Entrada a la web 19 de febrero de 2015:
<http://www.significados.com/inteligencia/> (2)
- Entrada a la web 15 de febrero de 2015:
<http://es.wikipedia.org/wiki/Inteligencia> (3)
- Entrada a la web: <http://fguzmangg.blogspot.com.ar/2011/01/las-inteligencias-multiples-de-howard.html> (4)
- Entrada a la web 25 de julio de 2010:
http://www.proyectoespiga.com/inteligencias_multiples.php (5)

Entrada a la web 3 de marzo de 2015:

<http://www.redadultosmayores.com.ar/Material%202013/Nacionales%20Mexico/8%20El%20sentido%20de%20la%20voda%20y%20el%20AM%20en%20Area%20Metropol%20Monterrey.pdf> (6).

Entrada a la web 3 de marzo de 2015:

<http://www.definicionabc.com/general/hobby.php> (7).

EL ANÁLISIS AXIOLÓGICO COMO PROCESO SIGNIFICATIVO DE LA PSICOTERAPIA

Dr. Hernán Lanosa

Abstract

The study of human values has realized the importance of personal development and guiding behavior.

Rigorous research by Schwartz (1987, 1992 , 2000, 2004) implies a milestone in the field, since it shows that there are values that are replicated in different cultures which can be generalized . Such scientific finding opens the possibility for further study of human values , as well as generating processes, tools, techniques, and approaches that can enrich the work of psychology in general and psychotherapy particularly. This paper aims to present the proposal of "Axiological Analysis" which is nothing more than the analysis of personal values as a significant instance in the psychotherapeutic process.

Keywords: Human values, personal development

Resumen

El estudio de los valores humanos ha dado cuenta de la importancia que tienen en el desarrollo personal, ya que orientan la conducta. La rigurosa investigación realizada por Schwartz (1987, 1992, 2000, 2004) implica un hito en la materia, ya que la misma pone de manifiesto que hay valores que se replican en las diferentes culturas y que pueden generalizarse. Tal hallazgo científico abre la posibilidad para profundizar en el estudio de los valores humanos, así como también de generar procesos, instrumentos, técnicas y abordajes que enriquezcan el trabajo de la Psicología en general, y de la Psicoterapia de manera particular. Este trabajo tiene como finalidad presentar la propuesta del “Análisis Axiológico”, que no es otra cosa que el análisis de los valores personales, como una instancia significativa en el proceso psicoterapéutico.

Palabras Claves: Valores, Autenticidad, Proyecto de vida, Análisis Axiológico, Psicoterapia

Introducción

El espacio psicoterapéutico supone un lugar en donde el tiempo cronológico del mundo objetivo da paso a un tiempo otro y diferente, el tiempo subjetivo.

Es desde el tiempo subjetivo del consultante que se intentará acompañar a este en su mejor desarrollo, fijando objetivos consensuados y abriéndose paso a la trascendente aventura de la Psicoterapia.

Ocurre también que muchas veces la evolución del consultante queda “varada” por diferentes motivos. Características de la personalidad, trastornos psicológicos, experiencias traumáticas, situación socio-económica y cultural, pueden ser condicionantes a la hora de favorecer el desarrollo personal.

Pero lo que acontece de manera general en una Psicoterapia es un encuentro de dos personas que persiguen un mismo objetivo: la mejor realización del que consulta.

Los modos, las formas y la metodología de cómo llevar adelante semejante objetivo depende de muchas variables, las cuales pueden resumirse en la idea de que la psicoterapia individual es una ecuación con dos incógnitas: X para el que consulta e Y para el terapeuta (Frankl, 1990).

A la hora de pensar el desarrollo personal del que consulta, la construcción de un proyecto de vida auténtico y significativo pasa a ser una cuestión fundamental. Dar cuenta del proyecto de vida del paciente, implica de manera necesaria conocer cuáles son los valores que guían su conducta y cómo es que está pudiendo expresar esos valores en su cotidianeidad.

Ahora bien, considerando que los valores son guías que orientan la conducta del individuo, lograr “estandarizar” un proceso que posibilite conocer cuáles son los valores con los que se identifica la persona y si logra o no manifestarlos en su vida cotidiana, supone un tema de alta relevancia para la Psicología en general y para la Psicoterapia de manera particular.

Por tanto, esta propuesta tomará como punto de partida el trabajo fundamental realizado por Shalom Schwartz (1992) en referencia a los valores transculturales con el objetivo de presentar un proceso que posibilite conocer qué valores son importantes para el que consulta y con qué frecuencia puede expresarlos.

Para llevar adelante esta propuesta se introducirá conceptualmente la idea de valor desde la que se parte, para dar luego paso a presentar los diez valores transculturales descubiertos por Shalom Shwartz. Posteriormente a esto, se expondrá la importancia de la manifestación cotidiana de valores en la construcción del proyecto de vida personal, para dar paso a la presentación formal de la técnica desarrollada para llevar a cabo el “Análisis Axiológico”.

Desarrollo

El Análisis Axiológico y el concepto de valor

Por “Análisis Axiológico” se entiende al proceso estandarizado mediante el cual el profesional pone bajo análisis la importancia y la puesta en acto de los valores del consultante, a fin de acompañarlo en la construcción de un proyecto de vida auténtico y significativo

La definición anteriormente expuesta en referencia al Análisis Axiológico pone en evidencia la importancia medular de los valores en este proceso. Pero que es un valor?

Para sortear tal interrogante es oportuno introducir la definición desarrollada por Schwartz & Bilsky (1987) Para estos autores el valor es el concepto que tiene un individuo o persona de un objetivo (terminal-instrumental) transituacional, que expresa intereses (individuales, colectivos, o mixtos) concernientes a un dominio motivacional (placer, poder, benevolencia...) y que es evaluado en un rango de importancia (muy importante - sin importancia) como principio rector de su vida.

La definición arriba expuesta, pone en evidencia algunas cuestiones fundamentales que no hay que perder de vista a la hora de pensar el fenómeno de los valores.

- Los valores son objetivos: nos marcan un rumbo
- Los valores exceden la situación particular
- Los valores tienen jerarquías
- Los valores orientan nuestra conducta

Otro referencia ineludible a la hora de conceptualizar sobre valores es la de Milton Rokeach (1918-1988). Este autor sostiene hay básicamente dos tipos de valores. En principio están los valores terminales que son los que responden a las necesidades y al desarrollo de la existencia humana. Este tipo de valores se divide a su vez en dos. Por una parte los personales donde se puede ubicar a valores como autorrealización, felicidad, armonía, etc.; y por otra parte están los valores sociales que incluyen a valores como la seguridad nacional, la igualdad social, etc.

Por su parte, los valores instrumentales son un medio para alcanzar los fines de la existencia humana. O sea un medio para lograr expresar los valores terminales. También se dividen en dos. Los valores morales que contiene a valores como la honestidad, la responsabilidad y los valores de competencia donde se alojan valores como la eficacia, la creatividad, etc. (Rokeach, 1973).

Es de destacar como en ambas conceptualizaciones de los valores, la idea fundamental va en relación a que los mismos orientan la conducta individual, y que la expresión de los mismos constituye el proyecto de vida personal.

La escena social, la cotidianidad y el proyecto de vida

Es una cuestión evidente que la escena social promueve variables que funcionan como referencias, anclajes, límites y continente de cada persona. Estas van a ir delimitando el “estilo de vida”, o sea la forma de vivir, de cada persona. Y el estilo de vida en este siglo XXI en las grandes urbes parece conservar algunas características que son dignas de remarcar. A saber: la exacerbación individualista y egocéntrica en desmedro de las acciones de tipo cooperativistas, la alienación imperante en pos de una demanda “histórica” que nunca se satisface y que empuja al consumo, la velocidad y el apuro reinante hacia una carrera “alocada” con una meta no siempre elegida ni auténtica, y la falta de auto-reflexión que posibilite un cambio para re-encausar el proyecto de vida personal (Lanosa, 2013).

Resulta oportuno destacar como los medios y las nuevas formas de comunicación están poniendo de manifiesto una nueva manera de relación humana: la de los vínculos virtuales. Estas nuevas formas de vincularse y comunicarse parecen producir en una gran parte de la población urbana efectos colaterales, como ser la disminución de las vivencias personales, la pobreza comunicacional en los encuentros cara a cara, y hasta el aumento de las características ansiógenas en el ser del siglo XXI; el cual vive sumergido en una nueva realidad. La virtual.

En tal sentido es que el tratamiento psicoterapéutico puede funcionar como un soporte des-alienante de las variables sociales impuestas, apelando a la auto-reflexión desde una perspectiva auténtica y deseante, que permita construir un proyecto de vida significativo sobre una puesta en acto de valores.

La cuestión del proyecto de vida, es para la Psicología Existencial un tema fundamental a la hora de buscar la superación personal. Pérez Jáuregui (2009) define al proyecto de vida de la siguiente manera: “... *el proyecto de vida es una construcción dinámica que se va dando a lo largo de la vida, de una imagen de sí mismo y del mundo, expresivas del sentido y significado que va adquiriendo la existencia*” (Pérez Jáuregui, 2009, p.32).

Ahora bien, desde la fenomenología, lo cotidiano implica una experiencia no categorizada por el sujeto. Y entonces, ¿cómo se puede definir a la cotidianidad?

Una vez más, Pérez Jáuregui (2009) responde al interrogante antes planteado al decir que: “...*es la experiencia inmediata que los hombres tienen en un tiempo y espacio vividos acerca de sus relaciones con el mundo y con los otros. Se refiere, por lo tanto, a sus condiciones concretas de existencia*” (Pérez Jáuregui, 2009.p.15).

De tal manera que si la manifestación de valores cotidiana no está en sintonía con la escala jerárquica de valores que cada individuo posee, se puede afirmar que se estaría expresando un proyecto de vida inauténtico.

Por tanto, es función esencial de la Psicoterapia el acompañar al consultante en pos de re-encausar su proyecto de vida a partir de una revisión o análisis de la importancia asignada y la puesta en acto de sus valores.

Los valores transculturales

Una de las instancias más sobresalientes y fundamentales en lo que refiere al estudio del fenómeno axiológico y que se toma como referencia para este trabajo, es la propuesta de Shwartz (1992, 1994, 2001).

Este teórico e investigador especializado en valores, realizó un estudio en más de 40 países, donde encontró que había diez valores que se replicaban en todas las culturas estudiadas.

Para este autor, los valores representan las respuestas que las personas y los grupos deben dar a 3 requisitos universales: (a) las necesidades de los individuos en su condición de seres biológicos, (b) la coordinación de las acciones sociales y (c) el funcionamiento correcto y la supervivencia de los grupos (Schwartz, 1994).

Los diez valores transculturales descubiertos por Schwartz (1994) son los valores de poder, logro personal, hedonismo, universalismo, benevolencia, auto-dirección, estimulación, tradición, seguridad y conformidad.

Ahora bien, estos valores se hallan a su vez relacionados y pueden tener consecuencias psicológicas, prácticas y sociales que pueden entrar en conflicto; por ejemplo, llevar a cabo conductas relacionadas con los valores de logro, pueden entrar en conflicto con el valor benevolencia. Así, los valores forman un circuito de motivaciones relacionadas, donde la persona manifiesta sus valores dándole un **sentido** determinado al curso de su vida (Schwartz, 1994).

Vale agregar que si bien el proceso del Análisis Axiológico toma el trabajo de los valores transculturales de Shwartz (1994), incluye también dos variables más por considerarlas a estas como referencias fundamentales y guías a la hora de orientar la conducta de los individuos. Estas dos variables son los valores de la espiritualidad que aluden a o Uno y lo divino, y el amor que supone un objetivo de máxima para llevar adelante una vida significativa.

La técnica del Análisis Axiológico

La primera parte de este proceso apunta a verificar que valores son los que manifiesta con frecuencia el consultante.

A tal efecto es que se dispone de un cuestionario “Puesta en Acto de Valores Personales”, el cual está diseñado con el soporte del PVQ de Shwartz, pero que no busca medir la identificación de los diez valores transculturales, sino de revisar la puesta en acto de esos diez valores

transculturales, sumados a los los valores de espiritualidad y del amor. A modo de ejemplo:

	Con mucha frecuencia	Con frecuencia	Algunas veces	Pocas veces	Casi nunca	Nunca
En mi vida suelo ayudar a la gente que me rodea.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tengo ideas nuevas y suelo expresar mi creatividad.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Lo que sigue a continuación de este cuestionario que permite conocer la manifestación de valores personales en el consultante, es identificar el nivel de importancia que el consultante le asigna a cada uno de los valores. A tal efecto es que primero se le brinda al consultante la información pertinente (Psicoeducación) sobre cada uno de los valores que sostienen este proceso, para luego solicitarle que asocie este valor con una actividad que realice o conozca. A modo de ejemplo:

- ¿Qué tan importante es para Ud. gratificarse? Fundamente y ejemplifique con alguna/s actividad/es por favor.
- ¿Qué tan importante es para Ud. el contacto con la naturaleza? Fundamente y ejemplifique con alguna/s actividad/es por favor.

Posteriormente a la importancia asignada a cada uno de los valores, se busca conocer como está organizada la semana del consultante a nivel actividades, a fin de que este pueda dar cuenta de las actividades necesarias e importantes que realiza cotidianamente. Este paso es fundamental para conocer la capacidad de maniobra a la hora de promover cambios superadores en el consultante.

Como primer paso se pide al consultante que complete una grilla con sus actividades. A modo de ejemplo:

Revisando la manifestación cotidiana

	Lunes	Martes	Mierc	Jueves	Viernes	Sab	Dom
8 horas							

Luego y en función a sus actividades se le propone que piense cuales son necesarias y cuales importantes.

- ¿Qué actividades que realiza en la semana considera necesarias?
- ¿Qué actividades que realiza en la semana considera importantes?

Por último y luego de obtener la información sobre la manifestación cotidiana de los valores desde el Cuestionario P.A.V (Puesta en Acto de Valores), el nivel de importancia asignado a los mismos y la revisión de las actividades cotidianas en el consultante, se busca interpelar al mismo para “afinar” el nivel de importancia asignado a cada uno de los valores, con su

manifestación cotidiana. A modo de ejemplo va un ítem del último de los cuestionarios “Promoviendo cambios”:

- A Ud. le parece importante gratificarse en la vida. Sin embargo no parece que lo pueda hacer con buena frecuencia. Entonces: ¿Considera que tal falta de gratificación influye en su vida? ¿De qué manera? ¿Podría pensar, acorde a sus posibilidades, en cómo suplir esa falta?

Este cuestionario apunta a cerrar el proceso para la toma de conciencia por parte del consultante de qué valores le parecen importantes, con qué actividades se asocian, qué expresión hace de esos valores y cómo puede lograr una puesta en acto superadora.

Conclusión

Se ha introducido este trabajo haciendo referencia a la importancia que tienen los valores en la conformación del proyecto de vida personal.

Durante el desarrollo se conceptualizó sobre la idea de valores, dejando en claro que son estos los que orientan la conducta de las personas.

Así mismo se planteó que la manifestación de los valores personales se da dentro de una escena social determinada, y que en este siglo XXI y en lo que hace a los grandes centros urbanos tiene connotaciones particulares que van desde cambios en los medios y en las formas de comunicación, hasta una nueva forma de vincularse: los vínculos virtuales. Todo bajo el vértigo que implica la brutal velocidad que los tiempos proponen. Esta escena que resulta de las cuestiones antes descritas, delimitan la forma de expresión o el estilo de vida de cada sujeto.

Las formas sociales son condicionantes y continentes de la manifestación personal cotidiana, pero no son determinantes en la conformación del proyecto de vida, el cual se va conformando a partir de la manifestación de valores, y el cual puede ser revisado, re-significado y re-encausado en pos de la superación personal. Esto implicaría una posición nueva y elevada. Una postura ética.

Y es aquí donde la Psicoterapia tiene un nuevo y gran desafío que no es otro que brindar su cobijo ante la brutal demanda cotidiana, metiendo una pausa que invite a la auto-reflexión y que permita un salto cualitativo en el consultante.

Por tanto es deseable que la psicoterapia como espacio habilitante para la superación individual y vincular, tome conciencia de la trascendencia que implica el poder revisar la cuestión de los valores con el/los consultante/s, y en este sentido es que se propone al “Análisis Axiológico” como proceso estandarizado significativo en la Psicoterapia.

References:

- Frankl, V. (1983). *La psicoterapia al alcance de todos*. Barcelona: Herder.
- Frankl, V. (1988). *La Voluntad de Sentido*. Barcelona: Herder.
- Frankl, V. (1990). *Ante el vacío existencial*. Barcelona: Herder.
- Frankl, V. (2000). *Fundamentaciones y aplicaciones de La Logoterapia*. Buenos Aires: San Pablo.
- Frankl, V. (2001). *El hombre en busca de sentido*. Barcelona: Herder.
- Fromm, E. (2002). *El arte de amar*. Buenos Aires: Paidós.
- Fromm, E. (2008). *La vida auténtica*. Buenos Aires: Paidós.
- Lanosa, H. (2013). *Valores y proyecto de vida*. Buenos Aires: UFLO.
- Martínez Ortiz, E. (2009). *Buscando el sentido de la vida*. Bogotá: Colectivo Aquí y Ahora.
- Pérez Jáuregui, I. (2009). *Proyectos de vida: La pregunta por el sentido en nuestra experiencia cotidiana*. Buenos Aires: Psicoteca.
- Rokeach, M. (1973). *The nature of human values*. NY: Free Press.
- Schwartz; S & Bilsky; W. (1987). *Toward a universal Psychological Structure of Human values*. *Journal of Personality and Social Psychology*, vol. 53, 550-562.
- Schwartz, S. (1992). *Universals in the content and structure of values*. New York: Academic Press.
- Schwartz, S. & Sagie, G. (2000). *Value consensus and importance: A cross national study*. *Journal of Cross-Cultural Psychology*, 31 (4), 465-497.
- Schwartz, S. (2001). *¿Existen aspectos universales en la estructura y contenido de los valores?* Madrid: Biblioteca Nueva.
- Schwartz, S. (2011). *Cultural and Individual*. *Fundamental questions in cross-cultural psychology*. (pp. 463-493). xii, 590 pp. New York, NY, US: Cambridge University Press; US.
- Schwartz, S. (2012). *Studying values: Personal adventure, future directions*. *Source Journal of Cross-Cultural Psychology*. Vol.42 (2), Mar 2011, pp. 307-319.

IER. CONGRESO PANAMERICANO DE INTERDISCIPLINA

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Abstract

Over 2000 clinical cases related to early suicidal decisions were studied at the Private Institute of Clinical Psychology. A greater majority of such cases occurs during childhood under parental influences, which was generally non-verbal. In this paper, the preventive value was stressed

Keywords: Suicidal decision, childhood, prediction, prevention

Resumen

Se describen las experiencias clínicas en el Instituto Privado de Psicología Médica (más de 2000 casos), vinculadas con la decisión de no vivir, verificándose que en su inmensa mayoría se toman en la infancia, bajo la influencia de mensajes parentales generalmente no verbales. Se destaca el valor predictivo y por ende preventivo de estas observaciones

Palabras clave: Decisión suicida, infancia, predicción, prevención

Observaciones clínicas en el Instituto Privado de Psicología Médica (IPPEM)

En más de 2000 casos atendidos en el Instituto de Psicología Médica (IPPEM) desde 1970, se detectaron ideas o comportamientos que fluctuaban entre el deseo de no seguir viviendo, conductas de riesgo en cuanto a posibles accidentes o incidentes, descuido grave de la salud, hasta la ideación suicida y planes concretos de suicidio.

Al investigar su origen se detectó que en la casi totalidad de los casos, la decisión de no vivir se tomó en la infancia bajo la influencia de mensajes parentales, generalmente no verbales llamados “mandatos” en la terminología del Análisis Transaccional (Berne, 1964, 1974) o de modelos

autodestructivos en la familia (Kertész, R. Atalaya, C. y Kertész, A., 2003). Estas observaciones clínicas nos resultaron de alto valor **predictivo** y por ende **preventivo** y ante la importancia de las mismas, decidimos ampliar su carácter empírico con un estudio de campo, aplicando metodología de la investigación como tema central de nuestra Tesis de Doctorado en Psicología, carrera que la autora cursa en la Universidad de Flores.

Es impactante que en alrededor del 50% de las entrevistas de admisión en el IPPEM se detecta el desinterés por seguir viviendo, por lo menos en las condiciones actuales del paciente y sería de interés ampliar este dato estadístico a otras muestras de poblaciones en nuestro país y en otros en estudios futuros. Dicho desinterés podría ser un indicador de baja calidad de vida emocional, social y vocacional, dado que el nivel económico de estas personas es correspondiente en su gran mayoría a la clase media.

Funciones de la familia

Entre las funciones propias de la familia como institución social, la económica y la de perpetuación de la especie representan una tradición importante; pero se considera primordial la función afectiva, ya que en el marco familiar es donde se brinda el amor y la seguridad necesarios para la formación de los sujetos, lo cual les aporta una autoestima adecuada y los prepara para una incorporación a la sociedad.

La naturaleza de la relación interpersonal es un factor clave del desarrollo del infante en la familia. Ésta sigue siendo el núcleo esencial de la constitución de la personalidad de los niños. Gran parte de los vínculos que enlazan a los integrantes de una relación se inician con la capacidad de experimentar y expresar toda una gama de emociones, de sentir la libertad de dar y recibir afecto y cuidados, de pedir y/o recibir apoyo emocional en situaciones de estrés o sin él, así como de la capacidad de establecer y mantener relaciones afectivas, profundas y duraderas.

Éstas son vitales para el ser humano. Esta consolidación e integración de habilidades sociales a través de las cuales se pretende mantener o fomentar la proximidad, en un espectro que va de nula o total cercanía, con el otro miembro de la relación, recibe el nombre de *apego (attachment)* (Ojeda, 2003).

Las relaciones afectivas con aquellas personas que se encargan de la satisfacción de las necesidades emocionales y fisiológicas del bebé durante los primeros meses de vida extrauterina, llamadas “*figuras de apego*”, moldean sus diferentes modalidades, de acuerdo a Bowlby (1958) y Ainsworth (1973). Este tipo de vínculo actúa como plataforma para el desarrollo de una autoestima positiva, así como de las competencias sociales posteriores. La vivencia de apegos afectivos

seguros facilitará al niño las conductas de exploración y de intercambio, que constituirán la base a partir de la cual adquiera un sentimiento de tranquilidad y autoconfianza para descubrir y aprender, lo cual fue también estudiado por Erik Erikson (1950, 1959)

Con esta finalidad es necesario que se cubran con calidad las necesidades de contacto físico, así como que se satisfagan otras biológicas, como las de necesidades de alimentación y cuidado. Las figuras de apego deben tener la capacidad de interpretar adecuadamente las demandas y necesidades del niño. El contacto constante, la presencia y la disponibilidad de las mismas brindan al niño la sensación de seguridad necesaria para que aparezca en él la *confianza básica*, construyendo un modelo interno de relaciones con los demás basado en la disponibilidad y el amor.

Para esto, resulta importante la forma en que las madres y los padres se comunican con el bebé y en las etapas subsecuentes de su vida. Una persona que tenga experiencias positivas, especialmente desde su niñez, y principalmente provenientes de sus figuras de apego es más probable que perciba la vida como positiva o deseable. Claro está que los comportamientos parentales hacia los hijos dependen en gran parte de lo que se haya recibido de sus propios padres.

Todos recibimos educación familiar, escolar y social , a través de las cuales tomamos decisiones y generamos creencias para constituir nuestro marco de referencia , nuestra identidad forma de pensar, imaginar , sentir, actuar y en síntesis, de vivir, todo lo cual está contenido en lo que Berne estableció como “*Argumento de vida*” (*life script*), “*un plan o programa concebido en la infancia en base a influencias parentales y luego olvidado o reprimido ,pero que continúa sus efectos y que dirige la conducta del individuo en los aspectos más importantes de su vida*”.El mismo suele generarse entre el nacimiento y los 6 a 8 años.

El Argumento de vida responde a las tres preguntas existenciales esenciales que formuló Berne:

Quién soy?

Qué hago en este mundo?

Quiénes me rodean?

El fundamental aporte del Argumento, encarado por su autor como propio del individuo y reemplazando a la idea mágica de “destino”, fue ampliado por Kertész y Atalaya (1991, 2003), a través de un enfoque sistémico de observación de las interacciones de varios centenares de familias, arribando a la concepción del *Argumento familiar*, compartido por los miembros de las familias. De acuerdo al mismo, los cambios son interactivos y cuando existen roles fijos, al abandonar un rol un integrante, éste tiende a ser asumido por otro (el de adicto, violento, abandonado,

fracasado, etc.) Una forma de mantener dichos roles fijos, aunque sean positivos, es llamar a hijos o nietos con el mismo nombre de sus ancestros.

El concepto de supervivencia social

En la teoría del Análisis Transaccional (Berne, 1964) las “*caricias*” (*strokes*), son las *unidades de reconocimiento social*. Kertész et al. (2003) las definen como “*estímulos de un ser vivo a otro que reconocen la existencia de éste*” .Amplían a los emisores de dichos estímulos abarcando a seres vivos no humanos, como los animales domésticos, que en muchos casos suplen al afecto inexistente de los humanos.

Sin “caricias” el niño no existe como ser social, aunque logre seguir vivo, haciéndolo biológicamente...porque en ese sentido, existimos en función de nuestros vínculos con los demás. Se ha demostrado que los bebés que no son tocados o acariciados tienden a sufrir afecciones tan graves como el marasmo, llegando a la misma muerte.

Las expectativas familiares determinan las **condiciones de supervivencia social de los hijos**, es decir, qué se espera de ellos para que reciban el reconocimiento de su existencia. Dichas condiciones son transmitidas por las conductas verbales y no verbales de los padres y otras figuras relevantes de la historia de cada individuo en forma de “*mandatos*”(*injunctions*), las internalizaciones de los mensajes parentales, generalmente no verbales.

Frecuentemente, lo que los progenitores o sus sustitutos *dicen*, no coincide con lo que *hacen*, generándose así dobles mensajes que producen una especie de “trance hipnótico” en su descendencia.

Cuando preguntamos a nuestros pacientes / clientes, “*Qué cree un hijo, lo que ve o lo que oye?*” invariablemente la respuesta es “*Lo que ve*”, porque esto refleja la realidad de las conductas físicas observables. Sin embargo, muy tempranamente esa criatura aprende a descalificar lo que observa y a creen en lo le dicen. De otra forma, sería insoportable su vida en tal tipo de familia.

Por ejemplo, un hijo pregunta a la madre: “*Mami, por qué no te quiere papá?*” (notando que no existe acercamiento físico entre ellos). La madre responde, enojada: “*Claro que me quiere! De dónde sacaste esa idea!*” Luego de varias interacciones de este tipo, el chico internaliza esa frase, junto con el “mandato” “No pienses” , y así obtiene una convivencia tolerable. Claro está que tenderá a repetir esta disonancia cognitiva en etapas posteriores.

Una frase de padres de solterones que oímos frecuentemente es “ *El día en que te cases, podré morir tranquilo / a* ” , lo cual induce a un “ doble vínculo” como lo expresaba Bateson:

- Si no se casa, mantiene intranquilo o infeliz a su progenitor, y el permanecer soltero / a es considerado como una conducta voluntaria, caprichosa y rebelde:

- Si se casa, produce la muerte de su progenitor /a.

Claro está que si a pesar de este hipnosis, logra concertar una pareja estable, puede surgir un nuevo mensaje: “ *Me vas a dejar solo / a?...* ” o bien críticas sistemáticas hacia el posible cónyuge.

También suele oírse que “*El día en que se gradúen*” algún padre morirá tranquilo / a... produciéndose así estudiantes crónicos.

Es interesante mencionar que dichos mensajes dobles suelen ser inconscientes tanto para los emisores como los receptores, aunque existen excepciones.

Una pregunta clave que se puede formular a un persona es : “*Qué tenía que hacer de chico para que se ocupen de Ud.?* ” , es decir, para recibir “caricias”. Éstas pueden ser placenteras y positivas, como los abrazos, besos, palabras de afecto, sonrisas. O bien, negativas y displacenteras, como los gritos, golpes, miradas de rabia, o bien expresiones de lástima, las cuales en forma paradójal Berne llamó “*caricias negativas*”. Y expresó que “*Es mejor ser agredido que ignorado*” o también, con su humor ácido, “*Es preferible tener mal aliento que ningún aliento*” ...y esto es lo que intuyen y aprenden muchos niños es los primeros años. En edades posteriores lo siguen repitiendo, al haberlo incorporado en su Argumento de vida.

No es que los progenitores le indiquen verbalmente que se porte mal, se rebele o ser enferme. Es que se ocupan de él /ella, en estos casos, solamente o preferentemente cuando emite dichas conductas autoagresivas, porque es lo que pueden hacer acorde a sus propios Argumentos, que al convivir, articulan al Argumento familiar..

Así, cumpliendo sus “*mandatos*” , un niño se adapta al ambiente que lo rodea y toma decisiones que tienden a mantener en su vida generando situaciones similares a las de su infancia. La sabiduría popular ha formulado esto en frase como “*La tapa y la olla*”, “ *Tal para cual*”, etc. y los cuentos populares, así como los mitos, dramatizan diversos tipos de Argumento (Berne, 1974)

A veces es impactante percibir cómo una pareja percibe sus “ programas” complementarios desde los primeros momentos de su encuentro.

“*El grupo familiar requiere que su descendencia se adapte a su marco de referencia. Con ese fin refuerza sus conductas, pensamientos y emociones afines, ignorando o castigando desviaciones. Los niños saben o intuyen, así, que se espera de ellos y se ajustan lo mejor que pueden, incluso*

a costa de su bienestar, salud o hasta la propia vida, internalizando los “mandatos” parentales que serán los ladrillos del edificio argumental” (KertÉsz et. al., 2003)

Las condiciones de supervivencia social en base a las expectativas y mensajes parentales

<p><i>1.Vive (incondicional):</i></p>	<p>En países más desarrollados, estimamos al 10-20% de la población en esta condición</p>	<p>El nacimiento del niño es deseado, los padres fueron queridos por sus propios padres, quienes lo demostraban, y les proveían caricias “incondicionales” por el sólo hecho de existir y además condicionales positivas por éxitos o logros. Además, los progenitores tienen sus necesidades satisfechas y no necesitan compensar sus carencias a través de sus hijos</p>
<p><i>2.Vive(mientras...: Te quedas conmigo, no me superes, dependas de mí, seas mi orgullo, me mantengas, estés enfermo, me diviertas, etc.) (Si renuncias a.....)</i></p>	<p>Alrededor del 60-70% estimado</p>	<p>Los padres o sustitutos sufren carencias o insatisfacciones, que tienen a compensar mediante sus hijos (soledad, problemas económicos, frustración vocacional, resentimientos sociales, necesidad de reconocimiento, rivalidad, etc.) Las caricias o estímulos sociales son otorgadas en función de los comportamientos infantiles o posteriores que compensen las carencias parentales.</p>
<p><i>3.No Vivas (incondicional)</i></p>	<p>5- 10% (es mucho mayor en países subdesarrollados)</p>	<p>Los progenitores no querían que el hijo nazca ; deseaban que tenga al otro sexo, le dirigen el odio no resuelto hacia algún familiar previo o bien necesitan que muera para seguir ellos vivos</p>

Esto no implica buscar culpables entre los progenitores o sus sustitutos, quienes en la inmensa mayoría de los casos no son conscientes de sus influencias negativas. Como lo expresó una paciente, madre de un adicto grave internado que consumía la droga llamada “éxtasis” : “ *Somos víctimas de víctimas...*”

Generalmente el que concurre a la psicoterapia es un hijo o hija con problemas psicológicos , encuadrados dentro de la segunda o tercera categoría, pero al detectar las influencias familiares no es adecuado presentarlas en forma abrupta o directa, sino gradualmente e involucrando al resto de la familia de algún modo.

Para la mayoría de los padres resulta inaceptable su participación en los síntomas de los hijos, y requiere mucho tacto y un enfoque indirecto, como el del gran psicoterapeuta Milton Erickson, la inducción de cambios. Cuando los que consultan son personas adultas, es más accesible impartirles estos conocimientos, pero siempre en un encuadre de por lo menos tres generaciones: “*Sus padres también tuvieron padres, etc.*”

Dentro de los “mandatos” podemos diferenciar diferentes grupos de influencias. El mensaje de no vivir puede ser transmitido en familias que viven un clima de desamor, desconfianza y rechazo.

El niño siente la falta de atenciones, de higiene, de alimento adecuado. La carencia mayor es la no presencia o falta de afecto de su madre u otras personas significativas para él. combinada o no con comportamientos rechazantes y fuertemente agresivos.

No reconocer al niño o reconocerlo con falta de tacto o con violencia, mirarlo con una expresión fría u hostil, ver en el niño una imagen reflejada que no le corresponde, reírse de él cuando sufre o tiene miedo, ridiculizarlo delante de otras personas, no permitirle que se manifieste sencillamente como un niño y otras conductas similares provocarán una situación de desequilibrio. Inicialmente el pequeño lucha por conseguir lo necesita. Es la etapa que Berne llama del “príncipe triste” o “princesa triste”, por mantener que “*todos nacemos princesas y príncipes, aunque a algunos los progenitores les transformen en sapos*”.

Cuando esa “princesa o príncipe” potencial no puede luchar más y depone sus necesidades auténticas, se adapta a dichos “mandatos” que le posibilitan la supervivencia social, aunque uno de ellos sea el de “*No vivas!*”

Aunque sea difícil de aceptar, hay padres que desean conscientemente la muerte de su descendiente y así se lo dicen o hasta lo matan. Otros los abandonan. Pero otros no desean esto. Simplemente no les enseñan a cuidar su salud y bienestar, por falta de formación y a menudo dando sus propios modelos autodestructivos:

- Corriendo en vehículos a gran velocidad (con lo cual pueden herir o matar a otros también), o manejando alcoholizados (esto se lee frecuentemente en los diarios, especialmente en el caso de chóferes de larga distancia)

- . Practicando deportes de mucho riesgo

- . Descuidando su salud (obesos, fumadores, otros adictos, mediante falta de ejercicio o control médico, etc.

- Trabajando sin límite y sin descanso

- Asistiendo a lugares peligrosos o emitiendo comportamientos desafiantes o provocativos

La decisión paradójal de “no vivir” para poder seguir vivo y soportando

En un futuro podremos encontrar a un adulto “encarcelado”, dentro o fuera de la prisión que tuvo en ese pasado. El niño puede interpretar: *¿Para qué vivir una vida en la que no se me acepta? “Mejor es acabar cuanto antes con ella”*. En su cerebro y en su corazón está oyendo “No vivas, muérete”. **Paradójalmente , esto le permite sobrevivir** anta situaciones intolerables en la infancia, pensando en el alivio de desaparecer, pero postergando la ejecución para etapas posteriores de la vida.

A su vez esto genera creencias disfuncionales, a través de las cuales se interpretan eventos vitales traumáticos de un modo acumulativo para confirmar la decisión de muerte. *“Siempre existe un variable grado de libertad de decisión, cuyo margen depende de la intensidad y malignidad de los mensajes parentales que moldean al niño” (Kertész, et al.,2003)*

Al preguntar al paciente si en su infancia pensó en no vivir o mediante técnicas de regresión se arriba al momento de la decisión suicida, puede llegarse a una **redecisión** con el objetivo de **vivir bien**, opción no disponible en la etapa formativa. De esa forma, superar la opción de **morir para no vivir mal**.

Así, efectuamos una acción preventiva a partir de la información lograda con el diagnóstico del origen **infantil de la decisión**.

Todo esto puede ser de utilidad para padres, educadores y distintos profesionales de la salud, que estarían así más capacitados para detectar prematuramente a aquellos candidatos a la realización de un acto suicida y evitar que esto ocurra.

Además, se intenta contribuir a interpretar el suicidio como un suceso que tiene su historia y que contrariamente a lo que se piensa, no ocurre generalmente por impulso o por un estímulo actual, sino que es más bien una decisión largamente pensada, analizada, desecheda y retomada en múltiples ocasiones, no sólo de manera conciente sino también inconscientemente, para poner fin a una vida.

La técnica de la redecisión

Mediante dicha técnica, se invita al cliente a relajarse, cerrar los ojos y que su mente inconsciente (en el sentido de Milton Erickson), lo transporte a un momento de su infancia (algunas veces de la adolescencia) en el cual decide no vivir más. Esto implica un variable grado de trance, un estado de conciencia en el cual suele activarse el estado del Yo Niño (Berne, 1964) en el cual residen los influjos del Argumento de vida. Y al volver al contexto traumático del cual quiere huir , hacia la muerte, se le brinda protección e información racional explicando que muchas personas pasan por situaciones traumáticas como esa , que la familia no representa a todo el mundo, que sus figuras parentales también padecen problemas y poseen limitaciones, y se le

ofrecen otras opciones para evaluar dicha situación y hacerse cargo de su propia vida.

Al lograrse la **re- decisión** de una nueva vida gratificante, se proyecta la misma hacia etapas subsiguientes del ciclo de vida, llegando al momento actual y otros futuros, para lo cual establecemos objetivos verificables en las distintas áreas (mental y corporal) y roles fundamentales del cliente (pareja, familia, trabajo, estudio, tiempo libre).

Convenimos en cada uno de ellos metas motivadoras que refuercen el deseo de vivir.

Una vida que pueda salvarse representa un valor inapreciable

References:

- Ainsworth, M. *“The development of infant- mother attachment”*. Chicago University Press, 1973.
- Bandura, A.: *“Social foundations of thought and action”* . Prentice-Hall, Englewood Cliffs, Nueva Jersey, 1986.
- Berne, E.: *“ Los juegos en que participamos”*. Diana, Méjico, 1964
- Berne, E. *“Qué dice usted después de decir hola?”*. Grijalbo, Barcelona, 1974.
- Bowlby, J. *“The nature of the child’s tie to his mother”*. International Journal of Psychoanalysis. 1958.
- Erikson, Erik H. *Childhood and Society*. New York: Norton, 1950.
- Erikson, Erik H. *Identity and the Life Cycle*. New York: International Universities Press, 1959.
- Kertész,, R. y Atalaya, C._ *“ MAPA: Cuestionario de conductas parentales”* Ippem, Buenos Aires, 1991
- Kertész,, R., Aralaya, C. y Kertész,. A: . *“Análisis Transaccional Integrado”* 3ª edición, Editorial de la Universidad de Flores, Buenos Aires, 2003
- Toro Martinez, E. y Rudelir, M. *“Evaluación del riesgo suicida: aspectos clínicos y médico-legales de la peligrosidad para sí”*. Vértex, Revista Argentina de Ppsiquiatria, N° 61, volumen 16, 2005.
- Ojeda; A. *“Consecuencia del apego en la pareja, Prediciendo la satisfacción marital”* Tesis de Doctorado en Psicología Social. Facultad de Psicología, UNAM, Méjico, 2003.

EL PSICODIAGNÓSTICO DE LOS PROBLEMAS DE APRENDIZAJE DESDE UN ENFOQUE MULTIMODAL

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Abstract

Learning problems are described with the Multimodal Model of Arnold Lazarus. Its usefulness is considered for Psychodiagnosis, affording a holistic and thorough study of all possible alterations in learning, as well as that of the individual analysis. A case study that exemplifies its importance in personality assessment, therapeutic results, and the integration of other techniques used in child psychodiagnosis was included.

Keywords: Psychodiagnosis, Multimodal Model, Learning Problems

Resumen

Se describen los problemas de aprendizaje a través del enfoque Multimodal de Lazarus. Se indica la utilidad de incluir este instrumento de investigación en el psicodiagnóstico, tanto por permitir hacer un análisis global y exhaustivo de todas las alteraciones posibles en el aprendizaje; como por posibilitar el análisis individual de casos particulares. Se incluye una casuística que ejemplifica su importancia en la evaluación de la personalidad, en los resultados terapéuticos y en la integración de las demás técnicas utilizadas en el psicodiagnóstico de niños.

Palabras clave: Psicodiagnóstico - Enfoque Multimodal - Problemas de Aprendizaje

Como psicóloga clínica y pedagoga con orientación en Psicodiagnóstico, dedicada en gran parte a los problemas de aprendizaje, me propongo presentar lo que considero un instrumento práctico que permita hacer un psicodiagnóstico completo y simple de aquellos pacientes que presentan dificultades en el aprendizaje. Tarea por demás de difícil teniendo en cuenta la complejidad causal de este tipo de trastornos.

Hoy considero una opción valiosa el “Enfoque Multimodal de A. Lazarus” (Lazarus, 1983) puesto que proporciona un modelo comprensivo para la evaluación y la terapia. Además permite al terapeuta cuestionarse permanentemente la efectividad de la práctica aunque evita clasificaciones como las etiquetas diagnósticas o categorías nosológicas.

El modelo al que recurre para una evaluación de la personalidad posee siete variables o modales: Biológico, Afectivo, Sensaciones, Imágenes, Cognoscitivo, Conductas y Social (B.A.S.I.C.Co.S.). Si bien éste autor no estudió específicamente la clínica del aprendizaje, considero que su esquema diagnóstico puede completar nuestra tarea de psicodiagnosticadores.

Primero definiremos Problemas o trastornos de Aprendizaje, como todo aquel emergente, síntoma, alteración o variable que sitúa al sujeto sustancialmente por debajo de lo esperado, dada su Edad Cronológica, su Cociente Intelectual y la escolaridad propia de su edad; o que interfieren significativamente el rendimiento académico.

A partir de esta definición voy a describir las posibles alteraciones de cada uno de los siete modales del B.A.S.I.C.Co.S. con el objeto de encontrar un instrumento organizador para evaluar en forma detallada y completa aquellos elementos de la personalidad que inciden en las alteraciones que se producen en el proceso de aprendizaje.

Modal biológico

El modal Biológico se refiere al organismo. Dieta, peso, altura, edad. Enfermedades previas y actuales, antecedentes nosológicos y hereditarios. Medicamentos ingeridos, accidentes sufridos y repercusiones físicas, intervenciones quirúrgicas, insomnio, etc.

Por lo tanto, tomamos al cuerpo como infraestructura y consideramos las variables neurofisiológicas y madurativas del sujeto que nos consulta. Comprendería todos aquellos trastornos cuyas causas están en el S.N.C. que tiene a cargo la coordinación de los órganos comprometidos con la manipulación del entorno. (Rossi, 1990)

En este nivel puramente fisiológico de los procesos de aprendizaje, de la actividad fisiológica de los sectores superiores del S.N.C. que sustentan las praxias, las gnosias y el lenguaje; los síntomas en la patología suelen ser similares a los errores que los niños cometen a lo largo del proceso de aprendizaje con la diferencia que los patológicos se estabilizan mientras que los otros son fugaces.

En este punto es fundamental el trabajo en equipo con el pediatra, neurólogo y/o neuropsicólogo, endocrinólogo, etc. Dado que comprendería la sintomatología asociada a medicamentos que afectan los aprendizajes y las L.C. debido a causas genéticas, prenatales, perinatales o postnatales; así como también las diferentes patogenias: gnóstico-práxicas (cuando no logra

el nivel funcional de gnosias visuo y temporoespaciales o praxias manuales), afásicas (por deficiencias analíticas-sintéticas del analizador verbal), y anártricas (bajo nivel funcional del analizador cinestésico-motor-verbal), metabólicas, glandulares, alimenticias, enfermedades crónicas, infecciones, trastornos en el área perceptiva-motora (lateralidad, etc.). (Azcoaga, J. et als,1997).

Modal afectivo

El modal Afectivo cubre las emociones (el significado subjetivo y sentido que uno le da a la experiencia). Tenemos en cuenta las emociones auténticas (alegría, afecto, miedo, enojo, tristeza) y sustitutivas o “rebusques” (ansiedad, culpa, vergüenza, fobias, depresión, envidia, celos, odio, etc.) (Kertész, R. 1997).

Aquí es conveniente diferenciar que tipos de emociones despertó el ingreso a la escuela o cualquier otro tipo de aprendizaje anterior como el control de esfínteres, el alimentarse, etc. Las ansiedades persecutorias en relación al crecimiento asociado a la muerte o a la independencia y la soledad que el conocer conlleva, alteran en calidad y cantidad al aprendizaje. La vergüenza o temor al ridículo, la confusión en la identidad y el ser por contraposición, los celos y el odio hacia el que aprende, la envidia propia y el temor a la envidia que despierta al otro el poseer conocimiento, etc. pueden impedir el aprendizaje.

Sensaciones

Este modal se refiere a la información que llega a través de los órganos de los sentidos, aún antes de ser interpretada. Sensación física es la percepción de los cambios en el funcionamiento corporal (dolores, contracturas, dificultad para respirar, fatiga, acidez, sudoración, etc.) También tenemos en cuenta los estímulos sensoriales que le pueden agradar o no.

En el aprendizaje puede influir todo déficit en los órganos de los sentidos que impida la adquisición de datos como también la calidad y cantidad de estímulos recibidos desde el nacimiento. Las condiciones de abrigo y comodidad, etc.

Estaría en relación al entorno material, la cantidad y calidad de los estímulos que constituyen el campo de aprendizaje y a la propia percepción del sujeto de su funcionamiento corporal. (Azcoaga, J. et als,1997).

Imágenes

Las imágenes son representaciones mentales de los datos de los sentidos (visuales, auditivas, kinestésicas, olfativas, cenestésicas, gustativas).

Se pueden dar como imágenes mnémicas, oníricas, de la fantasía etc. Están localizadas en el hemisferio cerebral derecho.

Aquí incluimos aquellos trastornos en la conservación de los datos (hábitos-memoria) o los asociados a la imagen corporal, a la imagen educativa del maestro y del propio niño como alumno o con respecto a su propia capacidad de aprendizaje, etc. (Rossi, 1995). Cuando el aprendizaje está asociado a imágenes de frustración, de pérdida, de soledad, rivalidad o por el contrario de completud donde no es necesario aprender, probablemente tenemos un rendimiento escolar disminuido.

Cognitivo

El modal Cognitivo se refiere a las ideas, creencias, valores, diálogos internos, toma de decisiones. Aquí analizamos el contenido y el proceso de elaboración de las cogniciones (localizadas preponderantemente en el hemisferio izquierdo). Es decir, las ideas que el sujeto tiene sobre su propia capacidad de aprendizaje tales como: “No sirvo...todo me cuesta más...tengo mala suerte... Es fácil... estudiar no sirve para nada...etc.” Las dudas al tomar decisiones que se le presentan cuando debe seleccionar conceptos para responder a una consigna, por ejemplo.

Las distorsiones cognitivas (estudiadas por Beck, 1979) o desvíos sistemáticos en la forma de procesar el conocimiento que derivan frecuentemente en bajo rendimiento académico pueden ser: el pensamiento de todo o nada, la catastrofización, magnificar lo negativo/minimizar lo positivo, inferencias arbitrarias, sobregeneralización, etc.

Luzuriaga (1972) menciona contraprosos de conceptualizar, juzgar y razonar que lleva al individuo a actuar con graves deficiencias para adquirir los datos de la realidad, conservarlos y /o elaborarlos. Esto nos es manifestado en la consulta como desatención, desinterés, aburrimiento, búsqueda extenuante, olvidos o acopios de información que llevan a no comprender, hasta la despersonalización, la negación de la realidad o su intelectualización.

Por ejemplo, la creencia de que “aprender significa crecer”; frecuentemente suele sostener serias dificultades en el aprendizaje, pues aprender se transforma en algo peligroso al acercarnos a la vejez y muerte propia o de nuestros seres queridos.

Las creencias nucleares o más profundas del sujeto que hace sobre sí mismo, el mundo y las personas que lo rodean se forman en el seno de su familia. Por eso, es muy importante indagar sobre lo que piensan y sienten los padres del niño acerca de las dificultades que atraviesa así como también acerca de su propia historia de aprendizaje escolar. Finalmente todo esto dará lugar a alguna conducta: Pienso y veo; luego siento y hago (Kertész, R. 1997)

Conducta

Aquí nos referimos a la conducta observable y objetiva. Estaría lo que hacemos o decimos, las estrategias o esquemas conductuales de cada persona. Incluiría las producciones gráficas y verbales del niño o el “no hacer”.

Las conductas perturbadoras más frecuentemente relacionadas con el bajo rendimiento escolar son las descritas en el DSM IV como Trastornos del aprendizaje (de la lectura, del cálculo, o de la expresión escrita), como Trastornos de la comunicación, o como Otros trastornos de la infancia, la niñez y la adolescencia (de ansiedad, reactivo, disocial, etc.).

Social

Se refiere a las relaciones interpersonales actuales y pasadas. Incluiría el contexto social familiar, escolar y de grupo en que se mueve el niño (Bronfenbrenner, 1987). Si las estructuraciones sociales son constitutivas del proceso de equilibración de los conocimientos será muy útil indagar sobre la historia de sus aprendizajes y en que tipo de medio que se realizó.

El factor a tener en cuenta es la organización de los estímulos más que la cantidad. Un medio flexible si bien es fuente de conflicto y desequilibrio facilita la actividad compensadora con su organización y por lo tanto el cambio y progreso del niño. Es diferente en el caso de medios rígidos (de reglas y horarios inmutables) donde no se toleran los desequilibrios o en medios aleatorios (sin reglas) que producen estructuraciones muy frágiles. Esto no sólo es válido para el ambiente familiar en que se desenvuelve el niño sino también para el tipo de enseñanza más o menos organizada que recibe. Un caso típico son las dificultades originadas en la discontinuidad escolar por cambios sucesivos de escuelas.

Si el contexto escolar respeta el contexto de pertenencia del niño, sus períodos de crisis, las diferencias individuales, fomenta la creatividad, la autocrítica, le provee al sujeto de un nuevo contexto de pertenencia y de refugio de tensiones ayudándolo al desprendimiento de su familia, al logro de su autonomía y a la formación para la vida social. En caso contrario, espera conductas tipificadas agravando sus dificultades o provocándolas. Por ello, al considerar este modal tenemos en cuenta el medio en el se inserta para evaluar la capacidad adaptativa del sujeto y de sentido de la realidad como también para dar un pronóstico.

Perfil multimodal

Teniendo en cuenta los aspectos mencionados, estamos en condiciones de armar un primer Perfil Multimodal de doble entrada a través

de un proceso Psicodiagnóstico que incluye Entrevista Inicial con los padres y las entrevistas con aplicación de la batería de tests correspondiente al niño.

Primero veamos en un esquema lo que deberíamos indagar y a través de qué técnicas exploratorias.

Perfil multimodal del psicodiagnostico. (rossi, 2000)

	INVESTIGAMOS	TECNICAS DGN.
BIOLOGICO	Salud del niño, medicamentos, accidentes u operaciones sufridas. C.V.M.	Examen clínico y neurológico. Bender. Diferencias en C.I. Verbal y Ejecutivo del WISC.
AFECTIVO	Emociones auténticas y sustitutivas que despiertan la escolaridad y el aprendizaje en el niño y sus padres. Qué significado tiene esto para ambos.	C.A.T. Pareja Educativa. Persona bajo la Lluvia. Test de M. Thomas. Test de Lüscher Entrevistas.
SENSACIONES	Las sensaciones desagradables y/o agradables que percibe al entrar a la escuela, ante las pruebas o cualquier otra situación de aprendizaje. También los impedimentos sensoriales.	Test de M. Thomas. Animal Preferido. Desiderativo Hora de Juego. Diferencias en CI del WISC
IMAGENES	Imagen corporal, de la familia, de la relación educativa y las asociadas a esta última. También las imágenes fantaseadas de futuro.	H.T.P. Flía K. Pareja Educativa T. de M. Thomas. Claves del WISC
COGNITIVO	Las ideas o creencias que sostienen el síntoma emergente o la conducta inadecuada. Cómo procesa la Información. Cómo resuelve las consignas	Observación de la conducta durante las pruebas y de los cuadernos. C.A.T. T. de Düss. Bender. WISC.
CONDUCTA	Comportamiento adaptativo o no dentro de su familia, en la escuela, ante el aprendizaje, con otros adultos y niños. Sus producciones. Qué conductas son reforzadas por los padres y/o por la escuela.	Observación de cuadernos Conductas y producciones WISC. RO C.A.T.
SOCIAL	Relación o tipo de vínculo con el entrevistador, con el grupo, maestros, padres y con el propio aprendizaje. En qué medio se desempeña.	C.A.T. FLIA K. Entrevista con padres y maestros. En WISC: Subtest de Información, Comprensión y Ordenamiento de Hist.

Completando este cuadro con los problemas y síntomas relevantes de cada uno de los modales, podemos establecer un Perfil Multimodal de primer orden de la personalidad al que le podemos agregar las técnicas terapéuticas apropiadas para ser aplicadas (en el lugar de las diagnósticas que aparecen en el cuadro anterior). Para amplificar algún aspecto del problema como en este caso, el trastorno de aprendizaje, realizamos este mismo estudio sobre ese síntoma en particular dando lugar a un Perfil Multimodal de segundo orden.

Vamos a ejemplificar lo antedicho con el Caso Mariana:

Mariana, 11 años, es traída a la consulta por su mamá en el último mes de cursar su sexto año. El motivo: incontinencia esfinteriana dentro de la escuela o cuando sale de compras, desde hace 2 meses aproximadamente. Debe solicitar permiso para concurrir al baño varias veces durante las clases, aún en aquellas materias que más le gustan como Matemáticas. Siempre fue una excelente alumna pero ahora bajó su rendimiento, justo en momentos donde cursa para rendir en una escuela de mayor exigencia académica. Tiene dos hermanos mayores que ella. Pertenece a una familia de clase media de comerciantes. La madre comenta que es una niña “que no es agradable” que no va hacia los demás, es solitaria. No les toca el piano porque “no sabe bien”. La niña dice que no puede concentrarse porque piensa constantemente en que debe pedir permiso para ir al baño y se avergüenza. Los datos evolutivos son normales. Tuvo un accidente: se cayó en la escuela y hubo que operarla (pues se quebró).

Se realizó el proceso Psicodiagnóstico con Entrevista para padres, Entrevista para la niña y batería de tests (H.T.P. FIA K. P.B.la LLUVIA, Pareja Educativa, C.A.T., T. de M. Thomas). Esta información se volcó en un Perfil Multimodal de primer orden que se puede observar en la página siguiente.

Mariana recibió 14 sesiones de Psicoterapia donde se trabajaron los 7 modales con resultados que son expresados por la niña misma en la última sesión donde hace una evaluación de la terapia recibida. Dice: “Me enseñaste a controlarme más, dejé de ir al baño en la escuela... Ahora voy como todo el mundo...” “Yo te decía lo que no me gustaba...” “Me ayudaste a cómo decir lo que yo sentía”... “Yo le conté a algunas de mis amigas”...

Perfil multimodal de segundo orden: caso mariana (rossi, 2000).

	DATOS RELEVANTES	TECNICAS
BIOLOGICO	11 años. Trastornos de eliminación 5 veces por día.	Chequeo médico. Entrenamiento esfinteriano
AFFECTIVO	MIEDO “que me salga mal”... “a menstruar”... “Que nunca se me pase...” BRONCA de no poder controlar la situación.	Expresión de emociones. Soluciones posibles ante diferentes situaciones temidas. Etc. Asesoramiento a la madre
SENSACIONES	Siente dolor de panza, que se le mojan las manos, nerviosismo...	Técnicas de relajación. Respiración.
IMAGENES	Se acuerda cuando fue al centro a hacer compras con una compañera y ella tenía fiebre. Se imagina que si no hace esto la agarra un monstruo.	Análisis para pérdida de sentido de la conservación y cambio de imágenes.

COGNITIVO	Su objetivo de vida está constreñido a lo escolar. Es una carga demasiado pesada ser adulto. Prefiere quedarse niña. La madre le dice: “Nadie te va a querer” La niña dice: “Los nervios no me dejan pensar”	Asociación Libre. Técnicas cognitivas: análisis y modificación de las creencias e imágenes ansiógenas y de la dependencia en la aprobación ajena. Asesoramiento a padres.
CONDUCTAS	No habla, no participa. No pide lo que necesita. En la escuela pide permiso varias veces para ir al baño.	Entrenamiento Asertivo. Ensayo de nuevas conductas y refuerzo de los éxitos por la familia y la escuela.
SOCIAL	La maestra de Matemática dijo: “Nadie pide permiso para ir al baño” La madre prioriza los objetivos, no considera lo que siente. La niña posee normas muy estrictas para la elección de sus íntimos. Autoritaria y susceptible.	Asesoramiento a padres y escuela. Entrenamiento Asertivo. Modelado. Informe o Devolución al maestro.

Conclusion

“Una evaluación precisa” afirma A. Lazarus (1983), “requiere un estudio sistemático de cada modalidad separada y las interacciones entre las siete modalidades de los B.A.S.I.C.CO.S.” El perfil de modalidades inicial obtenido a través de las entrevistas y algunas técnicas, nos provee de un análisis macroscópico de la personalidad. Ahora, al someter cualquier ítem de dicho perfil a un estudio más detallado establecemos un Perfil de Modalidades de segundo orden que posibilita una revista microscópica del síntoma y nos permite seguir caminos terapéuticos más productivos.

Para estudiar el cómo de la sintomatología es necesario analizar las interacciones entre los modales, cómo influye uno sobre los restantes (emociones sobre sensaciones, etc.). Es importante, también examinar la secuencia u “orden de encendido” de los diferentes modales frente a una situación dada. Procedimiento llamado rastreo que permite establecer las secuencias de disparo o activación de las modalidades facilitando el rapport junto a la posibilidad de la toma de conciencia, el control y cambio. (Rossi, 2000)

Un enfoque Multimodal requiere que se responda a través del diagnóstico esencialmente sobre:

1. Los problemas específicos e interrelacionados
2. Las variables que lo mantienen

3. La instancia solucionadora del problema para ese individuo.

La simpleza y amplitud son cualidades integradoras de los resultados del Psicodiagnóstico que enriquece nuestro trabajo diagnóstico y psicoterapéutico, a la vez que simplifica la tarea última del proceso: la realización del Informe.

En cuanto al proceso de Devolución posee una concepción que respeta el origen del término (del latín *devolvêre*, rodar, restituir una cosa a la persona que la poseía) además de sus aspectos técnicos, estéticos y éticos (Rossi, 1995). Tiene en cuenta el qué, cómo y porqué se compartirá determinada información con el sujeto. Además provee una situación de intercambio y de análisis constante del terapeuta y su práctica.

Por todo esto, considero que incorporar este instrumento diagnóstico Multimodal constituye un valioso aporte para el Psicodiagnóstico, así como la integración de las técnicas Psicodiagnósticas con el enfoque Multimodal podrían constituir un enriquecimiento para la tarea del Coaching Educativo Integrado.

References:

- Aberastury, A. (1969). *Teoría y Técnica del Psicoanálisis de niños*. Paidós. Bs. As. Argentina.
- Azcoaga, J. Derman, B. Iglesias, A (1997). *Alteraciones del Aprendizaje Escolar: Diagnóstico, Fisiopatología y Tratamiento*. Paidós Ibérica. España.
- Beck, A. Rush, J. Shaw, B. Emery, G (1979). *Cognitive Therapy of Depression*. Edición española: *Terapia Cognitiva de la Depresión*. Editorial Española: Desclée de Brouwer, 1992. España.
- Bourgés, S (1980) *Tests para el psicodiagnóstico infantil*. Ed. Cincel. Madrid.
- Bronfenbrenner, U. (1987). *La ecología del desarrollo humano*. Paidós. Barcelona
- Cayssials, A. (1998). *La escala de inteligencia WISC-III en la evaluación psicológica infanto-juvenil*. Paidós. Bs. As.
- Ellis, A. Abrahms, Eliot (2005). *Terapia Racional Emotiva*. Ed. Pax. México.
- Fromm, E. (1980). *El miedo a la libertad*. Paidós Studio. Barcelona - Bs. As.
- Erikson, E. (1985). *Infancia y sociedad*. Ed. Hormé. Paidós. Bs.As.
- García Arzeno, M. (1993). *Nuevas aportaciones al Psicodiagnóstico clínico*. Ed. N. Visión. Bs. As.
- Grassano de Pícolo, A. (1984). *Indicadores psicopatológicos en técnicas proyectivas*. Ed. N. Visión. Bs As.
- Kerman, B. (1998). *Nuevas Ciencias de la Conducta* Ufflo. Bs. As.
- Kertész, R. (1997). *Análisis Transaccional Integrado*. Ippem. Bs. As.
- Lazarus, A. (1983). *Terapia Multimodal*. Ippem. Bs. As.

- Lunazzy, H. (1992). *Lectura del Psicodiagnóstico*. Ed. Belgrano. Bs. As.
- Luzuriaga (1972). *La inteligencia contra sí misma*. Ed. Psique. Bs. As.
- Oro, O. (2005). *Persona y personalidad*. E.F.A.L.V.Frankl. Argentina.
- Paín, S. (1976). *Los problemas de aprendizaje*. N. Visión. Bs. As.
- Paín, S. (1984). *Psicometría Genética*. N.Visión. Bs. As.
- Paín, S. (2000). *Aportes para una clínica del aprender*. Ed. HomoSap. Rosario.
- Piaget, J. (1990). *La formación del símbolo en el niño*. F.C.E. Bs. As.
- Querol, S. Y Chaves Paz (1997). *Adaptación y aplicación del test de La Persona bajo la Lluvia*. Ed. PSIQUE. Argentina.
- Rossi de Bergés, G. (1995). Psicodiagnóstico y Ética en las Instituciones Escolares. *Boletín Informativo de ADEIP*. Año 4, N°15
- Rossi, G. (1988). *Factores- causa de los problemas de aprendizaje*. Jornadas Nacionales de Psicodiagnóstico. (s.p) 18/9/88. U.N.T. Tucumán.
- Rossi, G. (1990). *El papel de la maduración en coordinación visomotora o la inteligencia en el aprendizaje de la lectoescritura*.- Biblioteca especializada "J. J. Bernstein" N 0062. IV Jornadas Nacionales de Psicodiagnóstico. U.N.C. Córdoba.
- Rossi, G. (1995). *Reflexiones acerca de la Devolución en el Psicodiagnóstico Infantil*. Biblioteca especializada "J. J. Bernstein" N 0406. IX Jornadas Nacionales de Psicodiagnóstico. ADEIP. Cap. Fed.
- Rossi, G. (1998). *Psicodiagnóstico Infantil: la devolución al maestro*. Biblioteca especializada "J. J. Bernstein" 0915. II Congreso Nacional de Psicodiagnóstico. ADEIP. Santa Fe.
- Rossi, G. (2000). *Un enfoque multimodal de los problemas de aprendizaje*. (Biblioteca especializada "J. J. Bernstein" 1553). Jornadas Nacionales de Psicodiagnóstico. ADEIP. La Plata.
- Rossi, G. (2007 a). *La investigación de la inteligencia y la personalidad como bases para el rendimiento*. ISSN 1667 -6750. XIV Jornadas de Investigación de la UBA. Tercer encuentro de investigadores del Mercosur. (p.a). Tomo I. (pag. 441). Bs. As.: UBA. <http://www.aacademica.com/000-073/339>
- Rossi, G. (2007 b). *Mala praxis en el Psicodiagnóstico*. XI Congreso Nacional de Psicodiagnóstico. C.L. 4. (pag. 62). ADEIP. S. S. De Jujuy.
- Rossi, G. (2007 c). *Por qué test de Personalidad en problemas de rendimiento*. XI Congreso Nacional de Psicodiagnóstico. C.L. N 5. (p. 62) ADEIP. S. S. De Jujuy.
- Rossi, G. (2008). *Investigando un modelo de diagnóstico integral de la personalidad*. XV Jornadas de Investigación de la U.B.A. Cuarto encuentro de investigadores del Mercosur. (Tomo III pag. 501). U.B.A. Bs. As.
- Rossi, G. (2009). *¿Qué medimos cuando medimos rendimiento?* XIII Congreso Nacional de Psicodiagnóstico. XX Jornadas Nacionales de ADEIP:

Libro: Psicodiagnóstico, Devolución, Trascendencia y Responsabilidad (pag. 154) U.N.C. Córdoba.

Rossi, G. (2009). *Personalidad e inteligencia: las rutas del rendimiento*. Tesis doctoral no publicada. Universidad de Flores. Bs. As. Argentina

Rossi, G. (2011). *Hacia un modelo integral tridimensional de diagnóstico de la personalidad*". U.N.T. Congreso de Psicología del Tucumán. Tomo II: Congreso de Psicología del Tucumán. (pag. 7). UNT. S.M. de Tucumán.

Rossi, G. (2011). *Modelo integral tridimensional de diagnóstico de la personalidad*. (RES. HCD. N: 085-10-2010). Póster presentado en el II Congreso de Psicología del Tucumán. Libro del Congreso (pag. 116). Facultad de Psicología de la Universidad Nacional de Tucumán. S.M. de Tucumán.

Rossi, G. (2012). *Un nuevo modelo de diagnóstico de la Personalidad*. World Federation for Mental Health. (ISBN 978-987-23478-5-7) VII Congreso Argentino de Salud Mental.. En "Diagnóstico o estigma" (pag. 259). Asociación Argentina de Salud Mental. Bs. As.

Rossi, G. (2013). *La concepción de sujeto como elemento de pronóstico*. (ISSN 1667 -6750). XX Jornadas de Investigación de la UBA. Noveno encuentro de investigadores en Psicología del Mercosur. Tomo II. (pag. 60). Facultad de Psicología. Universidad de Buenos Aires. Bs. As. <http://www.academica.com/000-054/911>

Tallis, J y Soprano, A. (1991). *Neuropediatría. Neuropsicología y aprendizaje*. Nueva Visión. Bs. As.

INTERDISCIPLINA, COMUNIDAD Y REDES: UNA EXPERIENCIA RADIAL

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Abstract

In this study, we experienced oriented radial transmission and discussed topics related to health and psychology from a broad interdisciplinary perspective, dynamic learning, and questions described. The radio program is focused at the wider community, and only to professionals in the field "psi" i.e. an ongoing dialogue between the listeners which are the real social actors and the privileged invited specialists. Thus, it creates a space by which it promotes words to share the concerns of interest of the whole society.

Keywords: Radial transmission, interdisciplinary

Resumen

Se describe una experiencia radial orientada a la transmisión y debate de temas vinculados con la salud y la psicología desde una perspectiva interdisciplinaria, amplia, dinámica, de aprendizaje y de interrogantes. El programa radial está dirigido a la comunidad en general, no exclusivamente a profesionales del ámbito "psi". Se privilegia un diálogo permanente entre los oyentes -que son los verdaderos actores sociales- y los especialistas invitados, generando un espacio en el que se promueve la palabra para compartir inquietudes que interesan a toda la sociedad.

Palabras clave: Interdisciplina – comunidad – redes sociales – mass media – radio

Introducción

Sin lugar a dudas la radio es el medio más adecuado para crear un clima distendido y calmo que ayuda a integrar la mirada y la escucha. Programa Radial Psi, conocido por sus siglas PRP, es la concreción de un viejo anhelo, un espacio donde la palabra es la verdadera protagonista. Para

que ese objetivo se cumpla, creamos un ambiente cómodo que alienta a los especialistas invitados a disponer libremente de su tiempo para abordar los diferentes temas propuestos. A posteriori habilitamos, en tiempo real, un amplio intercambio de ideas tanto con otros especialistas como con la comunidad en general, a través de intervenciones por la vía telemática: e-mail, redes sociales y/o teléfono.

Trabajo

PRP nació a partir de un ejercicio extracurricular compartido con alumnos de Psicología en la Universidad. Frecuentemente los alumnos proponen interesantes debates sobre alguna película recién estrenada que amerita un concienzudo análisis. Se comparten diferentes puntos de vista que siempre resultan muy ilustrativos y enriquecen el entendimiento del comportamiento humano, tema central de la ciencia psicológica. La propuesta era -y es- compartir; y el medio, la palabra. Comenzó a gestarse la idea de intercambiar conocimientos, ideas, opiniones y de permitir que la palabra sustituyera los silencios. El proyecto, de a poco, fue tomando forma hasta convertirse en un hecho concreto. En el mes de Abril de 2011 PRP salió al aire por primera vez y ahora se está preparando, con mucho entusiasmo, la quinta temporada.

El programa está dirigido a la comunidad en general, es decir no exclusivamente a profesionales y estudiantes del ámbito “psi”. La idea es posibilitar un diálogo permanente con los oyentes, que son los verdaderos actores sociales, generando un espacio en el que se privilegia la palabra: un lugar para la expresión y para compartir inquietudes que interesan a la sociedad.

En PRP nos hacemos eco de temas que preocupan a la comunidad y nos sumamos a los esfuerzos que, de alguna manera, promueven la promoción de la salud, la conciencia social y la calidad de vida.

En el programa también participan alumnos de Psicología de diferentes universidades y carreras relacionadas con la salud, el trabajo social y la comunicación social, quienes comentan sus experiencias en pasantías hospitalarias, judiciales o educativas; y también relatan los puntos más sobresalientes de sus Tesinas sobre las que trabajaron para graduarse en la carrera de grado. Nos pone muy contentos saber que PRP se ha convertido en fuente de consulta de estudiantes y profesionales sobre los temas abordados, ya que todos los programas son grabados y cuidadosamente guardados en una biblioteca en formato podcast (audioblog) para ser escuchados en diferido y/o utilizados a posteriori como iniciadores de debates.

El proyecto implicó un lento proceso de aprendizaje e incorporación de tiempos internos (timing) de los distintos segmentos propuestos: qué y cuánto decir en cada uno de ellos, escuchar el retorno del audio en el

auricular, decodificar los ademanes del operador técnico para redondear una conversación, ir a un corte, atender un llamado telefónico, suspender una tanda o hacer una breve pausa para un efecto especial. Al principio costó un poco dosificar las pausas para pensar y transmitir una idea o los silencios (que en radio parecen eternos), o no distraerse cuando el operador técnico ingresa inesperadamente al estudio radial -en plena transmisión- para direccionar el micrófono de un invitado o un panelista. El humor, en esas circunstancias, fue y es siempre un buen aliado.

Entre los temas abordados en PRP se privilegian, fundamentalmente, aquellos vinculados con la psicología y la salud desde una perspectiva interdisciplinaria, amplia, dinámica, de aprendizaje y de interrogantes. Además, frecuentemente se realizan coberturas radiales de Congresos, Simposios y Jornadas de Actualización Profesional. Son oportunidades en las que el equipo de PRP tiene el orgullo de entrevistar a prestigiosas personalidades del quehacer PSI tanto argentinas como extranjeras. Por ejemplo, se realizó la cobertura radial de un importante evento científico: el III Congreso Internacional de Violencia, Maltrato y Abuso, que fue presidido por la Lic. María Beatriz Müller y la Dra. Eva Giberti, directora nacional del programa 'las víctimas contra las violencias' del Ministerio de Justicia. Esa experiencia marcó un hito, un antes y un después para el equipo de producción de PRP, porque comenzamos a ser referentes de una masa crítica de oyentes que crece semana a semana.

Se realizó, asimismo, la cobertura de las Jornadas de Salud Mental del Municipio de Lomas de Zamora, llevadas a cabo en algunas oportunidades en el Hospital Interzonal de Salud Mental José Estéves, y otras en el Hospital Gandulfo donde también cubrimos el minuto-a-minuto de las Jornadas sobre Salud y Oncología. También realizamos la cobertura radial de las I Jornadas (2012) y las II Jornadas (2013) de Residentes PRIM de Lanús sobre Abordajes Interdisciplinarios en Salud Mental. PRIM es la sigla de Programa de Residencia Integrada Multidisciplinaria. Las Jornadas se desarrollaron durante tres días de trabajo en la Escuela de Formación en Salud Dr. Ramón Carrillo que funciona en el Hospital vecinal Narciso López de Lanús, institución asociada a la Universidad de Buenos Aires. Allí tuvimos la oportunidad de conversar con el Dr. Ierace, Director de la Región Sanitaria VI del Ministerio de Salud Provincia de Buenos Aires, y con el Dr. Brunetti, Director del mencionado Hospital, entre otras destacadas personalidades.

Por otra parte, PRP comenzó a estar presente en ateneos científicos, presentaciones de libros, exposiciones de arte, estrenos de obras de teatro, etc. para hablar directamente con sus protagonistas y también con los panelistas que forman parte de esas presentaciones.

Viejas y nuevas tecnologías

Casi todas las radiodifusoras actuales cuentan con conexión a internet, que depende de la red telefónica y/o del servicio de larga distancia disponible. PRP se emite todos los días sábado de 16 a 18 horas por la FM 90.9 y también puede escucharse online por internet en <http://www.antena91.com.ar/Reproductor.htm>. El acceso vía web posibilita que puedan escucharnos desde cualquier punto del planeta: tenemos oyentes del interior del país y también de algunos países de habla hispana, tales como Perú (allí muchos colegas peruanos son conocedores de las aportaciones del Análisis Transaccional introducido en Latinoamérica por el Dr. Roberto Kertész, actual Rector Emérito de la Universidad de Flores, UFLO), España, México, Colombia, Chile, Bolivia, Uruguay, etc. quienes participan activamente haciendo comentarios por facebook (<http://www.facebook.com/RadioPsi>) y twitter (http://twitter.com/Radio_PSI), sus opiniones muchas veces inician un interesante debate en vivo.

Interdisciplina, Comunidad y Redes

Las expresiones artísticas son maneras de contar una historia -la propia historia- pertenecen a sus creadores y a quienes las observan, las leen, las critican y encuentran algo distinto, diferente cada vez. En tanto y en cuanto dicen algo es posible darles el tratamiento de un texto, como si fuese un material clínico. ¡Nos gusta ser creativos! Hace poco invitamos al Coro Kilya, dirigido desde 2001 por Ulises Palau, quien habitualmente canta en la Catedral Metropolitana, y en los últimos años ha participado del Encuentro Internacional de Orquestas Juveniles cuyo cierre se realiza en el estadio Luna Park, junto a la cantante Patricia Sosa. El repertorio en vivo en el estudio radial fue un verdadero deleite para nuestra audiencia.

Cada programa es distinto del anterior, tiene un perfil propio dado por el juego del intercambio de la palabra entre los especialistas, los oyentes y el equipo de trabajo en tiempo real a través de nuestras vías de comunicación. Los temas tratados son, en su mayoría, propuestos por los oyentes del programa, algunos apuntan a informarse sobre algún tema científico en particular, otros a analizar mitos enraizados en el imaginario colectivo; en fin, cada tema planteado tiene un por qué y es importante que, además de escuchar la pregunta, alcancemos a ver la necesidad de la respuesta. Ese es el motivo de la diversidad de los temas y también del tratamiento de los mismos. Las propuestas nos plantean tratar temas relativos a la salud, a la problemática social, a la legislación en materia de salud, a recordar la conmemoración de días para la prevención o sencillamente recomendar muestras de arte, recitales, conferencias, exposiciones y muchas otras actividades que hagan al desarrollo de la salud y el arte.

Integrantes de PRP, Programa Radial Psi

Organizar un equipo de trabajo basado en el respeto por las opiniones de los demás aún desde el disenso, que supiéramos comunicarnos, fue desde un comienzo el objetivo fundamental de PRP. El equipo está conformado por:

- La Lic. Isabel (Chabela) Dávila, docente y ex-directora de nivel primario, recientemente graduada de la Licenciatura en Psicología, es la productora ejecutiva del programa. Coordina tres interesantes segmentos: en el “NotiPsiero” nos enteramos de las novedades de eventos psi, psico-notas, etc., en “Del dicho al hecho” comentamos el origen de dichos y frases populares; y “Asocie Libre Mente” es un collage de palabras, ideas, músicas, poemas y personajes célebres.

- Natan Ezequiel Sánchez, es Asistente de Producción y está a cargo de un segmento en el que se comentan películas relacionadas con los temas que abordamos semana-a-semana.

- Cecilia se encarga de la columna sobre Arte, Cultura y algo más... es una colaboradora de 88 años, quien asiste a conciertos, muestras de arte, exposiciones, presentaciones de libros, etc. que luego comenta y recomienda al aire. Realmente es admirable su espíritu y las ganas que pone todas las semanas.

- Sálem Pérez, es una mascota virtual -un gato- que todas las semanas participa en Facebook con picantes, ácidos y divertidos comentarios. Es editor de Salempedia y de SalemNiús.

- Rosana Molina, estudiante de la Licenciatura en Psicología (UK), tiene a cargo la columna PsicoCheff: las recetas del inconsciente, a partir de una de las pasiones de Sigmund Freud: la cocina.

- Roberto Flores Acuña es nuestro Operador Técnico, un verdadero socio estratégico.

- Lic. Marcelo Della Mora. Director y conductor del programa. Psicoanalista, Psicólogo, Epidemiólogo (UBA), Profesor Asociado de Psicología del Desarrollo (Universidad Kennedy) y Profesor Asociado de Clínica Psicológica de Adultos (Universidad de Flores).

Se hace camino al andar

Cada programa tiene su encanto, sin embargo algunos dejaron profundos recuerdos, como el de Adopción, ocasión en la que nos acompañó la coordinadora del Equipo de Adopción del Hospital Tobar García, Lic. Norma Krasnapolski; Atención Primaria de la Salud (APS), programa en el que hicimos foco en la promoción de la salud para la prevención de enfermedades, en esa edición nos acompañó la Lic. Silvia Alvarado del Hospital vecinal Narciso López de Lanús; La Lic. Elsa Lanza, pionera en Argentina en Psicoterapia gestáltica nos contó en vivo cómo se trabaja desde

esa línea clínica. La Dra. Mirta Simahan, reconocida psiquiatra, nos compartió su experiencia sobre la Psicopatía de la vida cotidiana. Otros temas pedidos por la audiencia y que hemos desarrollado fueron: Cine y Psicoanálisis, Psicoperinatología, Neoparentalidades, Bullying, Psicoanálisis a distancia, Terapia de Crisis, Duelos, Creatividad en Psicoterapia, Vicisitudes de la Vejez, Abuso sexual infantil, Arteterapia, y tantos otros...

Autismo y TGD: fue un interesante programa en el que nos acompañó la Lic. Elsa Coriat; Fertilización Asistida: edición en la que nos visitó en el estudio de la radio la Dra. María Cristina Cortesi, abogada especialista en Derecho Sanitario; Logoterapia: edición muy recordada por la audiencia en la que contamos con la participación del Lic. Eugenio Pérez Soto. Psicoanálisis en la villa, fue una edición especial en la que nos acompañaron las Licenciadas Silvia Sisto y Laura Lueiro, y también el Profesor Carlos Cossio. El Dr. Sergio Rodríguez y la Lic. Laura Lueiro compartieron con nuestros oyentes hallazgos, interrogantes y nuevas líneas de investigación en Psicoanálisis y Neurobiología.

Marisa Tapia, Licenciada en enfermería y profesora de música, dirige un coro con pacientes enfermos de Parkinson en el Hospital Ramos Mejía, curiosamente estos coreutas cuando cantan no manifiestan los habituales síntomas de la enfermedad! En un programa dedicado al Parkinson la convocamos a ella y al coro "razón de vivir", en esa oportunidad conocimos a Sálem Pérez, mascota virtual encarnada por el esposo de una de las coreutas del Hospital Ramos Mejía.

Algunos colegas del Colegio de Psicólogos de la Provincia de Buenos Aires, Distrito XIII, también nos han acompañado en el estudio radial a programas sobre temas exclusivos: Lic. Sara Pitman y Lic. Ivanna Russo (el Día del Psicólogo), Lic. Adrián Trezza (Ley de Salud Mental), Lic. Analía Maj (Psicodiagnóstico), entre otros.

PRP ha sido distinguido por la Organización Mundial de la Salud (OMS) y la Asociación internacional para la prevención del suicidio (IASP) en la categoría: Periodismo Responsable.

Recientemente PRP fue presentado como dispositivo comunitario, preventivo y asistencial, en la Jornada Provincial del Colegio de Psicólogos de la Provincia de Buenos Aires, celebrada en el mes de Octubre de 2014, en Necochea, Provincia de Buenos Aires. En noviembre del mismo año PRP se presentó en las 13° Jornada de Salud Mental Lomas 2014 "Segregación y Desamparo", organizada por la Dirección de Salud Mental del Municipio de Lomas de Zamora, Provincia de Buenos Aires.

Conclusión

Los futuros psicólogos están ávidos de herramientas que les permitan hacer un buen diagnóstico y tratamiento de patologías vinculadas con nuevas

legalidades, acordes con una sociedad que permanentemente va complejizándose. Como siempre la Ciencia avanza más rápido que el Derecho y la Ética que intentan entender y ordenar las prácticas sociales. Leyes relativamente nuevas como las referidas a la muerte digna, la identidad autopercebida de género, el aborto no punible, la flexibilización en materia de adopción, el matrimonio igualitario, etc. confrontan a los futuros profesionales de la salud mental con problemáticas en las que intervienen una multiplicidad de variables, y de un grado de complejidad creciente que la formación de grado no prevé o que son tratadas en la currícula muy superficialmente. A ello debemos agregar una profunda crisis de valores, actuales, globales, sobre todo referidos a una desvalorización de la función paterna y desafíos a la muerte y a la sexualidad.

En PRP intentamos sembrar consciencia y generar interrogantes que disparen alertas, para que la comunidad tenga elementos que le permitan evaluar la realidad, debatir, opinar y tomar decisiones. Es decir acercar a la sociedad los elementos necesarios para estar atentos ante eventuales signos de alarma, indicarles cómo actuar en cada caso particular o adónde acudir en busca de ayuda. Libertad para pensar y opinar; responsabilidad para actuar. Por otra parte nos interesa incentivar la investigación y el estudio tanto de los profesionales como de los estudiantes brindándoles un espacio que les permita difundir sus hallazgos. Más allá de los temas puntuales que se tratan, nos gustaría pensar que logramos transmitir una forma de vida, donde la palabra sea la real protagonista y ocupe los espacios dolorosos que a veces generan los silencios.

References:

Della Mora, M. (2014). *Un lugar donde la palabra la tenemos todos*. Trabajo presentado en la Jornada Provincial del Colegio de Psicólogos de la Provincia de Buenos Aires, Necochea, Provincia de Buenos Aires, Argentina.

Martínez Antón, M. (2012, Junio). PRP, para los que ya lo conocen. *Revista Psyche Navegante*, 101.

Mazzina, C. (2013). TIC y política en América Latina: El desafío de las próximas generaciones. *Revista Reflexión Académica en Diseño y Comunicación*, 14 (21).

Tumarkin, G. (2011). Programa Radial Psi. *Periódico El Otro Psi*, 181.

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If you use the original version of a non-English work, cite the original version. Non-Latin alphabets are not used in the reference list in APA Style, so the title needs to be transliterated (that is, converted to the alphabet you are using to write a paper),

Clancy, Tom, Carl Stiner, and Tony Koltz. *Shadow Warriors: Inside the Special Forces*. New York: Putnam, 2002.

Cohen, Andrew, and J.L. Granatstein, eds. *Trudeau's Shadow: The Life and Legacy of Pierre Elliott Trudeau*. Toronto: Random, 1998.

Meidenbauer, Jorg, ed. *Discoveries and Inventions: From Prehistoric to Modern Times*. Lisse: Rebo, 2004.

Puzo, Mario. *The Family: A Novel*. Completed by Carol Gino. New York: Harper, 2001.

Rowling, J.K. *Harry Potter and the Chamber of Secrets*. New York: Scholastic, 1999

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APA citation style recommended.

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LA IMPORTANCIA DEL USO SISTEMATICO DE ESCALAS DE DEPRESION EN CESACION TABAQUICA

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Abstract

Depression is currently the 4th cause of global impairment, with a 15%-20% prevalence rate. The World Health Organization predicts that depression would become the first global morbidity cause by 2030. Tobacco addiction prevalence of the general population is 25%, while in patients with psychiatric diseases, it ranges between 60% and 90%, depending on the disease. Also, the incidence of depressive disorders on smokers doubles the incidence on non smokers. Both pathologies are closely related, and demand tobacco cessation professionals to check for depression. Straightening of this variable makes tobacco cessation much easier, as well as accomplishing other life goals which is previously out of reach. Routine use of evaluation scales can save time, enhance treatment decisions, and reduce clinical mistakes. PHQ-2 scale allows the detection of depressive mood by means of two questions, with a sensibility of 83% and a specificity of 92%. The scale was validated on 6000 patients. This paper thus proposes the routine use of the PHQ-2 scale on tobacco cessation patients.

Keywords: Depression, tobacco addiction

Resumen

Actualmente la depresión es la 4° Causa de Discapacidad en el Mundo con una prevalencia: 15-20%. La Organización Mundial de la Salud, espera para el 2030 sea la principal causa de morbilidad en el mundo. La

prevalencia del tabaquismo en la población general es del 25%. Mientras que en los pacientes con enfermedad psiquiátrica oscila entre un 60-90% dependiendo de la enfermedad psiquiátrica que se trate. Siendo la incidencia de trastornos depresivos el doble en fumadores vs. no fumadores. Ambas patologías están estrechamente relacionadas, nos exigen hoy a los que hacemos cesación tabáquica realizar el diagnóstico de depresión y al restablecer esta variable será mucho más sencillo para el paciente dejar de fumar y concretar otros objetivos que tenga en su vida y tampoco podía resolver. El uso rutinario de herramientas de evaluación puede ahorrar tiempo y mejorar las decisiones de tratamiento y reducir errores clínicos. El cuestionario PHQ-2 permite a través de dos preguntas detectar el ánimo depresivo con una sensibilidad de 83% y una especificidad de 92%. Es un cuestionario validado en 6000 pacientes. En el siguiente trabajo se propone este cuestionario en forma rutinaria con los pacientes fumadores.

Palabras clave: según descriptores en Ciencias de la Salud (DeCS)⁶¹
Depresión. Validación. Diagnóstico. Argentina

¹ **Biblioteca Virtual en Salud Argentina. Disponible en <http://decs.bvs.br/E/homepagee.htm>**

4) Institución donde se realiza el trabajo:

UNIDAD DE CESACION TABAQUICA DEL HOSPITAL DE CLINICAS DE LA UNIVERSIDAD DE BUENOS AIRES, ARGENTINA.

Planteamiento y Justificación del problema

El trastorno depresivo es el trastorno psiquiátrico más prevalente en la población general: afecta a más de 350 millones de personas en el mundo.¹ La OMS la describe como la cuarta causa de discapacidad en el mundo, con una prevalencia entre el 15 al 20%.² Afecta más a la mujer que al hombre (2:1) y es la principal causa mundial de discapacidad contribuyendo de forma muy importante a la carga mundial de morbilidad.² La depresión suele presentarse a partir de la tercera década de la vida y adquiere un curso variable. Aproximadamente 50% de los pacientes que sufre un episodio volverá a presentar otro más, y si han padecido tres episodios, el riesgo de un cuarto episodio es del 90%.²

La tasa de mortalidad en los pacientes con depresión es más elevada que en el resto de la población (RR 1.81).³ La muerte prematura en estos pacientes se explicaría principalmente por una mayor prevalencia de tabaquismo, alcoholismo y obesidad, así como también por un estilo de vida

sedentario y un menor cuidado de su salud. Además, estos pacientes tienen una menor calidad de vida, incremento en el riesgo de suicidio y alta asociación con padecimientos crónicos.⁴

Aunque muchos pacientes que sufren depresión reciben algún tipo de atención médica, esta suele brindarse en servicios de atención primaria de la salud más que en servicios de salud mental. Se supone que, aproximadamente, la mitad de los pacientes no son diagnosticados en el nivel primario de atención.^{5 6} En América Latina y el Caribe seis de cada diez personas no reciben tratamiento.⁷

En Argentina se carece de estudios poblacionales, algunos datos del ámbito de la atención primaria refieren una prevalencia del 24% de depresión mayor, 6% de distimia y 5% de depresión menor.⁸ Más recientemente, una encuesta realizada en la ciudad de Buenos Aires en una muestra a conveniencia de 1335 adultos halló una depresión probable en 20% de los encuestados (20,6% en mujeres y 19,6% en varones) utilizando como instrumento diagnóstico la escala de Beck.⁹

El rastreo sistemático de este padecimiento en atención primaria es propuesto en diferentes guías que varían en sus recomendaciones. Por ejemplo, en EEUU, la Task Force recomienda el rastreo en la población general, con la condición de que se cuente con los recursos necesarios para el tratamiento, diagnóstico y seguimiento de estos pacientes.¹⁰ En el RU, las guías del National Institute for Health and Clinical Excellence (NICE) sugieren el rastreo solamente en pacientes de alto riesgo: aquellos con antecedentes de depresión, diabetes, enfermedad coronaria, discapacidades físicas o mentales.¹¹ En cambio, la guía de la Task Force canadiense, ante la falta de evidencia de alta calidad, recomiendan en contra del rastreo sistemático en atención primaria. Sin embargo, sí recomiendan que los clínicos estén alertas ante determinados síntomas como insomnio, anhedonia, humor depresivo y estado de ánimo bajo.¹²

Existen numerosos instrumentos de diagnóstico de depresión: la escala de depresión de Beck¹³, el PHQ-9 (Patient Health Questionnaire)¹⁴, WHO-5¹⁵ (WHO Five Well Being Index) y el PHQ-2¹⁶ que es la versión de dos preguntas del PHQ-9. Todos estos instrumentos pueden ser autoadministrados o bien pueden ser utilizados por personal médico. El PHQ-9 se utiliza tanto como herramienta diagnóstica como para evaluar la severidad de la depresión. Sin embargo, solamente la escala de Beck está validada en nuestro país.¹⁷

El inventario de Beck fue diseñado con una escala de 21 ítems para evaluar la gravedad de la depresión. Su sensibilidad y especificidad es cercana al 100%.¹³ Pero, dada su extensión, es necesario otro instrumento de rastreo debido a que la práctica médica en atención primaria requiere de

prácticas más eficientes y la depresión es uno de tantas otras patologías que el médico en este nivel de atención necesita detectar.

El instrumento PHQ-2 es un instrumento breve cuya validez de constructo y de criterio en su versión en inglés lo hacen interesante para su uso en nuestro país.¹⁶

Formulación de la pregunta de investigación a modo de interrogante

Cuál es la validez de constructo y de criterio de una versión adaptada al idioma local del instrumento PHQ-2?

Marco teórico general y específico

La depresión es una enfermedad frecuente en todo el mundo, es la causa de aproximadamente 1 millón de muertes anuales debido a suicidio.⁷ La depresión es más común en las mujeres que en los hombres. Se ha calculado que la prevalencia puntual promedio de los episodios depresivos unipolares es 1,9% para los hombres y 3,2% para las mujeres, y que 5,8% de los hombres y 9,5% de las mujeres presentará un episodio depresivo en un período de 12 meses.⁷ Estas cifras de prevalencia varían de una población a otra. Puede afectar a los individuos en cualquier etapa de la vida, aunque la incidencia es más alta en la edad madura.⁷

El término “depresión mayor” se manifiesta con cinco o más de los siguientes síntomas:

- Estado de ánimo depresivo
- Pérdida de interés o placer en la mayoría o todas las actividades
- Insomnio o hipersomnia
- Cambios en el apetito o en el peso
- Retardo psicomotor o agitación
- Baja energía
- Poca concentración
- Pensamientos de culpa o inutilidad
- Pensamientos recurrentes sobre la muerte o suicidio

Dichos síntomas deberán estar presentes la mayor parte del día, cada día por un mínimo de dos semanas consecutivas y, al menos uno de ellos, debe ser el 1° o el 2° de la precedente lista. Además, estos síntomas que causan distress o alteración del funcionamiento psicosocial no deben ser el resultado de un efecto fisiológico a una sustancia o enfermedad física.¹⁸

La distimia es una condición relacionada que se caracteriza por síntomas depresivos que duran más de dos años, se caracteriza por el humor depresivo, la mayor parte del día y la mayoría de los días. El estado de ánimo depresivo se acompaña de disminución o incremento del apetito, insomnio o

hipersomnias, baja energía, baja autoestima, baja concentración y sentimientos de desesperanza.¹⁸

Dependiendo del número y de la intensidad de los síntomas, los episodios depresivos pueden clasificarse como leves, moderados o graves. Las personas con episodios leves tendrán alguna dificultad para seguir con sus actividades laborales y sociales habituales. En cambio, durante un episodio depresivo grave es muy improbable que el paciente pueda mantener sus actividades sociales, laborales o domésticas si no es con grandes limitaciones.⁷

Es esencialmente un trastorno episódico recurrente; cada episodio dura generalmente de unos pocos meses a unos años, con un período normal en medio.⁷ En cerca de 20% de los casos, sin embargo, la depresión presenta un curso crónico sin remisión.⁷

Existen determinados factores de riesgo que incluyen factores genéticos, ambientales, médicos y sociales como: antecedentes personales o familiares de depresión, sexo femenino, parto, traumas en la niñez, eventos estresantes en la vida, aislamiento social, enfermedad médica grave, demencia y abuso de sustancias.³

El síndrome de depresión puede manifestarse con diversos síntomas: del humor, síntomas cognitivos, neurovegetativos y síntomas somáticos. Las alteraciones del humor pueden incluir tristeza, distress, ansiedad, irritabilidad e insensibilidad emocional. Los síntomas neurovegetativos están presentes a través de la pérdida de energía, cambios en el sueño (insomnio o bien hipersomnias), apetito y peso. No obstante, algunas poblaciones especiales como los adultos mayores, las embarazadas, personas con bajos ingresos o nivel sociocultural y pacientes con enfermedades coexistentes pueden presentar predominio de síntomas somáticos como cefalea, dolor abdominal o pélvico, lumbalgias, otros síntomas gastrointestinales, etc. Este tipo de presentación es el que suele retrasar el diagnóstico sobre todo en el ámbito de la atención primaria.¹⁹

Sin embargo, los médicos de atención primaria suelen ser aquellos que toman contacto con este tipo de pacientes y deberían contar con una herramienta de rastreo que facilite el diagnóstico. Como se hiciera referencia en el apartado anterior existen varios instrumentos para el diagnóstico, sin embargo, sólo el inventario de Beck está validado localmente. Tiene como principal inconveniente su extensión, con un tiempo medio de respuesta de 10 minutos. Consta de dos versiones, primero fue desarrollado como una escala de 21 ítems, luego una escala reducida de 13. Sus propiedades psicométricas en nuestro medio fueron analizadas por Bonicatto S. (1998).⁸ La consistencia interna analizada con el alpha de Cronbach fue de 0.87. La validez concurrente se comparó con una sub escala del Symptom Checklist-90 (Pearson $r = 0.68$). Para la validez de criterio se

formuló una hipótesis acerca de que los mayores scores de depresión serían en mujeres, en jóvenes, en personas con bajo nivel socioeconómico, ya que la literatura hace referencia a este hecho. En su análisis encontraron dichas diferencias por género y nivel socioeconómico solamente.⁸

Con el instrumento PHQ-9 la depresión mayor es diagnosticada si cinco o más de los nueve criterios están presentes, la mayoría de los días, en las últimas dos semanas.¹⁶ Tiene una sensibilidad y una especificidad del 88%, es útil tanto para el diagnóstico como para el seguimiento.¹⁶ Su score puede ir de 0 a 27, valores mayores a 10 indicarían un posible diagnóstico. Utilizando como referencia 10% de prevalencia dicho punto de corte tiene un valor predictivo positivo de 45%. Un score menor de 10 tiene un valor predictivo negativo del 99%.¹⁴ Tiene un tiempo de respuesta medio de 5 minutos.¹⁴

El instrumento PHQ-2 utiliza sólo dos preguntas del instrumento anterior: son las que se refieren a la anhedonia y al estado depresivo. Fue validado en más de 6.000 pacientes del ámbito ambulatorio y clínicas ginecológicas.¹⁶ La validez de constructo fue evaluada con la escala de 20 ítems Short-Form General Health Survey, la validez de criterio a través de la entrevista con médicos en una submuestra de 580 pacientes.¹⁶ El resto de las propiedades se describirán en el apartado de metodología.

En Argentina se carece de datos válidos que nos describan la situación de esta patología en diferentes ámbitos, pero especialmente en atención primaria de la salud. Para el conocimiento de dichos datos es necesario contar con una herramienta de sencilla aplicación y de uso en el limitado tiempo de una consulta, que permita no sólo una orientación diagnóstica del paciente individual sino su uso a nivel poblacional.

Definiciones teóricas

Variables demográficas

- **Edad:** tiempo de transcurrido desde el nacimiento del/ la paciente expresado en años.
- **Situación de pareja:** vínculo personal de una persona con individuos de otro o de su mismo sexo.
- **Años de educación:** tiempo de educación formal recibida expresado en años.
- **Situación actual de empleo:** actividad laboral desempeñada por el/la paciente al momento de la consulta.
- **Nacionalidad:** lugar de nacimiento de el/la paciente.
- **Lugar de residencia:** sitio en el cual reside el paciente de manera permanente o la mayor parte del tiempo.
- **Cobertura médica:** contar con algún tipo de asistencia sanitaria a la prevención, tratamiento y manejo de la enfermedad y la preservación del bienestar mental y físico a través de los servicios ofrecidos por las profesiones de medicina, farmacia, odontología, obstetricia, enfermería y afines.

Variables relacionadas con antecedentes

- **Antecedentes personales:** conocimiento de circunstancias médicas previas del sujeto, especialmente las relacionadas a enfermedades crónicas no transmisibles o factores de riesgo para padecer depresión.
- **Antecedentes familiares de depresión:** conocimiento del diagnóstico de depresión en familiares directos en 1º grado.
- **Antecedentes familiares de otros trastornos mentales:** conocimiento del diagnóstico de otra alteración mental en familiares directos en 1º grado.
- **Consumo de medicación actual:** utilización diaria de fármacos prescritos o no.
- **Consumo actual de psicofármacos:** utilización diaria de psicofármacos.
- **Consumo de drogas:** uso/abuso de sustancias adictivas.
- **Consumo de tabaco:** se considerará como fumador a toda aquella persona mayor de 18 años que fuma en el momento de la consulta y que refiere haber fumado, al menos, 100 cigarrillos en toda su vida.²⁰
- **Consumo de alcohol:** se refiere específicamente al llamado “uso no saludable de alcohol” definido como aquella ingesta de alcohol que ocasiona riesgos a la salud.²¹
- **Auto-percepción del estado de salud:** es el propio reconocimiento de la salud de un individuo.

Variables relacionadas con el síndrome depresivo

- **Estado de ánimo depresivo:** estado de tristeza, desesperanza o depresión.
- **Anhedonia:** Pérdida de interés o placer en la mayoría o todas las actividades de la vida diaria.

Formulación de hipótesis (si aplica)

La versión adaptada del instrumento de diagnóstico de depresión PHQ-2 tendrá similares propiedades psicométricas que su versión original en inglés.

Objetivo/s o propósito/s del estudio

Objetivo general.

El objetivo general del presente protocolo es el de realizar la adaptación transcultural y la validación del instrumento PHQ-2 que permitan su aplicación para el diagnóstico de depresión en el ámbito de la atención primaria en Argentina.

Objetivos específicos

1. Describir las características demográficas de la muestra.
2. Obtener a través del proceso de adaptación transcultural una versión en nuestro idioma del instrumento.
3. Describir la confiabilidad de la versión local obtenida del PHQ-2 a través de su reproducibilidad y consistencia interna.
4. Analizar la sensibilidad y especificidad de cada uno de los instrumentos respecto de la entrevista diagnóstica con un psiquiatra (Gold Standard).

Material (humano o de otro tipo) y Métodos aplicados

Para llevar a cabo la adaptación lingüística se obtendrá la autorización de los autores del instrumento y se realizarán dos traducciones del inglés a nuestro idioma por dos traductores independientes. Estas versiones se revisarán con un panel de expertos. Luego se realizarán dos retraducciones por dos traductores diferentes. Se obtendrá una versión preliminar que será sometida a un pre-test. La versión que surja de esta etapa, luego del acuerdo con el panel de expertos, se evaluará en cuanto a su confiabilidad (reproducibilidad y consistencia interna) y validez interna.

Definición operacional de las variables y categorías.

Variabes demográficas

- **Edad:** ídem definición teórica. Variable numérica

- **Situación de pareja:** ídem definición teórica. Variable categórica: pareja conviviente, pareja no conviviente y sin pareja.
- **Años de educación:** ídem definición teórica. Variable numérica.
- **Situación actual de empleo:** ídem definición teórica. Variable categórica: empleo formal, informal, desocupado/a, jubilado/a, ama de casa o estudiante.
- **Nacionalidad:** ídem definición teórica. Variable categórica: argentino/a, boliviano, paraguayo, peruano, otros.
- **Cobertura médica:** ídem definición teórica. Variable dicotómica: si o no.

VARIABLES RELACIONADAS CON ANTECEDENTES

- **Antecedentes personales:** ídem definición teórica. Variable categórica: HTA, DBT, obesidad, enfermedades cardiovasculares, respiratorias, obesidad, cualquier tipo de cáncer o discapacidad física.
- **Antecedentes familiares de depresión:** ídem definición teórica. Variable dicotómica: si o no.
- **Antecedentes familiares de otros trastornos mentales:** ídem definición teórica. Variable dicotómica: si o no.
- **Consumo de medicación actual:** ídem definición teórica. Variable dicotómica: si o no.
- **Consumo actual de psicofármacos:** ídem definición teórica. Variable dicotómica: si o no.
- **Consumo de drogas:** ídem definición teórica. Variable dicotómica: si o no.
- **Consumo de tabaco:** ídem definición teórica. Variable dicotómica: si o no.
- **Consumo de alcohol:** ídem definición teórica. Se explorará a través del test de Cage. Consta de cuatro preguntas. Dos respuestas afirmativas tienen una sensibilidad del 77% y 79% de especificidad, sin embargo tiene solo 53% y 70% para el diagnóstico de consumo no saludable. Al utilizarse como herramienta de rastreo, una sola respuesta afirmativa debería considerarse como positivo y complementarse con preguntas acerca de cantidad y frecuencia de consumo.²² Variable ordinal.
- **Auto-percepción del estado de salud:** es el propio reconocimiento de la salud de un individuo. Se trata como variable ordinal, que será evaluada con una escala decreciente de cinco puntos: si lo consideran como excelente, buena, regular, mala o muy mala.

VARIABLES RELACIONADAS CON EL SÍNDROME DEPRESIVO

- **Estado de ánimo depresivo:** estado de tristeza, desánimo, sin energía, desesperanza o depresión. Variable categórica con las

siguientes opciones de respuesta: nunca, varios días, más de la mitad del tiempo o casi todos los días (en las últimas dos semanas).

- **Anhedonia:** pérdida de interés o placer en la mayoría o todas las actividades de la vida diaria. Variable categórica con las siguientes opciones de respuesta: nunca, varios días, más de la mitad del tiempo o casi todos los días (en las últimas dos semanas).

Tipo de estudio y diseño.

Se trata de un estudio observacional de validación de instrumento.

Población:

a. Universo o población objetivo;

Personas de ambos sexos, mayores de 18 años.

b. Unidad de análisis, criterios de inclusión y exclusión;

Personas de ambos sexos mayores de 18 años, que puedan hablar, leer y comprender el idioma local, sean capaces de separarse de sus acompañantes, no estén demasiado enfermas para participar, se trate de pacientes ambulatorios y deseen dar su consentimiento informado.

Se considerará como criterios de exclusión a las siguientes situaciones: pacientes con enfermedad grave psiquiátrica y/o física que impidan una adecuada entrevista, pacientes que no sepa leer y escribir, que no pueda brindar su consentimiento informado, pacientes embarazadas, menores de 18 años y pacientes internados.

c. Población accesible. Muestra. Selección y tamaño de la muestra. Análisis de sesgos.

Serán considerados dentro de la población accesible a todos aquellas personas de ambos sexos, mayores de 18 años que concurren ambulatoriamente para su asistencia al Programa de Medicina Interna General del Hospital de Clínicas durante el periodo 2015 – 2016.

Selección de técnica e instrumento de recolección de datos. Fuentes primarias y secundarias. Prueba piloto del instrumento

Se utilizarán datos obtenidos de fuente primaria, los datos demográficos de cada paciente serán consignados en una planilla individual. El instrumento elegido para validar es el PHQ-2 o Patient Health Questionnaire-2, que incluye sólo las dos primeras preguntas del instrumento original PHQ-9 o Patient Health Questionnaire-9. Tiene una sensibilidad del 83% y una especificidad del 92%. Estas dos preguntas son las que se refieren al estado de ánimo depresivo y a la anhedonia, en su idioma original son:

- During the two weeks, have you often been bothered by feeling down, depressed, or hopeless? (Durante las últimas dos semanas ¿se ha preocupado frecuentemente por sentirse triste, deprimido o sin esperanza?)

- During the two weeks, have you often been bothered by having little interest or pleasure in doing things? (Durante las últimas dos semanas, ¿ha estado preocupado frecuentemente por tener poco interés o placer en hacer las cosas?)

Este instrumento tiene la ventaja de su administración verbal sencilla y que sus respuestas en una escala de 0 a 3 (0=nunca; 1= varios días; 2= más de la mitad del tiempo y 3= casi todos los días en las últimas dos semanas). Una sola respuesta positiva o un score mayor a 3 (rango de 0 a 6) indican una depresión posible. En relación con su concordancia con la entrevista realizada por psiquiatras, un score mayor a 3 tuvo un Kappa de Cohen de 0.62 vs 0.54 para el diagnóstico de cualquier desorden depresivo y de 0.48 a 0.54 para depresión mayor. El análisis con la curva de ROC mostró un área bajo la curva de 0.93 para el diagnóstico de depresión mayor y de 0.90 para el diagnóstico de cualquier desorden depresivo.¹⁶

Para realizar la adaptación transcultural y validación de los instrumentos seleccionados se procederá a cumplimentar con los siguientes pasos:

Obtener la autorización de los autores: en este punto del proyecto será conveniente tomar contacto con los autores de manera tal que, además de obtener su permiso se logre una vía para eventuales consultas.

Traducción directa del idioma original de los instrumentos: dos versiones del idioma original diferentes e independientes serán obtenidas de dos traductores con conocimiento acerca de la temática. El propósito de esta etapa es lograr una equivalencia en los conceptos de los términos traducidos, simplificarlos y evitar en estas versiones cuestiones culturales que pudieran ser ofensivas o malinterpretadas en nuestro ámbito.

Discusión de las traducciones con un panel de expertos: la finalidad de esta etapa es detectar los problemas (como discrepancias) surgidos de las traducciones a través de la consulta con un panel de expertos o grupo con experiencia en el tema. Los puntos a considerar serían:

- a) Que las preguntas y respuestas posibles tengan el mismo sentido tanto para los encuestadores como para los encuestados.
- b) Evitar ambigüedades
- c) Facilitar la comprensión de cada pregunta y respuesta.
- d) Obtener respuestas lo más exhaustivas posibles.

Al finalizar esta etapa se debería obtener una primera versión (Beta 1) de las encuestas traducidas al idioma local.

Traducción inversa: a partir de la primera versión obtenida se retraducirá al idioma original con la idea de comparar los instrumentos y asegurar que se lograron mantener los conceptos originales. Esta etapa será realizada por otros dos traductores ciegos del instrumento original y

preferentemente nativos del idioma original, para la obtención de dos versiones de retraducción.

Revisión: en esta etapa se revisan las dos versiones por parte de un comité de expertos con los traductores, comparando las distintas versiones con el original. Finalmente se obtendrá una versión única por consenso.

Pre-test cualitativo o prueba piloto: es la prueba de campo de la última versión. Se administrará la encuesta a personas semejantes a la muestra con la finalidad de identificar preguntas que generen dificultades y solucionarlas a través de entrevistas semiestructuradas que permitan obtener una versión mejorada. Se realizarán 10 entrevistas y se generarán las modificaciones necesarias, repitiéndose esta secuencia hasta la obtención de una encuesta aceptable. Para la realización de las entrevistas se confeccionará una guía que defina claramente aspectos como su duración, claridad de las preguntas e instructivos, comprensión, registro escrito de motivos de falta de comprensión o claridad, formulación alternativa de las preguntas e interpretación conceptual. La muestra en esta etapa será no probabilística e intencional y se incluirán al menos 50% de personas con nivel primario de educación.

Obtención de la versión final: luego de finalizado el proceso anterior, la versión final deberá ser aceptable, con una modalidad de administración definida, un diseño de la encuesta, con preguntas comprensibles y pertinentes.

Luego de la obtención de la versión final, esta se evaluará con respecto a:

Confiabilidad: se evaluará la confiabilidad del instrumento a través de:

- a) *Reproducibilidad* (estabilidad) por medio del Test-Retest. Para ello se aplicará el instrumento a 10 personas en dos ocasiones repetidas y distanciadas por un período de 10 días por un mismo encuestador (confiabilidad intra observador). Además, se valorará la equivalencia de la encuesta obtenida en otro grupo de 10 personas por dos encuestadores diferentes (confiabilidad inter observador).
- b) *Consistencia interna:* se evaluará el grado de correlación de las dos preguntas que componen el instrumento. Para ello se utilizará el Coeficiente Alfa de Cronbach.

Validez interna: al carecer de un Gold Standard, la validez de criterio se realizará a través del diagnóstico de un psiquiatra a quien se mantendrá ciego de los resultados de la encuesta.

Plan de análisis de los resultados.

Para la evaluación de la confiabilidad del instrumento en la fase de Test-Retest se utilizará las variables continuas el Coeficiente de Correlación

Intraclase y se aceptarán valores iguales o mayores a 0.85. Para analizar el acuerdo en variables categóricas, dicotómicas o nominales se utilizará el Coeficiente Kappa de Cohen se aceptarán superiores a 0.6 (siguiendo a Altman, 1991).

Para la evaluación de la consistencia interna se aplicará el Coeficiente Alpha de Cronbach que evalúa la magnitud en que diferentes ítems están relacionados entre sí. Se aceptarán valores entre 0.7 a 0.9 (valores mayores indican redundancia).

Para evaluar la validez de criterio se utilizará el Coeficiente Kappa de Cohen.

Short Patient Health Questionnaire (PHQ-2)

Over the past two weeks, how often have you been bothered by any of the following problems?	
Little interest or pleasure in doing things?	0 = Not at all 1 = Several days 2 = More than half the days 3 = Nearly every day
Feeling down, depressed, or hopeless	0 = Not at all 1 = Several days 2 = More than half the days 3 = Nearly every day
Total point score:	

Score interpretation^[1]:

PHQ-2 score	Probability of major depressive disorder (percent)	Probability of any depressive disorder (percent)
1	15.4	36.9
2	21.1	48.3
3	38.4	75.0
4	45.5	81.2
5	56.4	84.6
6	78.6	92.9

Reference:

1. Kroenke K, Spitzer RL, Williams JB. The Patient Health Questionnaire-2: validity of a two-item depression screener. *Med Care* 2003; 41:1284.

PHQ-2 reproduced with the permission of Pfizer Inc.

Test de Cage

C ¿Ha sentido alguna vez que debe beber menos?

A: ¿Le ha molestado que la gente lo critique por su forma de beber?

G: ¿Alguna vez se ha sentido mal o culpable por su forma de beber?

E: ¿Alguna vez ha necesitado beber por la mañana para calmar los nervios o eliminar

molestias por haber bebido la noche anterior?

Conclusión y recomendaciones para el futuro

A través de la siguiente investigación esperamos obtener la versión adaptada al idioma local del instrumento de diagnóstico de depresión PHQ-2 con similares propiedades psicométricas que su versión original en inglés.

En Argentina se carece de datos válidos que nos describan la situación de esta patología en diferentes ámbitos, pero especialmente en atención primaria de la salud. Para el conocimiento de dichos datos es necesario contar con una herramienta de sencilla aplicación y de uso en el limitado tiempo de una consulta, que permita no sólo una orientación diagnóstica del paciente individual sino su uso a nivel poblacional.

References:

- KESSLER RC, ORMEL J, PETUKHOVA M ET AL. DEVELOPMENT OF LIFETIME COMORBIDITY IN THE WORLD HEALTH ORGANIZATION WORLD MENTAL HEALTH SURVEYS. *ARCH GEN PSYCHIATRY* 2011;68:90
[HTTP://WWW.NCBI.NLM.NIH.GOV/PUBMED/21199968](http://www.ncbi.nlm.nih.gov/pubmed/21199968)
- Rubinow DR. Treatment strategies after SSRI failure--good news and bad news *N Engl J Med.* 2006 Mar 23; 354(12):1305-7.
<http://www.ncbi.nlm.nih.gov/pubmed/16554533>
- World Health Organization. Fact sheet N°369 October 2012
<http://www.who.int/mediacentre/factsheets/fs369/en/>
- Cuijpers P, Smit F. Excess mortality in depression: a meta-analysis of community studies. *J Affect Disord.* 2002 Dec;72(3):227-36
<http://www.ncbi.nlm.nih.gov/pubmed/12450639>
- U.S. Preventive Task Force. Screening for depression: recommendation and rationale. *Ann Intern Med* 2002;136:760-764
<http://www.ncbi.nlm.nih.gov/pubmed/12020145>
- Mulrow CD, Williams JW Jr, Gerety MB et al. Case-finding instruments for depression in primary care settings. *Ann Intern Med* 1995;22 : 913-921.
<http://www.ncbi.nlm.nih.gov/pubmed/7755226>
- Organización Panamericana de la Salud. Washington DC 2012. Día Mundial de la Salud Mental: la depresión es el trastorno mental más frecuente.
http://www.paho.org/arg/index.php?option=com_content&view=article&id=1047:da-mundial-de-la-salud-mental:-la-depresin-es-el-trastorno-mental-ms-frecuente-&Itemid=236
- Bonicatto S., Dew Am, Soria JJ. Analysis of the psychometric properties of the Spanish version of the Beck Depression Inventory in Argentina. *Psychiatry Res.* 1998 Jul 13;79(3):277-85
<http://www.ncbi.nlm.nih.gov/pubmed/9704874>
- Leiderman EA, Lolich M, Vázquez GH, Depression: point-prevalence and socio demographic correlates in a Buenos Aires community sample

- Disord*;136(3):1154-8, 2012 Feb. 1573-2517
<http://www.ncbi.nlm.nih.gov/pubmed/22036799?dopt=Abstract>
- U.S. Preventive Services Task Force. *Ann Intern Med.* 2009;151(11):784
<http://www.ncbi.nlm.nih.gov/pubmed?term=19949144>
- National Institute for Health and Clinical Excellence. Depression, clinical guideline 90. October 2009.
<http://www.nice.org.uk/nicemedia/live/12329/45890/45890.pdf>
- Canadian Task Force on Preventive Health Care, Joffres M et al. *CMAJ.* 2013;185 (9):775. <http://www.ncbi.nlm.nih.gov/pubmed?term=23670157>
- Beck AT, Guth D, Steer RA et al. Screening for major depression disorders in medical inpatients with the Beck Depression Inventory for Primary Care. *Behav Res Ther.* 1997;35(8):785
<http://www.ncbi.nlm.nih.gov/pubmed?term=9256522>
- Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. *J Gen Intern Med.* 2001; 16(9):606
<http://www.ncbi.nlm.nih.gov/pubmed?term=11556941>
- Henkel V, Mergl R, Kohnen R et al Identifying depression in primary care: a comparison of different methods in a prospective cohort study. *BMJ.* 2003 Jan; 326(7382):200-1.
<http://www.ncbi.nlm.nih.gov/pubmed?term=12543837>
- Kroenke K, Spitzer RL, Williams JB. The Patient Health Questionnaire-2. Validity of a two-item depression screener. *Medical care.* 2003. 41(11):1284-1292. <http://www.ncbi.nlm.nih.gov/pubmed/14583691>
- Aiken LR, Varela Domínguez W. Test psicológicos y evaluación. 2003 ISBN 970-26-0431-1.
- American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), American Psychiatric Association, Arlington, VA 2013.
- Tylee A, Gandhi P. The importance of somatic symptoms in depression in primary care. *Prim Care Companion J Clin Psychiatry.* 2005;7(4):167-76
<http://www.ncbi.nlm.nih.gov/pubmed?term=16163400>
- Ministerio de Salud de la Nación. Guía de Práctica Clínica Nacional de Tratamiento de la Adicción al Tabaco 2014.
http://www.msal.gov.ar/images/stories/bes/graficos/0000000536cnt-2014-09_guia-tratamiento-adiccion-tabaco2014.pdf
- Saitz R. Clinical practice. Unhealthy alcohol use. *N Engl J Med.* 2005;352(6):596. <http://www.ncbi.nlm.nih.gov/pubmed?term=15703424>
- Maisto SA, Saitz R. Alcohol use disorders: screening and diagnosis. *Am J Addict.* 2003;12 Suppl 1:S12.
<http://www.ncbi.nlm.nih.gov/pubmed?term=14972777>
- Majdalani MP, Aleman M, Fayanás R. et al. Validation of a short questionnaire to use in clinical consultations to detect gender violence. *Rev*

- Panam Salud Publica.* 2005 Feb;17(2):79-83.
<http://www.ncbi.nlm.nih.gov/pubmed/15826384>
- Casal ER, Velásquez EN, Mejía RM et al. Screening colorectal cancer. Perception and behavior of the population. *Medicina (B Aires)*. 2009;69(1 Pt 2):135-42 <http://www.ncbi.nlm.nih.gov/pubmed/19414294>
- Braun S, Mejía R, Ling P et al. Tobacco industry targeting youth in Argentina. *Tob Control.* 2008 Apr 17(2):111-7.
<http://tobaccocontrol.bmj.com/content/17/2/111.abstract>
- Braun SN, Mejía R, Barnoya J et al. Tobacco advertising and press coverage of smoking and health in 10 years of Argentinean newspapers. *CVD Prev Control* 6 (3) 71-802011 <http://www.ncbi.nlm.nih.gov/pubmed/24032052>

ESTUDIO DE EFICACIA DE UN PROGRAMA DE MEJORA EN EL MANEJO DEL HOSTIGAMIENTO ENTRE PARES (BULLYING) EN EL ÁMBITO ÁULICO EN DOCENTES DE NIVEL PRIMARIO DE LA CIUDAD DE BUENOS AIRES. ESTUDIO DE LAS CREENCIAS DE LOS DOCENTES SOBRE LOS FACTORES CAUSALES Y ACCIONES PREVENTIVAS

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Abstract

The effectiveness of a program to improve the management of violence is evaluated specifically in terms of enlightenment and awareness of causal and preventive factors of peer harassment, and bullying in schools in Buenos Aires City. It is considered that the attitude of teachers in relation to episodes of harassment in pairs, depends on the beliefs that they have about causal and preventive factors. Therefore, this study is a critical study. The design is to participate in a workshop of six meetings for half an hour each, in which different training devices and techniques will be developed to modify the beliefs and to indirectly improve the management of violence by teachers. However, this study will be compared with a control group.

Keywords: Bullying, peer harassment, beliefs, teachers, violence

Resumen

Se evaluará la eficacia de un programa de mejora en el manejo de la violencia, más específicamente en cuanto al esclarecimiento y concientización de los factores causales y preventivos del hostigamiento de pares, Bullying, en el ámbito áulico en docentes de la Ciudad de Buenos Aires. Se considera que la actitud de los docentes con relación a los episodios de hostigamiento de pares depende de las creencias que los mismos tienen acerca de los factores causales y preventivos. Por ello, es fundamental su estudio. El diseño consiste en participar de un taller cuya duración es de seis encuentros de una hora y media cada uno en el cuál se

desarrollarán diferentes dispositivos formativos y técnicas para modificar las creencias e indirectamente mejorar el manejo de la violencia por parte de los docentes. Se contrastará con un grupo control.

Palabras clave: Bullying, hostigamiento de pares, creencias, docentes, violencia

Introducción

El hostigamiento entre pares se define como el comportamiento prolongado de insulto verbal, rechazo social, intimidación psicológica y/o agresión física de un/os niño/s hacia otro que se convierte en víctima (Espelage & Swearer, 2003). En este marco, uno de los principales moduladores del comportamiento son las creencias, las cuales se comprenden como generalizaciones basadas en referencias, experiencias personales, imaginación, deducciones que sirven para interpretar, juzgar y darle sentido a la realidad, éstas permiten operar y decidir las conductas de los individuos. Por ello, es fundamental el estudio de las creencias de los docentes sobre las causas del fenómeno de hostigamiento entre pares, así como de las posibles acciones preventivas que consideran posibles, en función de aplicar programas de cambio exitosos para el manejo del mismo.

El presente estudio se basa en un diseño experimental en el que se evaluará la eficacia de un programa de mejora en el manejo de la violencia, más específicamente en cuanto al esclarecimiento y concientización de los factores causales y preventivos del hostigamiento de pares, Bullying, en el ámbito áulico en docentes de la Ciudad de Buenos Aires. Participarán 60 docentes seleccionados al azar, 30 conformarán el grupo experimental y 30 el grupo control. El diseño consiste en participar de un taller cuya duración es de seis encuentros de una hora y media cada uno en el cuál se desarrollarán diferentes dispositivos formativos y técnicas para mejorar el manejo de la violencia por parte de los docentes. Se testeará una batería de técnicas psicométricas tanto previamente al desarrollo del taller como al final del mismo. Las técnicas evalúan diferentes aspectos relacionados con las creencias que poseen los docentes acerca de la causalidad, contención y prevención de situaciones de hostigamiento y violencia en el aula. El grupo control cumplirá la función de contraste del grupo experimental, y sus participantes no serán instruidos en la temática con la finalidad de poder contrastar la eficacia del programa presentada en el grupo experimental.

Descripción del proyecto

La ley 26892, publicada en el Boletín Oficial el 4 de octubre de 2013, en la República Argentina ha visto, por una parte la necesidad de garantizar el derecho a una convivencia pacífica, integrada y libre de

violencia física y psicológica y por otra la de orientar la educación hacia criterios que eviten la discriminación, fomenten la cultura de la paz y la ausencia de maltrato físico o psicológico. Por otra la necesidad de impulsar estrategias y acciones que fortalezcan a las instituciones educativas y sus equipos docentes, para la prevención y abordaje de situaciones de violencia en las mismas.

A su vez la ley No 3285/ 09 emitida por la Legislatura de la Ciudad Autónoma de Buenos Aires promueve la obligatoriedad de realización de Jornadas de formación, actualización y capacitación sobre derechos humanos, discriminación y resolución pacífica de conflictos cuya autoridad de aplicación es la Defensoría del Pueblo de la Ciudad de Buenos Aires.

Una de las formas de violencia más frecuentes es la denominada hostigamiento entre pares o *bullying*, El hostigamiento de pares se define como el comportamiento prolongado de insulto verbal, rechazo social, intimidación psicológica y/o agresión física de un/os niño/s hacia otro que se convierte en víctima (Espelage & Swearer, 2003). Es entonces una forma de maltrato, normalmente intencionada y perjudicial de un estudiante hacia otro compañero, generalmente más débil, al que convierte en su víctima habitual; suele ser persistente, puede durar semanas, meses e incluso años. La mayoría de los agresores actúan de esa forma, motivados por un abuso de poder y un deseo de intimidar y dominar (Cerezo Ramírez, 2006). El fenómeno de hostigamiento entre pares es sistémico, ya que se produce en un determinado grupo donde hostigadores, hostigados, los no implicados, observadores o testigos, docentes, directivos y familias, también forman parte de él (Kerman, 2010; Olweus, 1978, 1998).

Existen diferentes alternativas de hostigamiento, entre ellas ignorar o hacer el vacío, no dejar participar en los juegos, insultar, poner sobrenombres que ofenden, hablar mal de él o ella, esconder cosas, romper cosas, robar cosas, pegarle, patearlo o lastimarlo, amenazarlo para que se asuste, obligarlo a un contacto físico no deseado, obligarlo a hacer cosas que no quiere con amenazas, amenazarlo con armas (palos, navajas, etc.) Cabe agregar que además existen formas virtuales de hostigamiento tal como el Cyberbullying, que se ha constituido hoy en una de las manifestaciones más frecuentes.

En investigaciones previas acerca de la prevalencia del hostigamiento en escuelas de CABA (García Coto et al., 2008, 2013) se han realizado una serie de observaciones en una muestra de 996 estudiantes de 6° y 7° grado. Desde la perspectiva de los Hostigados, las tres formas de hostigamiento más frecuentes fueron, en primer lugar que hablen mal de la víctima, (45,6%), en segundo lugar insultos y burlas (43,4%), y en tercer lugar le pongan sobrenombres que lo ofenden” (31,7%). En cuanto al Hostigador, las que más prevalecieron, los insultos, (54,2%), luego aparece hablar mal de él o ella (53,1%), en tercer lugar ignorarlo o hacerle el vacío (36,6%), en el

cuarto lugar ponerle sobrenombres que lo ofenden (36,2%). Por otra parte en los Testigos, los porcentajes de prevalencia del hostigamiento se hallaron significativamente por encima de la frecuencia encontrada en los “Hostigados” y los “Hostigadores”. Las que predominaron son, insultarlo (90,2%), luego hablar mal de él o ella (88,3%) y la tercera es ponerle sobrenombres que lo ofenden (85,2%). Las tres tipologías que predominaron en la percepción de los Testigos fueron semejantes a las que aparecieron en los Hostigadores y Hostigados.

En cuanto al espacio dónde se producía el acoso el mayor porcentaje se producía en donde no existía un control por parte de los docentes u otras autoridades, ya sea en el patio, 37,7%, en la clase sin profesor, 33%, fuera del colegio, 23,8% y por Internet, 26,9% no estando presente el profesorado. En cuanto a qué grado era quien se “mete” con el hostigado se observa, que más allá de haber un 64% de casos en que “no se meten conmigo”, existía un 32% en el que el hostigamiento provenía de la misma clase y un 15,2% que sin ser de la misma es del mismo grado. Sólo un 10% era de grados superiores y otro 10% de grados inferiores. Esto refuerza el concepto de que el hostigamiento es de pares y que no es necesario diferencias de edades, especialmente, niños mayores para que se produzca el fenómeno.

En cuanto a con quién habla estos problemas se observa que el 45,1% se comunicaba con sus amigos, un 38,9% con la familia, un 22,8% con algún compañero. Los porcentajes decaían significativamente con los profesores, 16,1% y con los adultos de la escuela, 11,4%. Ello parecería indicar cierta falencia en los mecanismos de comunicación que permiten la expresión por parte de las víctimas de sus necesidades, junto con la posibilidad de solicitar ayuda de referentes con autoridad.

En cuanto a si alguien dijo algo al hostigador por sus conductas se ha observado el porcentaje significativo de “nadie me dijo nada”, 27,6%, donde a pesar de haber sido registrado el fenómeno no parece haberse actuado sobre el hostigamiento. También llama la atención que a la respuesta “Sí, mis profesores me dijeron que estaba bien” correspondió un 8,4%, Sí, mi familia me dijo que estaba bien, un 9,1%, y Sí, mis compañeros me dijeron que estaba bien, un 12,2%.

Con el objetivo de determinar los factores que inducen a la acción espontánea o en programas ad hoc de los docentes con respecto al hostigamiento, el presente estudio se propone analizar las creencias de los mismos.

Partiendo del supuesto de que las creencias de los docentes influyen en sus actitudes para el manejo de la violencia áulica, el presente estudio se basa en un diseño experimental en el que se evaluará la eficacia de un programa de mejora en el manejo de la violencia, más específicamente en cuanto al esclarecimiento y concientización de los factores causales y

preventivos del hostigamiento de pares, Bullying, en el ámbito áulico en docentes de la Ciudad de Buenos Aires. Participarán 60 docentes seleccionados al azar, 30 conformarán el grupo experimental y 30 el grupo control. El diseño consiste en la participación del primer grupo de un taller cuya duración es de seis encuentros de una hora y media cada uno en el cual se desarrollarán diferentes técnicas de formación y capacitación docente en la temática. Se testeará una batería de técnicas psicométricas tanto previamente al desarrollo del taller como al final del mismo. Las técnicas evalúan diferentes aspectos relacionados con la contención y prevención de situaciones de hostigamiento y violencia en el aula. El grupo control cumplirá la función de contraste del grupo experimental, y sus participantes no serán instruidos en información acerca del tema ni en técnicas de manejo de la violencia áulica con la finalidad de poder contrastar la eficacia del programa presentado.

Objetivo general

Analizar los niveles de eficacia de un programa de mejora en el manejo de la violencia en el ámbito áulico en docentes de nivel primario de la Ciudad de Buenos Aires.

Objetivos específicos

Analizar las creencias acerca de las causas y de las acciones de prevención del hostigamiento de pares de los docentes de nivel primario.

Comparar las mismas entre el grupo experimental y el grupo control.

Determinar la efectividad de las actividades de formación para el cambio de creencias e indirectamente para la mejora del manejo del hostigamiento.

Marco Teórico

Se parte del supuesto de que los individuos, a través de sus interacciones con los objetos, sucesos y personas, forman creencias que, por ser portadoras de sentido, influyen en la forma en que experimentan y actúan dentro de sus contextos sociales (Creswell, 2009; Mettens, 1997). Según Dallos (1996), las creencias son un conjunto perdurable de interpretaciones y premisas acerca de lo considerado como cierto, y por lo tanto, influyen en los comportamientos de las personas. Las creencias son ideas - generalizaciones - para interpretar la realidad, basadas en referencias como ser: experiencias personales, información proveniente de otras personas, imaginación, deducciones (Kerman, 1998). Son incorporadas en nuestro marco de referencia por mecanismos de generalización, distorsión y omisión y sirven para interpretar los eventos externos o internos. Dan un sentido positivo o

negativo a la experiencia. Indican qué provocará placer o sufrimiento. No son realidades (datos). Son solamente interpretaciones de los datos (“El mapa no es el territorio”).

Valdez Cuervo, Estévez Nenninger y otros (2013) mencionan que la manera en que los docentes perciben a los estudiantes y sus comportamientos se relaciona con las estrategias que utilizan para administrar sus salones de clase. El estudio que realizaron, al abordar las creencias de los docentes con respecto al hostigamiento entre pares, permitió identificar características de las mismas que afectan de manera negativa las formas como los docentes se comportan ante éste. La información con respecto a las creencias de los docentes acerca del hostigamiento resulta importante en el diseño de programas de prevención que se enfoquen a cambiar la forma en que los docentes perciben y actúan con respecto al fenómeno de la violencia entre pares.

Según estos autores las creencias de los docentes con relación al hostigamiento de pares se caracterizan por:

- a) tender a no incluir dentro de lo que consideran como Bullying a las agresiones de índole social (Chagas, 2005; Fernández et al., 2006),
- b) considerar a las agresiones psicológicas y sociales como menos dañinas que las de tipo físico (Bauman y Del Rio, 2006; Fernández et al., 2006; Pérez, 2011), y
- c) no tener en cuenta las diferencias de poder entre el agresor y la víctima como parte de la naturaleza del Bullying, lo cual en muchas ocasiones los lleva a suponer que la víctima puede resolver por sí sola dicha situación (Harwood y Copfer, 2011; Naylor et al., 2006).

Según Salgado Levano (2012) en los diferentes estudios realizados acerca de los docentes y el hostigamiento escolar se ha concluido que los mismos no tienen información y formación acerca del fenómeno. , en ciertos casos suelen menospreciar las consecuencias del mismo por percibirlos como algo normal y característico del desarrollo del niño y el adolescente. Alfaro et al., (2010) hallaron en una investigación acerca de los conocimientos y percepciones del profesorado sobre violencia en los centros educativos públicos, que los docentes no poseen una comprensión apropiada sobre la etiología de la violencia, ni el fenómeno del hostigamiento, así como tampoco saben cómo detectar y actuar en estados de violencia escolar. Los docentes que sí poseen conocimiento del fenómeno, no actúan directamente sobre el mismo. La pasividad de los mismos se ve fundamentalmente en sus prácticas pedagógicas, en donde se observa manifestaciones evasivas del asunto, encomendando su competencia a otros contextos y actores. Es más, en algunos casos, los docentes utilizan la violencia como técnica para eliminar la misma, validando e instalando aún más el fenómeno (Magendzo et al. 2004 Citado

en Batista et al. 2010). Ergo, los garantes del desarrollo cognitivo, afectivo y social dentro de las instituciones no cumplen a cabalidad de manera responsable y eficiente con su rol, por lo que es fundamental la realización de proyectos de investigación con los docentes.

Valdez Cuervo, Estévez Nenner y otros (2013), mencionan otro grupo de estudios que han clasificado las creencias de los docentes acerca el Bullying atendiendo a las explicaciones que involucran en la problemática. De esta manera se han identificado tres grupos de creencias, según atribuyan el Bullying a:

- a) particularidades normales del desarrollo (Fierro, 2005; Harwood y Copfer, 2011);
- b) conductas asociadas a factores fuera de la escuela, tales como la familia y los medios de comunicación, entre otros (Chagas, 2005; Gómez Nashiki, 2005; Sahin, 2010); y
- c) comportamientos originados por dificultades en el funcionamiento de la escuela y las estrategias de los propios docentes para manejarlo (Collins et al., 2011; Valdez et al., 2011). Refieren que por lo general los docentes tienden a reconocer dificultades para manejar situaciones de violencia en la escuela y desconocer formas efectivas para el manejo de dichas conductas (Alfaro et al., 2010; Nesdale y Pickering, 2006; Ochoa y Peiró, 2010).

En cuanto a los factores causales socio familiares, Moreno, Vacas Díaz, y Roa Venegas (2006), las vinculan con las distintas características que las familias utilizan en sus dinámicas. Entre otras, mencionan que una excesiva permisividad por parte de los padres, el no dejar claros los límites, puede producir comportamientos agresivos (Rigby, Slee y Cunningham, 1999). Aunque el temperamento del chico ayude, un excesivo poder agresivo y el castigo físico por parte de los padres, hace que sus hijos desarrollen conductas violentas (Schwartz, Dodge, Pettit y Bates, 1997).

Por otra parte si el niño ve que en su hogar se producen conductas de victimización o son maltratados por sus cuidadores, también tendrán más probabilidad de desarrollar y recibir comportamientos agresivos; de ahí la responsabilidad e importancia familiar en su evitación (Shields, Cicchetti, 2001; Neufeld, 2002). Su trabajo refiere que el valor del estudio radica en la confirmación de la importancia que el clima sociofamiliar puede tener en la génesis de las conductas Bullying y sostienen que se han cumplido las hipótesis planteadas, observando que cuando la vida familiar se rige por estrechas reglas, o las familias son conflictivas, el trato percibido, tanto de la familia como en la escuela, por los niños y adolescentes, es deficiente,

además de aumentar la probabilidad de comportamientos sociales desadaptados por parte de los hijos. Se confirman así los estudios de Junger (1996). Mencionan, por otro lado, que cuando en la familia existen, vías para la expresión de los sentimientos y se anima a que sus miembros actúen libremente, cuando los intereses culturales, así como los sociales y recreativos son cultivados, cuando se organizan las responsabilidades familiares y cuando hay cohesión, es decir, ayuda, compenetración y apoyo entre los miembros, la probabilidad de comportamientos victimizadores, o sufrir mal trato en la escuela y en la casa, es baja o nula.

Un estudio dirigido por Hooven y Gottman (1997), demostró que aquellos padres que mantenían con sus hijos una relación afectiva positiva estos se desarrollaban más aptos socialmente, y por el contrario, aquellos hijos de padres con una inmadurez emocional son menos hábiles en sus relaciones sociales. Además, estos últimos conocen menos sus propias emociones; tienen menos autocontrol; sufren más altibajos emocionales; están menos relajados biológicamente puesto que presentan un mayor número de hormonas en sangre relacionadas con el estrés y el nivel de activación emocional.

Se ha de considerar además el concepto de modelos familiares entre los causales del hostigamiento. Estos se desarrollan en el “Argumento familiar”, plan o programa concebido en la infancia, sobre la base de las influencias parentales, y luego olvidado o reprimido, pero que continúa sus efectos rigiendo los aspectos más importantes de la vida (Atalaya, 1992; Kerman, 1998). Los niños basan sus conductas en aprendizajes de roles familiares. Asimilan los mismos a través de dos mecanismos:

1. Imitación, repitiendo lo que observan en las figuras parentales significativas.
2. Complementación: ajustándose a la misma en roles complementarios o interdependientes (por ejemplo madre sobreprotectora, hijo dependiente / Padre agresivo, hijo sometido), o asumiendo directamente la conducta opuesta a la del progenitor.

Luego trasladan los aprendizajes del sistema familiar a otros sistemas sociales reproduciendo estos roles con actores complementarios similares a los de sus familias.

Por otra parte, al pensar en las interacciones familiares como determinantes o causales de modelar las conductas de sus miembros, se hace necesario explicar las características de la dinámica familiar ante situaciones de Stress que la impactan. (Kertész y Kerman, 1984). Estos son estresores significativos para las familias. Se los puede describir en el modelo EPREC para la comprensión de las fases del encuentro entre los estresores y el núcleo familiar. Se parte de la definición de Mc Cubbin y Patterson (1982) sobre estresores familiares: “evento vital, que impacta sobre el grupo

familiar, produciendo o teniendo el potencial de producir un cambio en ese sistema social” (p. 29).

Los autores mencionan la importancia de trabajar con un modelo definido. El modelo EPREC reconoce:

- El Estímulo que puede ser único o la acumulación de estresores a lo largo de un período de tiempo.
- La Personalidad de cada uno de los integrantes por separado, o bien la sumatoria de las personalidades de los miembros: la “personalidad familiar” como un resultado de sus interacciones, hasta la decisión final de un grupo en cuanto al significado de un estresor.
- La Respuesta, consistiendo en las conductas adoptadas a partir de la decisión ante el estresor; que pueden ser inmovilidad; fuga o alejamiento; lucha o eliminación; adaptación o resistencia.
- La Consecuencia, es decir, si se logró el enfrentamiento y la resolución exitosa del estresor, o si se produjo una crisis o imposibilidad de capeo efectivo.

Para poder determinar si se logra un Capeo / afrontamiento efectivo o Adaptativo, o por el contrario se produce un capeo desadaptativo, estos autores mencionan las variables a tener en cuenta durante el análisis:

- Evaluación del estresor
- Enfoque del problema o estímulo
- Análisis
- Comprensión de las necesidades de los demás
- Canales de comunicación
- Roles
- Conciencia de los recursos y usos de los mismos
- Agresividad verbal o física
- Uso de alcohol o drogas
- Afecciones Psicósomáticas o psiquiátricas

Finalmente este trabajo menciona que tanto las consecuencias del Capeo, como las de las Crisis, constituyen nuevos Estímulos que sirven de aprendizaje, cerrando un circuito. Como tales, en caso favorable, engrosan el repertorio de recursos en las familias. En casos desfavorables son ignorados, repitiéndose los mismos errores en el futuro.

Con relación a los factores causales referidos al sexo y la edad, Moreno Moreno, Vacas Díaz y otros, refieren que estas variables son mencionadas en múltiples trabajos, como elementos importantes en la explicación del Bullying, lo que hace pensar que otros componentes están actuando en estos comportamientos (Bendixen, 1999; Olweus y Mattson, 1988). Las chicas aparecen menos involucradas en problemas de victimización. Mencionan que no se debe perder de vista que aunque la

forma más frecuente de estas conductas son los insultos y los golpes, a veces los comportamientos de victimización pueden ser muy sutiles; las chicas utilizan con mayor frecuencia la victimización indirecta (rumores falsos, exclusión social, etc.) y , ésta es más difícil de detectar y por consiguiente de cuantificar (Sourander, Helstelg, Helenius y Piha, 2000; Moretti y Odgers, 2002).

En cuanto a las diferencias según el sexo de los participantes García Coto, y Kerman (2013) observan que desde la perspectiva del Hostigado, las mujeres poseen mayores niveles de percepción de que “La ignoran o le hacen el vacío” que los hombres, mientras que los hombres poseen una mayor percepción de que “Lo insultan o burlan” y “Le pegan” que las mujeres. Desde la perspectiva del Hostigador, se observan diferencias estadísticamente significativas a Análisis descriptivo de situaciones de maltrato a favor de los hombres en cuanto a “Insultarlo”, “Ponerle sobrenombres que lo ofenden”, “Romperle cosas”, “Robarle cosas”, “Pegarle, patearlo o lastimarlo” y “Amenazarlo para que se asuste”. Estos resultados permiten inferir que si bien existen formas comunes de hostigamiento, los hombres poseen estilos de hostigamiento más definidos que las mujeres. Desde la perspectiva del Testigo se observa que las mujeres poseen una percepción mayor que los hombres en “Hablar mal de él o ella”, mientras que los hombres perciben más que las mujeres el “Insultarlo”, “Pegarle, patearlo, lastimarlo” y “Amenazarlo para que se asuste”.

Finalmente podemos agregar ante toas estas hipótesis, se ha desarrollado un modelo ecológico para integrar las diferentes perspectivas del fenómeno, que analiza la violencia desde una visión evolutiva y con diferentes niveles ya sea escolar, familiar, colaboración escuela familia. Medios de comunicación y el influjo de los medios de comunicación o el conjunto de creencias, de valores y estructuras de la sociedad (Díaz et al. 2011). Describe cuatro niveles o sistemas que operarían paralelamente afectando el desarrollo del niño

Microsistema: familia, el grupo de pares, el colegio, el vecindario, el ámbito más próximo a ellos.

Mesosistema: Comprende las interrelaciones de dos o más entornos (microsistemas) en los que la persona en desarrollo participa, los padres con docentes para educar a los niños.

Exosistema: Incluyen todas las redes externas mayores que las anteriores como las estructuras del barrio, la localidad y la urbe.

Macrosistema: Se trata de los valores culturales y políticos de una sociedad, los modelos económicos y condiciones sociales.

En cuanto a las estrategias que suelen utilizar los docentes para el manejo del Bullying se han dividido en reactivas, mismas que se

manifiestan como respuesta directa a situaciones de Bullying, dentro de las cuales se encuentran hablar con los involucrados, reunir a los padres y castigar a los agresores, entre las más mencionadas (Dake et al., 2003); y proactivas, que son aquellas enfocadas en la prevención del fenómeno, tales como una mejor supervisión y comunicación con los estudiantes (Dake et al., 2003; Roth et al., 2010).

Material y Métodos

Diseño

Se trabajará con un diseño experimental, pre y post test con grupo control. Los participantes de ambos grupos (el de control y el experimental) se formarán al azar. (Hernández Sampieri, Fernández Collado & Baptista Lucio, 2003).

Participantes

Conformarán parte del estudio 60 docentes seleccionados al azar, 30 conformarán el grupo experimental y 30 el grupo control. Los docentes para ser elegibles tendrán que trabajar colegios de la Ciudad Autónoma de Buenos Aires, de nivel primario. Los participantes serán convocados a través de la Defensoría del Pueblo de la Ciudad de Buenos Aires

Procedimiento

El proyecto se realizará en el marco de un Convenio con la Defensoría del pueblo de la Ciudad Autónoma de Buenos Aires y dentro de la misma el Centro de Estudios para el Fortalecimiento Institucional, CEFI. Se tendrán en cuenta las condiciones de privacidad y respeto a la intimidad, garantizando el anonimato de los participantes. Para todos los individuos se propondrán las mismas condiciones de administración. Se solicitará la autorización a la Dirección de Establecimientos de Enseñanza Privada y a la Dirección de Escuelas Públicas, en los niveles primarios, para llevar adelante el programa.

En cuanto al procedimiento de formación y capacitación docente se considera más efectivo a través de talleres que con la simple información. Por ello se procederá a la instrumentación de participación en un taller cuya duración es de seis encuentros de una hora y media cada uno en el cuál se desarrollarán diferentes técnicas para mejorar el manejo de la violencia por parte de los docentes. Se testeará una batería de técnicas psicométricas tanto previamente al desarrollo del taller como al final del mismo. Las técnicas evalúan diferentes aspectos relacionados con la contención y prevención de situaciones de violencia en el aula. El grupo control cumplirá la función de contraste del grupo experimental, y sus participantes no serán instruidos en

técnicas de manejo de la violencia áulica con la finalidad de poder contrastar la eficacia del programa presentada en el grupo experimental

References:

- Atalaya, C. (1992) “El Argumento de vida en el Análisis Transaccional”, *VIII Congreso Argentino de Análisis Transaccional y Nuevas Ciencias de la Conducta*, “Actas”. Buenos Aires: Editorial Ippem.
- Berne, E. (1974) *¿Qué dice Ud. después de decir Hola?* Barcelona: Ed. Grijalbo.
- Cerezo Ramírez, F. (2001). Variables de personalidad asociadas a la dinámica bullying (agresores versus víctimas) en niños y niñas de 10 a 15 años. *Anales de Psicología*, 17, 37-44.
- Cerezo Ramírez, F. (2006). Análisis comparativo de variables socio-afectivas diferenciales entre los implicados en bullying. Estudio de un caso de víctima provocador. *Anuario de Psicología Clínica y de la Salud*, 2, 27-34.
- Cerezo Ramírez, F. (2008). Agresores y víctimas del bullying: desigualdades de género en la violencia entre escolares. *Información Psicológica*, 94, 49-59. *Análisis descriptivo de situaciones de maltrato*
- Cowie, H.; Jennifer, D. y Sharp, S. (2003). “Violence in schools: UK, en P.K. Smith (ed.), *Violence in schools: The perspective from Europe*. Londres: Routledge.
- Defensor del Pueblo (2000). *Violencia escolar: El maltrato entre iguales en la Educación Secundaria Obligatoria*. Madrid: Defensor del Pueblo.
- Defensor del Pueblo (2007). *Violencia escolar: El maltrato entre iguales en la Educación Secundaria Obligatoria 1999-2006*. Madrid: Defensor del Pueblo.
- Farrington, D. P. (2002): “Risk factors for youth violence”, en E. Debardeux y C. Blaya (eds.), *Violence in schools and Public Policies*. París: Elsevier, págs. 13-32.
- García Coto, M. A., Kerman, B., Sinigagliesi, F., Knallinsky, M., Molinari, F., Kelly, Ma., Mures, G.(2014). Análisis descriptivo de situaciones de maltrato desde la perspectiva del hostigador, el hostigado y los testigos en estudiantes de nivel inicial de la ciudad de buenos aires. Diferencias según el sexo de los participantes. *HOLOGRAMATICA - Facultad de Ciencias Sociales UNLZ Año XI, Número 21, V3*, pp.43-58 ISSN 1668-5024.
- Gulbenkian Foundation (1995): *Children and Violence*, informe de la Commission on Children and Violence. Londres: Calouste Gulbenkian Foundation.
- Kerman, B, et al, (1998). *Nuevas ciencias de la conducta, Aplicaciones para el tercer milenio*. (3 ed.). Buenos Aires: Ed. Universidad de Flores.

- Kerman, B. (2010). Una Visión Panorámica del fenómeno Bullying. *Calidad de Vida, Universidad de Flores*, 5, 159-173.
- Kertész, R.; Atalaya, C.; Kertész, A., (1997) *Análisis Transaccional Integrado*. (2ª ed.). Buenos Aires: Ed. Universidad de Flores.
- Kowalski, R. & Limber, S. (2007). Electronic Bullying Among Middle School Students. *Journal of Adolescent Health*, 41, 22–30.
- Olweus D (1998). *Conductas de acoso y amenaza entre escolares*. Madrid: Morata.
- Olweus, D. (1978). *Aggression in the schools: Bullies and whipping boys*. Washington: Hemisphere.
- Ortega, R. (1994). “Violencia interpersonal en los centros educativos de Enseñanza secundaria. Un estudio sobre el maltrato e intimidación entre compañeros”. *Revista de educación*.
- Ortega, R. (1994). Violencia Interpersonal en los Centros Educativos de Educación Secundaria. Un Estudio sobre el Maltrato e Intimidación Entre Compañeros. *Revista de Educación*, 304, 253-280.
- Salgado, Lévano, C. (2012). “Revisión de las investigaciones acerca del bullying: desafíos para su estudio”. En Benitez, L. et al. *Bullying y convivencia en la escuela aspectos conceptuales, aplicativos y de investigación*. Lima: OBSERVATORIO sobre Violencia y Convivencia en la Escuela, 127-177
- Serrano, A. (2006). Acoso y violencia en la escuela. Cómo detectar, prevenir y resolver el Bullying. Barcelona: Ariel.
- Trautmann, A. (2008). Maltrato entre pares o “bullying”. Una visión actual. *Revista Chilena de Pediatría*, 79(1), 13-20.
- Valdez Cuervo; Estevez Nenninger, y otros (2013). Creencias de docentes acerca del Bullying. *Perfiles educativos*, 145, 51-64.

ANTROZOLOGÍA: DEFINICIONES, ÁREAS DE DESARROLLO Y APLICACIONES PRÁCTICAS PARA PROFESIONALES DE LA SALUD

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Abstract

Human nature has been molded by its interactions with animals, and these have played an essential role in the development of human societies by providing material, instrumental, and emotional resources. Despite the undeniable importance of animals in different aspects of human life, the scientific community has neglected the study of the interaction between human and other species until recently. This was the focus of interest of the anthrozoology: young interdisciplinary science devoted in the study of the interactions between human beings and animals. Anthrozoology has received a growing interest since its origin, little longer than thirty years ago, with a steady increase in its developments and publications. We performed a review of the scientific literature and present the development of a thematic group which comprehends five areas: (1) Involved evolutionary factors, (2) Developmental and learning processes, (3) Associated cultural, collective, and individual factors, (4) Health and well-being, and (5) Animals in the human family. Also, we discuss the anthrozoology developments according to its relevance and usage in health professionals' clinical practice.

Keywords: Anthrozoology, health, human-animal interaction, clinical practice

Resumen

La naturaleza humana se ha moldeado a través de las interacciones con animales, y éstos han desempeñado roles fundamentales en el desarrollo de las sociedades humanas proveyendo recursos materiales, instrumentales y emocionales. Pese a la innegable importancia de los animales en diversos aspectos de la vida humana, la comunidad científica ha ignorado el estudio de la interacción entre humanos y otras especies hasta hace poco. Este fue el foco de interés de la antrozoología: Joven ciencia interdisciplinaria abocada al estudio de las interacciones entre humanos y animales. La antrozoología ha despertado interés creciente desde su origen hace apenas poco más de treinta años, con un incremento sostenido en sus desarrollos y publicaciones. Se revisa la literatura científica y se presentan los desarrollos en una agrupación temática comprendiendo cinco áreas: (1) Factores evolutivos implicados, (2) Procesos de desarrollo y aprendizaje, (3) Factores culturales, grupales e individuales asociados, (4) Salud y bienestar, y (5) Los animales en las familias humanas. Se discuten los desarrollos en antrozoología en función de su relevancia y aplicación en la práctica clínica de profesionales de la salud.

Palabras clave: Antrozoología, práctica clínica, interacción humano-animal, salud

Introducción

Los animales no humanos⁶² han tenido una profunda influencia en las diversas sociedades humanas desempeñando un rol fundamental a lo largo de la historia de la humanidad (York & Mancus, 2013). Su presencia en la vida del hombre se evidencia permanentemente y en diversos contextos sociales; ya sea proveyendo a los humanos de comida y ropa, siendo participantes en investigaciones, mejorando la salud, ofreciendo entretenimiento, placer y compañía (Amiot & Bastian, 2014). Así, los animales desempeñan un rol en casi todos los aspectos de la vida cultural y psicológica de las personas (Herzog, 2011), constituyéndose como uno de los componentes naturales dotado de un alto significado socioeconómico, científico y cultural de una nación (Páramo & Galves, 2011).

Se considera que los vínculos afectivos con los animales fueron decisivos en el proceso evolutivo de la especie humana (Páramo y Galves,

⁶² En adelante se utilizará el término 'animal' para hacer referencia a otras especies distintas al *homo sapiens*, distinguiendo así los animales no humanos de los seres humanos.

2011) y que nuestra naturaleza ha sido moldeada mediante las interacciones con éstos (Sheldrake, 2008). Sin embargo las actitudes humanas hacia los animales han aparecido como extraordinariamente variables y arbitrarias en las diversas culturas. Es factible que estas diferencias tengan un origen materialista —existen o existieron motivos económicos relacionados—, como así también determinadas connotaciones emocionales y simbólicas particulares (Kobayashi, 2011; Serpell, 1996b).

Pese a la importancia de los animales en diversos aspectos de la vida humana, hasta hace poco la comunidad científica ha ignorado el estudio de la interacción entre humanos y las demás especies (Herzog, 2012). Por ejemplo a pesar de la innegable influencia de los animales en las sociedades humanas la presencia e importancia teórica de los mismos ha sido pasada por alto en la teoría sociológica (York & Mancus, 2013). Cabe señalar que el foco sociológico convencional se hace en el lenguaje como el vehículo de la comunicación por el cual los significados fundamentales son compartidos en la interacción; desde esta perspectiva prácticamente se han excluido los intercambios sociales entre humanos y animales no parlantes (Sanders, 1999). Otro tanto se da en psicología, desde donde tradicionalmente se investigó utilizando animales para el desarrollo de modelos humanos de comportamiento y para la comprensión de procesos humanos básicos, pero que a pesar del impacto mutuo de humanos y animales en la vida de ambos, escasamente ha estudiado la temática referida a las relaciones humano-animal; siendo este un aspecto importante del ámbito de la actividad del ser humano (Amiot & Bastian, 2014). Para Herzog (2011) las actitudes, comportamientos y relaciones con otras especies se encuentran entre los tópicos que la mayor parte de la gente halla fascinante y que los psicólogos han mayormente ignorado (Herzog, 2011).

La distinción entre humanos socialmente avanzados, humanos primitivos y animales, fue crucial en la definición del objeto de estudio sociológico. En tanto los primeros sociólogos consideraron las relaciones entre humanos como cualitativamente diferentes de las relaciones entre miembros de otras especies, pudieron definir a la sociología como el estudio de estos animales socialmente avanzados (Redmalm, 2013). Y en este orden de cosas se configuró el punto de inicio que incrementó el interés en el fértil campo de la antrozoología (York & Mancus, 2013).

En la actualidad las actitudes hacia los animales han cambiado, y durante las últimas tres décadas las relaciones entre personas y otros animales se convirtieron en un área respetable de investigación (Podberscek, Paul, & Serpell, 2005). Los estudios humano-animal constituyen un “campo interdisciplinario que investiga los lugares que los animales ocupan en el mundo social y cultural humano y las interacciones que los humanos tienen con ellos” (DeMello, 2012, p.4). Dentro de dicho campo se destaca la

antrozología como “el estudio científico de la interacción humano-animal, y de los vínculos humano-animal” (DeMello, 2012, p.5). El foco de investigación está puesto en las relaciones interactivas y recíprocas entre humanos y animales. Este enfoque contrasta con la investigación psicológica previa donde los animales ocupaban un rol más instrumental, para dar cuenta de un amplio dominio de la actividad humana: cómo interactuamos y nos relacionamos con los animales (Amiot & Bastian, 2014).

El campo llamado antrozología conecta una amplia gama de disciplinas que incluyen: antropología, arte, literatura, educación, etología, historia, psicología, sociología, filosofía, medicina humana y veterinaria (Arcken Cancino, 2011; Podberscek, Paul, y Serpell, 2005). Inevitablemente su investigación resulta multidisciplinaria conforme el alcance de sus estudios resulta de interés para un amplio espectro de áreas académicas, y la disparidad de contextos —hogares, laboratorios, zoológicos, salvajes— en los que se despliegan las interacciones humano-animal (Hosey & Melfi, 2014).

Durante los últimos treinta años ha habido un creciente interés en el estudio de las interacciones humano-animal, llevándose a cabo dentro de este novel campo abundante investigación y múltiples publicaciones (Hosey & Melfi, 2014; Walsh, 2009a). Se han desarrollado revistas científicas dedicadas a la antrozología; entre las más destacadas se encuentran *Anthrozoös* y *Society and Animals*. Los desarrollos científicos en este campo llevaron también a la creación de asociaciones como: *Pet Partners*, *Research Center for Human-Animal Interaction (ReCHAI)*, *Human Animal Bond Research Initiative Foundation (HABRI)* y la *International Society for Anthrozoology (ISAZ)* que celebra un congreso anual sobre antrozología. En más de ciento cincuenta universidades y facultades de Estados Unidos se dictan cursos de antrozología y recientemente la *Fundación Affinity* ha creado el primer postgrado de antrozología en España, en la Universidad Autónoma de Barcelona (Herzog, 2012; Meléndez Samó, 2014).

En Latinoamérica hay un grupo interdisciplinario creciente de profesionales e investigadores que ha desarrollado programas de diverso orden ligados a la relación humano animal, pero hay poca investigación en dicha área (Gutiérrez, Granados, & Piar, 2007). En Argentina se encuentra el *Grupo de Investigación del Comportamiento en Cánidos (ICOC)* dirigido por la Dra. Mariana Bentosela que desde el 2007 ha realizado múltiples publicaciones científicas sobre el tema (ver www.canids.com.ar). Sin embargo, posiblemente la mayor presencia de la interacción humano-animal en nuestro país sea en cuanto a los abordajes ligados a la llamada Terapia Asistida por Animales, ya sea mediante el tratamiento o dictado de cursos o posgrados. La Facultad de Ciencias Veterinarias de la Universidad de Buenos Aires y la Universidad Nacional de Rosario dictan cursos de

posgrado sobre la temática. Así también se dictan cursos a través de entidades como: *Asociación Argentina De Actividades Ecuestres para Discapacitados* (AAAEPAD), *Bocalan Argentina*, *Centro Terapia e Intervenciones Asistidas con Animales* (Centro TIACA), *Equipo de Terapias Asistidas con Perros en Pediatría* (ETAP), *Terapia Asistida con Perros Argentina* (TACOP).

Objetivos

Realizar una revisión sobre las publicaciones científicas en el marco de la antrozoología que permitan identificar posibles aplicaciones y su relevancia dentro de las prácticas de salud.

Materiales y método aplicado

El presente estudio incluyó 163 referencias, correspondientes a distintos artículos de revista científicas, capítulos de libro y libros completos. Gran parte de los artículos de investigación empírica.

La correspondiente recopilación de textos fue realizada a través de la base de datos bibliográficos Proquets, MYNCIT en junio 2013 a enero 2015. En cuanto a los criterios de búsqueda empleados se realizó la búsqueda de los siguientes términos: “interactions” + “human-animal”, “anthrozoology”, “animal”, “human-animal bonds”, “pets”. Los mismos localizados en el campo de palabras clave (*keywords-id*). Las referencias obtenidas fueron descargadas y almacenadas.

Desarrollo

La antrozoología aborda el estudio de casi todos los aspectos de nuestra interacción con las demás especies (Herzog, 2012) y por consiguiente el campo resulta diverso y amplio. Para los fines de este trabajo se efectuará una agrupación temática de los desarrollos sobre la relación humano-animal considerando las siguientes áreas: (1) Factores evolutivos implicados, (2) Procesos de desarrollo y aprendizaje, (3) Factores culturales, grupales e individuales asociados, (4) Salud y bienestar, y (5) Los animales en las familias humanas.⁶³

⁶³ En función de los objetivos de este trabajo se omitieron los desarrollos ligados a procesos intergrupos (ver Amiot y Bastian, 2014), así como los desarrollos sobre comunicación interespecífica y cognición animal. Sobre estos últimos se han desarrollado múltiples investigaciones particularmente con perros, los cuales han evidenciado mayores capacidades comunicativas con humanos que otros cánidos, y que especies genéticamente más emparentadas al hombre pero que no convivieron con él, como algunos primates (ver Bentosela y Mustaca, 2007). Los perros demostraron por ejemplo poder discriminar expresiones faciales humanas de enojo y alegría, de expresiones neutrales (Deputte y Doll, 2011); pudiendo discriminar aún en fotografías rostros sonrientes de inexpresivos (Nagasawa, Murai, Mogi y Kikusui, 2011), y pudiendo reconocer cuál es más positiva entre

Factores evolutivos implicados en la interacción humano-animal

Una de las teorías más mencionada acerca de por qué los humanos se interesan por los animales es la denominada *biofilia*, esta fué postulada por Wilson (1984), y ha recibido un creciente apoyo de otros autores (ver Kahn, 1997; DeLoache, Bloom Pickard, & LoBue, 2011; para una crítica ver Joye & De Block, 2011). La biofilia hace referencia a la asociación instintiva que los humanos tienen con el mundo natural; se trata de un atributo intrínseco propio de la naturaleza humana (Wilson, 1984). No se trataría de un único instinto sino más bien un conjunto de reglas de aprendizaje que movilizan una variedad de reacciones emocionales ante los animales que son moldeadas por la cultura (Wilson, 1993). Al respecto, un estudio reveló que niños entre uno y tres años expuestos a juguetes interesantes y pequeños animales se inclinaban a pasar más tiempo interactuando con los animales y hablando sobre ellos; así mismo sus padres tendían a dirigir la atención de los niños hacia los animales (LoBue, Bloom Pickard, Sherman, Axford, & DeLoache, 2013).

La biofilia alude a un determinado tipo de atención selectiva que hace foco en otras formas de vida, lo cual no es inherentemente positivo ni negativo. Los sentimientos ligados a ésta se disponen a largo de un espectro emocional que va desde la atracción a la aversión, del asombro a la indiferencia, de la paz a la ansiedad impulsada por el miedo. Resulta que la mente humana estaría programada evolutivamente para pensar de manera diferenciada sobre los animales y los objetos inanimados (Amiot & Bastian, 2014; Herzog, 2012). Claramente los humanos tienen asociaciones tanto positivas como negativas con la naturaleza, y ciertas predisposiciones biológicas también pueden propiciar el distanciamiento de ciertos animales. El término 'biofobia' alternativamente puede ser utilizado, aunque se considera que biofilia se refiere tanto a las asociaciones positivas como negativas (Kahn, 1997). En esta misma línea la investigación de LoBue y DeLoache (2008) reveló que bebés de entre 7 y 18 meses tenían una tendencia espontánea a asociar serpientes con miedo. Tanto adultos como niños en edad preescolar se mostraron más veloces en detectar imágenes de serpientes entre diversos distractores, que imágenes de seres no amenazantes como ranas, flores y orugas. Se ha demostrado que el sistema visual humano

las condiciones felicidad-neutral-disgusto (Turcsán, Szánthó, Miklósi y Kubinyi, 2014). Este último estudio reveló también que en una tarea de traer objetos previamente asociados con las tres condiciones, los perros anulaban sus propios intereses en la discriminación de objetos y traían el que el dueño prefería. Los perros tienen una habilidad única para reconocer señales de los rostros humanos que pudieron ayudarlos a adaptarse a la sociedad humana (Nagasawa, et al., 2011; Bentosela y Mustaca, 2007). Para otras revisiones en antrozoología ver Halm, 2008; Nimer & Lundhal, 2007; Perkins, Bartlett, Travers, & Rand, 2002; Steed & Smith, 2008.

está desarrollado adaptativamente para distinguir animales en el entorno (Herzog, 2012). La atención visual incluye un sistema especializado para monitorear animales permanentemente, que hace por ejemplo, que los personas se muestren más efectivas para detectar cambios en animales que en objetos inanimados, inclusive vehículos (New, Cosmides, & Tooby, 2007).

Otro factor evolutivo que ha sido destacado sobre las interacciones entre humanos y animales refiere a que los primeros se sienten atraídos de forma innata por todo lo que tenga apariencia de cría —niños, cachorros, patitos. A esto se le llamó ‘respuesta a lo adorable’ (*cute response*; Lorenz, 1943; ver Serpell, 2003). Los animales jóvenes comparten características con los seres humanos de tierna edad: frente y cráneo de grandes proporciones, ojos grandes, mejillas regordetas y contornos suaves (Herzog, 2012); y estas características funcionarían como ‘liberadores de instintos maternales’ porque automáticamente hacen aflorar impulsos parentales.

Las respuestas paternas al esquema infantil resultan adaptativas en su contexto primario, ya que fomentan el vínculo y la provisión de cuidados hacia el infante (Archer, 2011). Sin embargo, la atracción hacia el aspecto de bebé aparentemente es tan fuerte que es activada también por los jóvenes de otras especies. Por ejemplo ver un animal bebé parece ser suficiente para activar algo similar a las conductas que los padres humanos dirigen hacia su propia descendencia (Serpell, 1996b). Este particular rasgo morfológico de retención de características juveniles se llama *neotenia*, y fue uno de los fenómenos que se incrementó durante la domesticación (Gerzovich Lis, 1998).

Un estudio registró los acercamientos de personas a un cachorro de Golden Retriever desde su semana 10 a su semana 33: Los acercamientos fueron más numerosos cuando el cachorro era más joven. Las mujeres se acercaron más que los hombres durante la primera mitad del muestreo, y las proporciones se igualaron durante la segunda mitad (Fridlund & MacDonald, 1998). Otro estudio mostró que los rostros tanto de niños, perros, gatos y oso de peluche que presentaban características neoténicas resultaban más atractivos para las personas; y que los rostros de niños no resultaban más atractivos que los de los cachorros (Archer & Monton, 2011).

La capacidad de pensamiento antropomórfico es otro factor evolutivo que ha sido examinado en la interacción con los animales. En este sentido el antropomorfismo se define como la atribución de estados mentales humanos —pensamientos, sentimientos, motivaciones y creencias— a animales no humanos. Esta habilidad habría permitido al *Homo sapiens* considerar los hábitos y comportamientos de los animales emprendiendo estrategias de cacería más complejas, las cuales requieren planificación y la habilidad de realizar predicciones sobre el comportamiento de la presa (Serpell, 2003).

La capacidad de los humanos de pensamiento antropomórfico puede haber favorecido el proceso de asimilación de las primeras mascotas en las familias humanas, a partir de atribuirles características mentales humanas a estos animales una vez transcurrido el estadio infantil de dependencia y solicitud de cuidados (Serpell & Paul, 2011). El antropomorfismo es un rasgo casi universal entre los tenedores de mascotas, y esto permitió utilizar a los animales como fuentes alternativas de apoyo social, y los recursos para beneficiarse emocional y físicamente de esto (Serpell, 2003). Por ejemplo, la soledad —crónica o inducida— se asoció con una mayor tendencia al antropomorfismo de animales de compañía (Epley, Akalis, Waytz, & Cacioppo, 2008).

La influencia de la interacción humano-animal en procesos de desarrollo y aprendizaje

En las sociedades occidentales los animales —presentes en juguetes, estampados en ropa, dibujos animales, visitas al zoo— desempeñan un rol destacable en la vida de los niños, y el contacto con estos animales, especialmente con mascotas, moldea las actitudes hacia los animales durante la adultez (Serpell, 1999). La tenencia de mascotas durante la adultez, y el tipo de mascota, están fuertemente asociados con su historia en relación a la tenencia de mascotas durante la infancia (Schvaneveldt, Young, Schvaneveldt, & Kivett, 2001). Un estudio entre propietarios de mascotas encontró que quienes habían tenido mascotas durante su infancia resultaban más apegados a estas que quienes habían tenido mascotas por primera vez en la adultez (Kidd & Kidd, 1989).

Para los niños los animales de compañía pueden proveer afecto y facilitar aprendizajes relacionados a biología, y a la adquisición de responsabilidades (Schvaneveldt et al., 2001). La mascota puede convertirse en el hermano menor al cual el niño brinde cuidados (Turner, 2005), mientras a su vez prepara a los niños para experiencias posteriores de la vida: Embarazo, nacimiento y crianza de los hijos, enfermedades y muerte de un ser querido (Cain, 1985; Walsh, 2009b). Así, por ejemplo, un estudio encontró una asociación significativa entre el vínculo establecido por los niños con sus animales de compañía, y puntajes en escalas de competencia social y empatía (Poresky & Hendrix, 1990). Otro estudio con adultos jóvenes universitarios evidenció que quienes habían tenido mascotas durante su infancia mostraban mayores puntajes en empatía, mayor tendencia a elegir carreras ligadas a la ayuda, y mayor orientación hacia valores sociales (Vizek-Vidovic, Arambasic, Kerestes, Kuterovac-Jagodic, & Vlahovic-Stetic, 2001).

El interés hacia las mascotas puede generalizarse hacia el interés por una variedad de especies animales (Serpell & Paul, 1994), y el contacto con

otros animales durante la infancia puede generar actitudes positivas hacia los animales en general. En un estudio realizado en un zoológico, la proximidad visual de los niños hacia los animales, y principalmente el contacto físico, fueron asociados con un incremento del interés hacia los animales salvajes (Kidd, Kidd, & Zasloff, 1995).

Los procesos de modelado a partir de figuras significativas como padres y profesores también ayudarían a dar forma a las actitudes y comportamientos hacia los animales. En un grupo de adolescentes voluntarios en programas de educación sobre la vida silvestre se evidenció que estos habían sido influidos a partir de experiencias tempranas con los padres actuando como modelos, interactuando positivamente con las mascotas (Kidd & Kidd, 1997); y un 72% de los estudiantes de veterinaria refirieron que sus mascotas y sus padres habían influido en el desarrollo de sus valores a favor de los animales (Serpell, 2005). Así también el modelado puede dar lugar a relaciones abusivas y violentas hacia los animales, y el haberse criado en hogares donde se descuidaba o maltrataba animales se asoció a mayor tendencia a la aceptación del maltrato animal (Raupp, 1999). Experiencias de maltrato infantil y violencia doméstica también se asociaron a haber sido testigos o haber perpetuado crueldad con animales (DeGue & DiLillo, 2008).

Un concepto ligado al desarrollo que se ha estudiado en relación a la tenencia de animales de compañía es el de 'apego', y para algunos autores (e.g. Sable, 1995, 2013) es imprescindible considerar aspectos ligados al apego para que la tenencia y devoción hacia las mascotas tenga sentido. La teoría del apego está basada en la premisa de que los humanos, como muchos otros animales, están biológicamente predispuestos para buscar y mantener contacto físico y conexión emocional con determinadas figuras familiares a quienes se les confía protección física y psicológica. Bowlby (1969/1998) incorporó principios etológicos a la tradición psicoanalítica de búsqueda de objeto, para dar cuenta del diseño evolutivo de los comportamientos de búsqueda de proximidad. Para un adulto una figura de apego puede ser un esposo, algún miembro de la familia, un amigo íntimo o bien una mascota (Sable, 2013).

Aunque los humanos son considerados los custodios que deben proveer cuidados para satisfacer las necesidades básicas de sus animales, se ha encontrado que tanto humanos como animales pueden funcionar como figuras de apego para el otro. Para evaluar el apego humano hacia los animales se han desarrollado diversos instrumentos⁶⁴ como la Pet

⁶⁴ En el intento de evaluar las características de las interacciones humano-animal más de 140 instrumentos se han desarrollado, los cuales permiten medir los niveles de apego, actitudes, expectativas y niveles de vínculo de las personas hacia los animales. Para una revisión ver Wilson y Netting (2012); para un compendio ver Anderson (2007).

Attachment Scale (Melson, Peet, & Sparks, 1991) para niños, o la Lexington Attachment Scale (Johnson, Garrity and Stallones, 1992) para adultos. Así también la ‘situación extraña’ (*strange situation*), desarrollada para monitorear las respuestas de los niños de alrededor de un año frente a la separación y reunión con los padres, y la presencia de extraños (Ainsworth, 1969; Ainsworth & Bell, 1970), se ha adaptado y aplicado para evaluar qué tipo de apego los animales han desarrollado con sus custodios, describiendo comportamientos similares a los encontrados en las interacciones madre-hijo en esta situación (Palmer & Custance, 2008; Prato-Previde, Custance, Spiezio, & Sabatini, 2003; Topál, Miklósi, Csányi, & Dóka, 1998).

En la literatura relacionada con animales de compañía se plantea la discusión acerca de si el concepto de apego es equivalente en una díada humano-humano y humano-animal (Hosey & Melfi, 2014). Si bien para algunos autores resulta legítimo utilizar el término ‘apego’ en relación a humanos y mascotas (e.g. Kruger & Serpell, 2006; Zilcha-Mano, Mikulincer, & Shaver, 2011, 2012), para otros autores resulta inexacto (e.g. Crawford et al., 2006), y la controversia continúa. De todas formas existe cierto nivel de acuerdo respecto a que las mascotas, principalmente perros y gatos, proveen proximidad, promueven sentimientos positivos como alegría que hacen que la gente se sienta menos sola, bienestar, seguridad, y propician oportunidades para desplegar cuidados y compromiso (Crawford et al., 2006; Sable, 2013).

Un apego intenso hacia el animal de compañía tendría consecuencias para ambos. Por ejemplo, se ha relacionado con menos probabilidad de abandono de mascotas en evacuaciones (Heath, Beck, Kass, & Glickman, 2001; Heath, Voeks, & Glickman, 2001) y mayor satisfacción con el comportamiento del animal (Serpell, 1996a). Puntajes altos en apego hacia el animal de compañía, y aún más en la compatibilidad entre ambos, mostró una asociación con la salud mental de los propietarios (Budge, Spicer, & St. George, 1998). Los propietarios que obtenían puntajes bajos en apego evitativo tendían a experimentar una reducción en la presión sanguínea mientras realizaban un tarea estresante, sea que sus mascotas estuvieran presentes o bien que pensarán en ellas (Zilcha-Mano et al., 2012). Asimismo, cabe señalar que se ha encontrado que la relación entre apego a la mascota, bienestar y salud es compleja, y puede ser inconsistente entre distintos grupos poblacionales (Duvall Antonacopoulos & Pynchyl, 2010; Garrity, Stallones, Marx, & Johnson, 1989; Stallones, Marx, Garrity, & Johnson, 1990).

Factores culturales, grupales e individuales en la interacción humano-animal

Se ha encontrado relación entre las actitudes de las personas hacia los animales y factores culturales, socioeconómicos y demográficos, la edad de

la persona, sexo, ocupación, ingresos, origen étnico, área de residencia, nivel educativo y orientación religiosa (Kellert, 1993).

Las actitudes humanas hacia los animales a menudo aparecen como extraordinariamente variables y arbitrarias entre distintas culturas (Serpell, 1996b), y el valor que otorgamos a los animales y el alcance de nuestras consideraciones positivas o negativas hacia ellos, determinan su bienestar y supervivencia (Serpell & Paul, 1994). Los animales son vendidos como productos costosos, usados como alimento, vestimenta, aniquilados como alimañas dañinas y cazados por deporte. Pero también son tratados como miembros de la familia, usados como la causa célebre de un movimiento social, y se les da lugar en el arte, el cine y la poesía (Arluke & Sanders, 1996). Aún dentro de una misma especie, las categorías que asignemos a ciertos animales y a la relación que tenemos con ellos determinará su destino (Miller, 2011).

Para entender nuestras diferencias culturales en relación a los animales Serpell (2004) planteó que nuestra actitud se reduce a dos dimensiones: (1) el afecto, que va del amor y la simpatía al miedo y la repugnancia, y (2) la utilidad, que puede variar de útil y beneficiosa para los intereses humanos a inútil y perjudicial para nuestros intereses. De este modo en Arabia Saudita suele menospreciarse a los perros, los cuales repugnan y perjudican los intereses humanos; mientras que en la selva de Ituri, África, sostienen un afecto negativo hacia ellos, los golpean y no los alimentan, pero les resultan de gran utilidad para la cacería (Herzog, 2012).

En un estudio realizado en 60 culturas se encontró que los animales de compañía más comunes eran los perros, seguidos por los pájaros y gatos; presentando similitudes y diferencias entre culturas, tanto en interacciones positivas como negativas en cuanto hábitos de cuidado, como en funciones, por ejemplo, como miembros de las familias o alimento (Gray & Young, 2011).

Las preferencias respecto a los animales de compañía, particularmente en cuanto a razas de perros, han sido encontradas variables a través del tiempo de modo azaroso e impredecible de acuerdo a ‘caprichos culturales’, explicados a través de las leyes de potencias puestas en juego por la influencia mutua ejercida por las personas en grandes poblaciones (Herzog, 2006; 2012; Herzog, Bentley, & Hahn, 2004).

Un grupo ocupacional que ha sido particularmente estudiado está compuesto por los profesionales y estudiantes ligados a medicina veterinaria. Los cuales fácilmente pueden quedar atrapados entre intereses contrapuestos de clientes humanos y pacientes animales, debiendo desplegar distintas estrategias como racionalización y desensibilización para resolver situaciones inherentes a su práctica, como la eutanasia o la castración de animales de granja sin anestesia (Sanders, 1999; Swabe, 2000). Una

investigación con estudiantes de veterinaria encontró que el año de estudio estaba relacionado con la percepción de la capacidad de sentir de perros, gatos y vacas; y que los estudiantes de los últimos años tenían menores puntajes (Paul & Podberscek, 2000). La racionalización y el desplazamiento de la culpa también han sido encontrados en empleados de las perreras que deben practicar eutanasia (Frommer & Arluke, 1999) y en investigadores que trabajan en laboratorios con animales (Herzog, 2012). Un estudio mostró que un grupo de estudiantes de medicina antes de asistir a un laboratorio donde se manipulaba quirúrgicamente y luego sacrificaba perros, muchos estudiantes manifestaban malestar y consideraciones morales al respecto; y que posteriormente realizaban un cambio de actitud favorable respecto del laboratorio. Los autores sugirieron que el mecanismo implicado en la neutralización moral estaba ligado a la negación de la responsabilidad (Arluke & Hafferty, 1996).

Respecto a la religiosidad se ha encontrado la intensidad de la creencia en Dios o en la vida después de la muerte fuertemente asociada a una dicotomía, más que a una continuidad, entre humanos y animales (Amiot & Bastian, 2014). Nuestra cultura, de tradición judeo-cristiana, promueve una concepción antropocéntrica del mundo, y un distanciamiento de los animales y del mundo natural (Serpel, 1996b). De este modo se ha encontrado que las personas con creencias religiosas más fundamentalistas mostraban menor apoyo a los derechos de los animales, en comparación con personas menos religiosas (DeLeeuw, Galen, Aebersold, & Stanton, 2007) menor interés ambiental (Schultz, Zelezny, & Dalrymple, 2000) y mayor tendencia al antropocentrismo (Snodgrass & Gates, 1998).

Se ha estudiado la personalidad de quienes tienen mascotas comparándola con aquellos que no las tienen. Mientras que algunos estudios encontraron que los propietarios de animales de compañía obtenían menores puntajes en Neuroticismo (Paden-Levy, 1985), mayores puntajes en aspectos ligados Responsabilidad (Kidd & Feldman, 1981), y Extraversión (Joubert, 1987), otros estudios no encontraron diferencias (e.g. Cameron & Mattson, 1972; Johnson & Rule, 1991).

También se intentó encontrar diferencias en la personalidad de los dueños de mascotas de acuerdo al tipo de animal del que se tratara. Al evaluar si existen diferencias entre quienes se definen como ‘amante de los perros’ o ‘amante de los gatos’ Goslin, Sandy y Potter (2010) encontraron que los primeros puntuaban más alto en Extraversión, Amabilidad y Responsabilidad, y los segundos más alto en Neuroticismo y Apertura a nuevas experiencias. Sin embargo, las diferencias en la puntuación de personalidad eran relativamente pequeñas, a excepción de las medidas de Extraversión que eran moderadas (Herzog, 2012). Más recientemente otro estudio encontró que quienes se definieron como amantes de los perros

también habían obtenido puntajes más altos en Responsabilidad, pero contrariamente al estudio anterior también habían puntuado más alto en Neuroticismo (Reevy & Delgado, 2014). Particularmente en una población de adultos mayores se encontró que los resultados acerca de estas características básicas de personalidad no podían predecir la tenencia de qué tipo de mascota —aunque una proporción mayor de hombres introvertidos eran tenedores de gatos en comparación con los extrovertidos (Enmarker, Hellzén, Ekker, & Berg, 2013).

Podberscek y Gosling (2005) hicieron una revisión extensa sobre la temática y concluyeron que no hay evidencia clara de que los propietarios y los no propietarios, y los propietarios de un particular tipo de mascota, sean diferentes en términos de su personalidad.

Las diferencias de género también fueron estudiadas en relación a los animales. Un estudio encontró que niños y niñas mostraban igual grado de interés hacia las mascotas (Melson & Fogel, 1996), y que hombres y mujeres no mostraban diferencias en los comportamientos de juego y cuidados físicos al interactuar con sus mascotas (Prato-Previde, Fallani, & Valsecchi, 2006), ni en su comportamiento en la sala de espera de la veterinaria (Mallon, 1993). Herzog (2007) realizó una revisión sobre los estudios acerca de las diferencias entre las relaciones afectivas que hombres y mujeres tenían con sus animales de compañía y las actitudes hacia los animales, y concluyó que las mismas resultaban muy poco significativas en interacciones habituales, como por ejemplo, en cuanto al apego a los animales de compañía. Sin embargo, existía una marcada diferencia en cuanto a los comportamientos más extremos: con el abuso de los animales del lado de los hombres, y el activismo en defensa de los animales del lado de las mujeres.

La relación humano-animal y su influencia en la salud y el bienestar

El desarrollo de reciente investigación en antrozoología produjo un rápido crecimiento sobre el entendimiento acerca de los beneficios que reporta la tenencia de animales de compañía (McCune et al., 2014) y éste fue uno de los temas que recibió mayor interés, lo que se vio reflejado en un mayor incremento en el número de publicaciones dentro del área en los últimos treinta años (Hosey & Melfi, 2014). La idea de que vivir con un animal puede mejorar la salud humana, el bienestar psicológico y aportar a la longevidad ha sido llamada ‘efecto mascota’ (Allen, 2003), y comprendería aspectos fisiológicos, psicológicos, psicosociales y terapéuticos (Gómez, Atehortua, & Orozco, 2009).

La investigación sobre estos beneficios se encuentra en un estadio temprano de desarrollo, pero ya se han obtenido una variedad de hallazgos interesantes (Serpell, 2003). Algunos de los más renombrados se resumen en

la tabla 1 (para una revisión ver Wells 2009; Friedmann, Thomas, & Eddy, 2005).

Tabla 1 *Efectos positivos de la tenencia de mascotas en la salud y bienestar humano*

Efecto	Estudios
Mayor supervivencia después de infartos	Friedmann, Katcher, Lynch, & Thomas, 1980; Friedmann & Thomas, 1995
Menores niveles de cortisol y triglicéridos	Anderson, Reid, & Jennings, 1992
Reducción en niveles de presión sanguínea al acariciar un animal	Vormbrock & Grossberg, 1988
Reducción en niveles de presión sanguínea al realizar una tarea estresante, en adultos, niños y adultos mayores, en presencia de un perro	Allen, Blascovich, & Mendes, 2002; Friedmann, Thomas, Cook, Tsai, Picot, 2007; Friedmann, Katcher, Thomas, Lynch, & Messent, 1983
Menor cantidad de consultas médicas realizadas y menores problemas médicos menores	Headey & Grabka, 2005; Serpell, 1991; Siegel, 1990
Mayor autoestima, menor sensación de abatimiento y mayor percepción de capacidad y autoeficacia	Beals, 2009; Convert, Whiren, Keith, & Nelson, 1985; Zylcha-Mano et al., 2012
Incremento y facilitación de interacciones sociales	Charles & Davies, 2008; Guéguen & Ciccotti, 2008; Hart, Hart, & Bergin, 1987; McNicholas & Collis, 2000; Robins, Sanders & Cahill (1991); Wodd, Giles-Corti, Bulsara, & Bosch, 2007
Incrementos en niveles de oxitocina en humanos y animales	Handlin, Nilsson, Ejdeback, Hybring-Sandberg & Uvnas-Moberg (2012); Odendaal & Meintjes (2003)

Estos estudios han sido sometidos a diversos cuestionamientos metodológicos (ver Herzog, 2011; Islam & Tower, 2013; McNicholas et al., 2005), y es posible también que en cierta medida la evidencia de efectos nulos o negativos de estos animales sobre la salud y el bienestar humano reciban menos interés y difusión (Herzog, 2012). Aún así, diversos autores consideran que la evidencia resulta convincente como para afirmar la existencia de los efectos positivos (e.g. Oyama & Serpell, 2013; Sable, 2013; Walsh, 2009a). Resta esclarecer también por qué la interacción con animales de compañía podría tener esos efectos positivos (Hosey & Melfi, 2014). Una de las teorías mejor sustentadas al respecto plantea que algunos de los beneficios en la salud conferidos por las mascotas son, al menos en parte, derivados de su rol como proveedores de apoyo social, y que este apoyo

actúa como un amortiguador contra el estrés de la vida diaria (Allen, Shykoff, Joseph, & Izzo, 2001; Allen et al., 2002; Kikusui, Winslow, & Mori, 2006, McCune et al., 2014).

Estos estudios se refieren a las interacciones entre las personas y sus animales de compañía, entendiéndolos a éstos como animales mantenidos fundamentalmente por motivos sociales, emocionales o sentimentales, y no por motivos económicos o prácticos. Si bien es posible que ambas categorías se superpongan como en el caso de los perros guía (Serpell & Paul, 2011), existe una clara distinción entre el uso recreacional de los animales y su utilización dentro de marcos terapéuticos, siendo este último el caso de las intervenciones asistidas por animales (Kruger & Serpell, 2006).

Respecto a la implementación de animales con fines terapéuticos se destaca como precursor a Levinson⁶⁵, quien habría sentado las bases para que este campo comenzara a desarrollarse en 1964 (Herzog, 2012) y continúe actualmente en crecimiento. En la actualidad la incorporación de animales en el campo de la salud se denomina Intervenciones Asistidas por Animales (IAA) y este término incluye: Actividades Asistidas por Animales (AAA) y la Terapia Asistida por Animales (TAA; Fine, 2010). Kruger y Serpell (2006) sugieren tomar las definiciones aportadas por *Pet Partners* (sf). Las AAA son aquellas acciones básicamente casuales, conocidas como ‘conocer y saludar’, y que tienen por objetivo visitar a personas en ámbitos como hospitales, residencias geriátricas, escuelas y hospicios. La misma actividad puede repetirse con gran cantidad de personas. La TAA se define como una intervención que tiene una meta, propiciada por profesionales especializados en salud humana y que se desarrolla en el ámbito de la

⁶⁵ En la historia del empleo de animales con fines terapéuticos el hito fundamental que da estatuto de intervención a este tipo de prácticas es el casual descubrimiento realizado en por el psiquiatra infantil Boris Levinson. Hacia 1953 este profesional recibió en su consulta privada a un niño; su perro Jingles saludó al pequeño con una lamida y este le respondió con un abrazo. En sesiones anteriores este paciente había sido retraído e incommunicativo; en el transcurso de la sesión el niño manifestó su deseo de volver a jugar con el can (Levinson, 1969; Urichuk & Anderson 2003). Este hecho fortuito llevó a Levinson a transferir esta experiencia con algunos niños resistentes al trabajo terapéutico los cuales adoptaban una actitud más abierta luego de jugar con Jingles, su perro (Herzog, 2012). Y consecuentemente Levinson se dedicó a investigar acerca de esta temática y en los años 60 publica su primer libro *Pet-Oriented Child Psychotherapy*. En esta obra acuñó el término “terapia con mascotas”, designó formalmente el tipo de intervención, los beneficios del vínculo humano-animal y el rol que ocupaban los animales, co-terapeuta (Levinson, 1969). El autor señala que el animal de compañía facilita el desarrollo de confianza en el entorno terapéutico tanto en niños como en adultos ya sean instancionalizados o no (Levinson, 1972). Por consiguiente Levinson es considerado el precursor de la terapia asistida con animales y así mismo el principal exponente que focaliza en la necesidad de crear un riguroso criterio de selección, entrenamiento y utilización terapéutica de los animales (Cirulli, Borgi, Berry, Francia, & Alleva, 2011; Kruger & Serpell, 2006; Urichuk & Anderson, 2003).

práctica de su profesión, cuyo diseño se orienta a promover una mejora en el funcionamiento: físico, social, emocional y/o cognitivo. Las diferencias entre AAA y TAA se muestran en la tabla 2.

Tabla 2 *Comparación entre las AAA y la TAA*

Características	AAA	TAA
Cualidad de la intervención	Casual ‘conocer y saludar’ actividades que involucran animales que visitan a personas	Parte significativa del tratamiento para mucha gente que está incapacitada: físicamente, socialmente, emocionalmente o cognitivamente
Objetivos-Metas	No hay objetivos específicos de tratamiento	Objetivos establecidos para cada sesión
Tipo de Actividad	Una misma actividad se puede utilizar con muchas personas	Tratamiento individual para cada paciente
Tomado de Notas	Notas detalladas es innecesario	Notas sobre el progreso de cada paciente son tomadas en cada sesión
Tipo de visita	De contenido espontáneo	Programada, usualmente a intervalos fijos
Duración de visita	Puede ser tan larga o corta como se desee	Está predeterminada a las mejores necesidades de ajuste del paciente

Nota: Aunque las AAA pueden tener sólo una de estas seis características, la TAA debe tener las seis. Adaptado de Pet Partners (sf).

La TAA no sólo implica el uso de un animal o animales, sino que además posee metas y objetivos específicos para cada progreso individual, el cual es estrictamente consignado y medido (Cirulli et al., 2011; Kruger & Serpell, 2006; Urichuk & Anderson 2003).

El desarrollo de investigaciones científicas en el ámbito de las IAA se ha desarrollado en niños, adolescentes, adultos y gerontes, con diversas patologías, con resultados alentadores. Por ejemplo, pacientes psiquiátricos hospitalizados mostraron menores niveles de ansiedad luego de una sesión de terapia asistida con perros; mientras que una sesión recreativa con perros sólo evidenció el mismo efecto para los pacientes con trastornos del estado anímico (Barker & Dawson, 1998). La exposición breve a la interacción con un perro de terapia se mostró efectiva para reducir el número de comportamientos de agitación en personas institucionalizadas con diagnóstico de enfermedad de Alzheimer, particularmente durante el

sundown; a su vez se relacionó con un incremento en los comportamientos de socialización entre estos pacientes (Churchill, Safaoui, McCabe, & Baun, 1999). Resultados similares se encontraron en estos pacientes tras la incorporación de un perro permanentemente en una institución residencial (McCabe, Baun, Speich, y Agrawal, 2002) y mediante la exposición a perros en domicilios particulares de estas personas (Fritz, Farver, Kass, & Hart, 1995).

En pacientes geriátricos institucionalizados, las IAA con perros también se relacionaron con una mejoría sobre el estado de inactividad y habilidades sociales (Berry et al., 2012), disminución de sentimiento de soledad (Banks & Banks, 2002), y disminución de síntomas depresivos e incremento del bienestar psicológico (Colombo, Dello Buono, Smania, Raviola, & De Leo, 2006).

Las IAA se relacionaron a un incremento de la capacidad de percepción de emociones y empatía en adolescentes con dificultades emocionales (Jiménez, Hernández, & Ramírez, 2012). En niños con trastornos del espectro autista se encontró que la presencia de los canes se asociaba con una reducción de hasta un 58% en los niveles de cortisol al despertar (Viau et al., 2010)

En una revisión realizada sólo con estudios que incluían grupos control y tamaños de muestra adecuados, Nimer y Lundahl (2007) encontraron que las IAA estaban asociadas consistentemente a importantes beneficios en trastornos de espectro autista, y moderados efectos beneficiosos sobre medidas de ansiedad, depresión y conductuales.

Los animales en las familias humanas

La familia puede pensarse como un sistema relacional reglado, que supera y articula entre sí los componentes individuales, en el que cada parte tiene su importancia en el funcionamiento. Las funciones que desempeña cada una producen un acople estructural del que deviene la funcionalidad del sistema (Ceberio, 2006). Este sistema puede limitarse a un pequeño grupo o puede extenderse para incorporar miembros de la familia extensa, e inclusive no familiares y mascotas (Bowen, 1978/1993, p. 123).

Si bien los propietarios de animales de compañía tiende a considerarlos como miembros de la familia (Cain, 1895; Cohen, 2002; Faver & Cavazos, 2008) su estatus de familia queda confirmado por las interacciones que tienen con las personas (Serpell & Paul, 2011). En Ciudad de Buenos Aires por ejemplo, se encontró que cotidianamente entre los tenedores de animales: 99% hablaba con ellos; 98% les jugaba; 60,4% les hacía regalos; 89,9% les sacaba fotos; y 53,1% les permitía dormir en su cama (Bovisio, Cicuttin, et al., 2004).

La incorporación de un nuevo miembro a la familia implica un proceso de adaptación a las reglas que ese miembro debe realizar, pero también el sistema debe modificarse para poder incluir a ese miembro (Minuchin, 1977). Este doble proceso fue encontrado en familias que incorporaban perros, donde éstos últimos aprendían y se adaptaban a las reglas humanas, pero también los humanos realizaban esfuerzos por incluir a los perros como perros en las rutinas; y a su vez los perros, lejos de adoptar una actitud pasiva de adaptación, ejercían activamente modificaciones en la familia (Power, 2008). Si bien los animales de compañía deben adaptarse a una historia familiar previa, éstos también se forjan su rol en la familia (Schvaneveldt et al., 2001).

Las mascotas ocupan un lugar que presenta superposiciones pero que es diferente al de los humanos en la familia, pudiendo satisfacer algunas necesidades que estos vínculos humanos satisfacen, pero a su vez pueden ofrecer beneficios, a través de su consistencia y presencia no enjuiciadora, que los humanos no podrían proveer (Cohen, 2002). En tanto los costos interactivos y emocionales suelen resultar relativamente bajos, la tenencia de animales de compañía puede resultar altamente rentable (Schvaneveldt et al., 2001).

La incorporación de un animal a la familia puede modificar la dinámica relacional de ésta (Cavanaugh, Leonard, & Scammon, 2008). Se ha observado que las mascotas pueden dar lugar a la formación de triangulaciones: En un estudio el 44% de los participantes indicó que esto sucedía esporádicamente, mientras que el 8% indicó que esto sucedía siempre (Cain, 1985). En triangulaciones estos animales puede ser utilizados para la expresión de sentimientos de celos, rabia, control, culpa y temor (Walsh, 2009b), o bien ellos pueden intervenir por su propia agencia para detener situaciones de tensión (Cain, 1985). Las mascotas también pueden ocupar un lugar en las disputas en divorcios y en la compleja reorganización relacional en la formación de familias ensambladas (Walsh, 2009b).

Los animales también pueden ser víctimas de violencia y abusos, y los vínculos intensos entre personas y animales pueden ser explotados en familias que experimenten violencia doméstica (Wakefield, 2014). Mujeres que habían sido víctimas de violencia doméstica tenían mayor probabilidad de indicar que sus parejas habían lastimado o matado mascotas (Ascione et al, 2007); y finalmente tanto víctimas como victimarios humanos tenían mayor probabilidad de haber abusado de animales (Baldry, 2005; Volant, Johnson, Gullone, y Coleman, 2008). La asociación entre violencia hacia animales y violencia hacia humanos se ha llamado 'The Link', y si bien existen pruebas de la relación resta determinar la intensidad y los motivos de la misma (Herzog, 2012).

La pérdida del animal de compañía también ha recibido la atención de los investigadores. Empíricamente se halló que la experiencia de duelo era similar a la provocada por la pérdida de un vínculo humano, pero con el agregado de la falta de apoyo social (Gerwolls & Labott, 1994). Incluso el estudio planteado por Adams, Bonnett, y Meek (2000) halló que el 30% de los participantes que habían perdido a su mascota recientemente experimentaba síntomas severos de duelo. La gravedad de los síntomas ha mostrado una clara asociación con los niveles de apego del tenedor hacia su animal de compañía (Wrobel & Dye, 2003). Otros factores relacionados con mayor sintomatología fueron el sexo femenino, edad juvenil y vivir solo (McCutcheon & Fleming, 2001).

Asimismo las necesidades de la familia frente a esta pérdida pueden variar dependiendo del rol que el animal desempeñaba (Turner, 2005). Se ha teorizado que, por ejemplo, si la mascota desempeñaba una función crucial en las dinámicas de una pareja o familia, su pérdida puede llevar a una desestabilización del sistema relacional. O también, si el animal habría ayudado a transitar períodos conflictivos, tales como enfermedades, divorcios o mudanzas, la pérdida de la mascota puede reactivar esas pérdidas previas (Walsh, 2009b). A su vez, la falta de apoyo frente a la necesidad de expresión de duelo puede generar desconcierto y estrés (Schvaneveldt et al., 2001).

Discusión

Por qué estudiar las relaciones entre personas y animales? ¿Para qué sirve? En principio debe destacarse la habilidad única de la antrozoología para crear puentes teóricos y conceptuales que no sólo enlazan disciplinas ampliamente distanciadas, sino que también tiende un puente sobre la brecha entre el mundo de los humanos y la vida del resto del planeta (Podbersek, Paul, & Serpell, 2005).

En las sociedades occidentales se evidencia un claro cambio en las actitudes hacia los animales, por ejemplo, se alzan fuertes cuestionamientos acerca de su utilización en experimentación biomédica o el consumo de su carne. Incluso la división social generada por el debate acerca del estatus moral de los animales es tal, que el movimiento radical en defensa de los derechos de los animales es considerado por el FBI como la peor amenaza terrorista en Estados Unidos (Herzog, 2012). Se hace necesario abrir el debate y poder establecer criterios consensuados y confiables sobre la utilización de animales en laboratorios. Un estudio mostró que protocolos de investigaciones con procedimientos invasivos sobre animales que habían sido aprobados por un comité de ética, eran mayormente desaprobados al ser sometidos a la evaluación por un segundo comité (Plous & Herzog, 2001).

El cambio en las actitudes hacia los animales se ha relacionado particularmente a una disminución en el pensamiento antropocéntrico, a un acercamiento a los animales, y a la tenencia de mascotas (Serpell & Paul, 1994). Por ejemplo en la Ciudad de Buenos Aires se observó un incremento en la tenencia de mascotas, pasando de un perro cada 7.45 personas a uno cada 6.52, y de un gato cada 24.55 personas a uno cada 13.43 personas en un período de diez años comprendido entre 1994 y 2004 (Anderson et al., 1996; Bovisio, Fuentes, et al., 2004).

Ahora bien, los vínculos intensos que las personas forman con estos animales llevan a incorporarlos como miembros de sus familias, habilitando el acceso a la intimidad del hogar y proximidad física. Estas relaciones pueden resultar sumamente beneficiosas para los humanos y animales implicados, por lo que combatir aquellos riesgos relacionado a la tenencia de animales (enfermedades zoonóticas, rasguños, mordeduras, caídas) no debe conducir a desalentar estos vínculos. Se hace necesario fomentar la educación acerca la prevención de enfermedades zoonóticas y accidentes, incluso fomentar la educación y la accesibilidad a los medios y recursos de atención veterinaria para desarrollar en la práctica la noción de ‘tenencia responsable’ de animales, que compete a propietarios y veterinarios (ver Acero Plazas, Gil Tibocha, Gutiérrez Vélez, & Porto Peralta, 2014) como así también al estado.

Otra de las cuestiones a considerar es el control de la fauna urbana ya que este también tiene profundas implicaciones para la salud humana. Tal como propone la Unidad de Salud Pública Veterinaria, que exhorta a los estados a propiciar políticas públicas para la vigilancia, prevención y control de zoonosis de importancia en salud pública; y para la promoción de la protección ambiental en relación con los riesgos potenciales para la salud pública derivados de la producción animal y la tenencia de mascotas (Ruiz & Estupiñan, 1992).

La psicología tardíamente ha reconocido la importancia de los vínculos entre las personas y sus animales de compañía en áreas como la práctica, la teoría clínica y la investigación (Walsh, 2009a, Fine 2010). Han sido los psicoterapeutas familiares los primeros que reconocieron el rol significativo de las mascotas como miembro de la familia con el propósito de conceptualizar la familia como un todo (Cain, 1985); pero en terapia familiar, en lo referente a su práctica y formación, se ha proporcionado escasa atención a los vínculos entre personas y animales (Walsh, 2009b). Albert y Bulcroft (1988) manifestaron que posiblemente la figura de las mascotas fue desestimada por las dificultades de los científicos sociales — objetivos y racionales— para valorar a los animales de compañía como miembros potenciales del sistema familiar.

Desde esta perspectiva las mascotas pueden suministrar información relevante sobre el modo en que el sistema familiar está organizado o desorganizado (Cain, 1985); asimismo, la evaluación de los roles que ocupan las mascotas debe orientar las decisiones de los psicoterapeutas sobre la decisión de incluir a los animales, y cómo hacerlo, en sus intervenciones terapéuticas (Faver & Cavazos, 2008).

Situar al animal en el sistema familiar puede realizarse a partir de la observación o bien a partir de preguntas acerca de la ubicación física del animal en el ambiente individual o familiar. Por ejemplo, dónde come, duerme o pasa la mayor parte del tiempo el animal se correlaciona con su rol en el sistema. Además indagar acerca de qué cosas hace el animal y cómo contribuye su presencia o ausencia a los procesos familiares, sirve para evaluar la función que el animal cumple en el sistema familiar. Asimismo, puede indagarse: ¿Cómo describirían su relación entre ellos mismos, su animal/es, y los otros miembros del sistema familiar? ¿Quién tiene la responsabilidad del cuidado del animal? ¿Hasta qué punto son considerados en las decisiones y transiciones familiares? Esto permite evaluar las dinámicas familiares relacionadas con la estabilidad, expectativas y reglas familiares; particularmente acerca de cómo se representan los conflictos, la cooperación y las crisis (MacNamara & Moga, 2014). La relevancia de comprender el rol de los animales con los que las personas interactúan cotidianamente está basada en principio por el significado simbólico que las personas ligán a estos animales (Schvaneveldt et al., 2001), los cuales resultan cada vez más valiosos en la vida familiar (Walsh, 2009b).

En la actualidad el amplio desarrollo en la investigación antrozoológica generó un importante crecimiento en la comprensión y conocimiento de los beneficios que aporta la tenencia de mascotas (McCune et al., 2014). Sin embargo, este campo de investigación ha recibido un escaso reconocimiento del campo de la medicina (Oyama & Serpell, 2013) desde donde los beneficios cardiovasculares informados por la interacción con animales, o la motivación para el autocuidado y para la realización de actividad física, podrían resultar muy provechosos. Cabe señalar que tampoco se trata prescribir el contacto con animales indiscriminadamente y que la decisión de adoptar un animal debe realizarse considerando no sólo los potenciales beneficios, sino también las responsabilidades y costos por el tiempo de vida del animal. Así también, las IAA requieren de profesionales especializados, además del establecimiento de tratamientos estrictamente protocolizados y basados en evidencia, tal como propone la OMS.

Las consideraciones también alcanzan el campo del trabajo social. Sable (1995, 2013) enfatizó la importancia de la formación de estudiantes y profesionales pertenecientes al trabajo social, en referencia al significado que los animales de compañía tienen para muchas personas. Asimismo, el

progresivo reconocimiento de los beneficios que los animales proveen a las personas también tiene significativas implicaciones en el campo del trabajo social. Al realizar evaluaciones, los profesionales con frecuencia indagan acerca de las personas importantes en las redes de parentesco y sociales, pero no suelen considerar a los animales de compañía (Walsh, 2009b); lo cuales pueden suministrar oportunidades para el cuidado e intimidad, semejantes a las provistas que por miembros saludables de la familia (Cohen, 2002). Incluir una evaluación centrada en la funcionalidad de las mascotas puede resultar de vital importancia; al ignorarla puede perderse información vinculada con amenazas y aliados potenciales. De este modo, por ejemplo, una mujer víctima de violencia doméstica podría negarse a mudarse a refugio porque no puede llevar su mascota con ella, aunque sienta vergüenza para plantear esa situación (Turner, 2005).

En cuanto al maltrato y la crueldad hacia los animales también se constituyen en indicadores importantes, tal es el caso del Trastorno de la conducta (Asociación Americana de Psiquiatría, 2013) en referencia a los Trastornos destructivos de la conducta. Por tanto resulta de suma importancia fomentar la detección de estos indicadores y de un dispositivo de acción que incluya tanto a veterinarios, educadores y profesionales de la salud humana.

Por último, es a través de las relaciones sociales que encontramos nuestra verdadera conexión con otros, independientemente de si esos otros son humanos o no humanos. Ubicados como estamos al borde de una catástrofe ambiental, la importancia de establecer y reforzar este sentido de conexión e identidad con otras vidas puede ser de vital importancia (Podberscek, Paul, & Serpell, 2005).

Conclusion

En el pasado la medicina, psicología, sociología, antropología y las humanidades han sido las responsables de estudiar a los humanos aislados, como si nuestra especie de alguna manera hubiera evolucionado en ausencia de interacciones con nadie ni nada que no fuera humano. La existencia de relaciones con seres fuera de este dominio estrictamente “humano” era negada o descartada (Podberscek, Paul, & Serpell, 2005).

A lo largo de este trabajo se buscó plasmar múltiples variables intervinientes en la interacción humano-animal con el objetivo de reflexionar acerca de la utilidad y de las posibilidades de implementación práctica por profesionales de la salud. Para esto se revisaron trabajos desarrollados dentro del amplio y variado campo de la antrozoología, la cual plantea un abordaje interdisciplinar centrado en el estudio del entramado interaccional entre humanos y otras especies.

La perspectiva interdisciplinar que aporta dicho enfoque se constituye en un punto de inflexión que habilita la acción mancomunada de los investigadores enfocados en la interacción humano-animal. En este estado de cosas “la complejidad es, efectivamente, el tejido de eventos, acciones, interacciones, retroacciones, determinaciones, azares, que constituyen nuestro mundo fenoménico” (Morin, 1998, p. 32). Es ahí en donde se demanda cierta apertura para incitar a la vinculación con otras disciplinas; esto permitirá la construcción de nuevas metodologías y técnicas de trabajo.

References:

- Adams, C. L., Bonnett, B. N., & Meek, A. H. (2000). Predictors of owner response to companion animal death in 177 clients from 14 practices in Ontario. *Journal of the American Veterinary Medical Association*, 217(9), 1303-1309.
- Ainsworth, M. D. S. (1969). Object relations, dependency, and attachment: A theoretical review of the infant-mother relationship. *Child development*, 969-1025.
- Allen, K. (2003). Are pets a healthy pleasure? The influence of pets on blood pressure. *Current Directions in Psychological Science*, 12(6), 236-239.
- Allen, K., Blascovich, J., & Mendes W.B. (2002). Cardiovascular reactivity and the presence of pets, friends, and spouses: The truth about cats and dogs. *Psychosom. Med.* 64:727–739.
- Allen, K., Shykoff, B.E., Joseph J., & Izzo L. (2001). Pet ownership, but not ACE inhibitor therapy, blunts home blood pressure responses to mental stress. *Hypertension* 38:815–820
- Cohen, S. P. (2002). Can pets function as family members?. *Western Journal of Nursing Research*, 24(6), 621-638.
- Covert, A. M., Whiren, A. P., Keith, J., & Nelson, C. (1985). Pets, early adolescents, and families. *Marriage & Family Review*, 8(3-4), 95-108.
- DeLoache, J. S., Bloom Pickard, M., & LoBue, V. (2011). How very young children think about animals. En P. McCardle, S. McCune, J. A. Griffin, & V. Maholmes (Eds.), *How animals affect us: Examining the influence of human-animal interaction on child development and human health* (pp. 85–99). Washington, DC: American Psychological Association.
- DeLoache, J. S., & LoBue, V. (2009). The narrow fellow in the grass: Human infants associate snakes and fear. *Developmental science*, 12(1), 201-207.
- DeMello, M. (2012). *Animals and society: an introduction to human-animal studies*. Columbia University Press.
- Deputte, B. L., & Doll, A. (2011). Do dogs understand human facial expressions?. *Journal of Veterinary Behavior: Clinical Applications and Research*, 6(1), 78-79.

- Duvall Antonacopoulos, N. M., & Pychyl, T. A. (2010). An examination of the potential role of pet ownership, human social support and pet attachment in the psychological health of individuals living alone. *Anthrozoos: A Multidisciplinary Journal of The Interactions of People & Animals*, 23(1), 37-54.
- Enmarker, I., Hellzén, O., Ekker, K., & Berg, A. G. T. (2013). Personalities and health in older cat and dog owners: A HUNT-study. *Health*, 2013.
- Epley, N., Akalis, S., Waytz, A., & Cacioppo, J. T. (2008). Creating social connection through inferential reproduction loneliness and perceived agency in gadgets, gods, and greyhounds. *Psychological Science*, 19(2), 114-120.
- Ruiz, A., y Estupiñan, J. (1992). Organización de los servicios de salud pública veterinaria en América Latina y el Caribe. *Rev. sci. tech. Off. int. Epiz*, 11(1), 117-146.
- Faver, C. A., & Cavazos, A. M. (2008). Love, Safety, and Companionship: The Human-Animal Bond and Latino Families. *Journal Of Family Social Work*, 11(3), 254-271.
- Fine, A. H. (Ed.). (2010). *Handbook on animal-assisted therapy: Theoretical foundations and guidelines for practice*. Academic Press.
- Fridlund, A. J., & MacDonald, M. (1998). Approaches to Goldie: a field study of human approach responses to canine juvenescence. *Anthrozoos: A Multidisciplinary Journal of The Interactions of People & Animals*, 11(2), 95-100.
- Friedmann, E., Katcher, A. H., Lynch, J. J., & Thomas, S. A. (1980). Animal companions and one-year survival of patients after discharge from a coronary care unit. *Public health reports*, 95(4), 307.
- Friedmann, E., Katcher, A. H., Thomas, S. A., Lynch, J. J., & Messent, P. R. (1983). Social interaction and blood pressure: Influence of animal companions. *The Journal of Nervous and Mental Disease*, 171(8), 461-465.
- Friedmann, E., Thomas, S. A. (1995). Pet ownership, social support, and one-year survival after acute myocardial infarction in the Cardiac Arrhythmia Suppression Trial (CAST). *The American journal of cardiology*, 76(17), 1213-1217.
- Friedmann, E., Thomas, S. A., Cook, L. K., Tsai, C. C., Picot, S. J. (2007). A friendly dog as potential moderator of cardiovascular response to speech in older hypertensives. *Anthrozoos: A Multidisciplinary Journal of The Interactions of People & Animals*, 20(1), 51-63.
- Friedmann, E., Thomas, S. A., & Eddy, T. J. (2005). Companion animals and human health: Physical and cardiovascular influences. *Companion animals and us*, 125-142.
- Fritz, C. L., Farver, T. B., Kass, P. H., & Hart, L. A. (1995). Association with companion animals and the expression of noncognitive symptoms in

- alzheimer's patients. *The Journal of nervous and mental disease*, 183(7), 459-463.
- Frommer, S. S., & Arluke, A. (1999). Loving them to death: Blame-displacing strategies of animal shelter workers and surrenderers. *Society & Animals*, 7(1), 1-16.
- Garrity, T. F., Stallones, L., Marx, M. B., & Johnson, T. P. (1989). Pet ownership and attachment as supportive factors in the health of the elderly. *Anthrozoos: A Multidisciplinary Journal of The Interactions of People & Animals*, 3(1), 35-44.
- Gerwolls, M. K., & Labott, S. M. (1994). Adjustment to the death of a companion animal. *Anthrozoos: A Multidisciplinary Journal of The Interactions of People & Animals*, 7(3), 172-187.
- Handlin, L., Nilsson, A., Ejdebäck, M., Hydbring-Sandberg, E., & Uvnäs-Moberg, K. (2012). Associations between the psychological characteristics of the human–dog relationship and oxytocin and cortisol levels. *Anthrozoos: A Multidisciplinary Journal of The Interactions of People & Animals*, 25(2), 215-228.
- Hart, L. A., Hart, B. L., & Bergin, B. (1987). Socializing effects of service dogs for people with disabilities. *Anthrozoos: A Multidisciplinary Journal of The Interactions of People & Animals*, 1(1), 41-44.
- Headey, B., & Grabka, M. M. (2007). Pets and human health in Germany and Australia: National longitudinal results. *Social Indicators Research*, 80(2), 297-311.
- Heath, S. E., Beck, A. M., Kass, P. H., & Glickman,
- Herzog, H. (2007). Gender differences in human–animal interactions: A review. *Anthrozoos: A Multidisciplinary Journal of The Interactions of People & Animals*, 20(1), 7-21.
- Herzog, H. (2011). The Impact of Pets on Human Health and Psychological Well-Being Fact, Fiction, or Hypothesis?. *Current Directions in Psychological Science*, 20(4), 236-239.
- Herzog, H. (2012). *Los amamos, los odiamos y... los comemos: Esa relación tan especial con los animales*. Editorial Kairós.
- Herzog, H., Bentley, R. A., & Hahn, M. W. (2004). Random drift and large shifts in popularity of dog breeds. *Proceedings of the Royal Society of London. Series B: Biological Sciences*, 271(Suppl 5), S353-S356.
- Hosey, G., & Melfi, V. (2014). Human-animal interactions, relationships and bonds: a review and analysis of the literature. *International Journal of Comparative Psychology*, 27(1).
- Islam, A., & Towell, T. (2013). Cat and Dog Companionship and Well-being: A Systematic Review. *International Journal of Applied Psychology*, 3(6), 149-155.

- Jiménez, X. O.; Hernández, R. L. y Ramírez, M. T. G. (2012). Terapia asistida por perros en el tratamiento del manejo de las emociones en adolescentes. *Summa Psicológica UST*. 9 (2), 25-33.
- Johnson, T. P., Garrity, T. F., & Stallones, L. (1992). Psychometric evaluation of the Lexington attachment to pets scale (LAPS). *Anthrozoos: A Multidisciplinary Journal of The Interactions of People & Animals*, 5(3), 160-175.
- Joubert, C. E. (1987). Pet ownership, social interest, and sociability. *Psychological Reports*, 61(2), 401-402.
- Joye, Y., & De Block, A. (2011). 'Nature and I are Two': A Critical Examination of the Biophilia Hypothesis. *Environmental Values*, 20(2), 189-215.
- Kahn, P. H. (1997). Developmental psychology and the biophilia hypothesis: Children's affiliation with nature. *Developmental review*, 17(1), 1-61.
- Kellert, S. R. (1993). Attitudes, knowledge, and behavior toward wildlife among the industrial superpowers: United States, Japan, and Germany. *Journal of social issues*, 49(1), 53-69.
- Kidd, A. H., & Feldmann, B. M. (1981). Pet ownership and self-perceptions of older people. *Psychological Reports*, 48(3), 867-875.
- Kidd, A. H., & Kidd, R. M. (1989). Factors in adults' attitudes toward pets. *Psychological Reports*, 65(3), 903-910.
- Kidd, A. H., & Kidd, R. M. (1990). Factors in children's attitudes toward pets. *Psychological Reports*, 66(3), 775-786.
- Kidd, A. H., & Kidd, R. M. (1997). Characteristics and motives of adolescent volunteers in wildlife education. *Psychological reports*, 80(3), 747-753.
- Kidd, A. H., Kidd, R. M., & Zasloff, R. L. (1995). Developmental factors in positive attitudes toward zoo animals. *Psychological Reports*, 76(1), 71-81.
- Kikusui T., Winslow J.T., & Mori Y., 2006. Social buffering: Relief from stress and anxiety. *Philosophical Transactions of the Royal Society*
- household pets: A test of a specificity model of nurturance. *Anthrozoos: A Multidisciplinary*

PRELIMINARY OUTCOMES OF FEASIBILITY AND EFFICACY OF BRIEF RESILIENCE STRESS TRAINING: A PILOT STUDY OF THE MARST PROGRAM

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Abstract

Human service professionals are at risk for stress-related psychological problems. Whilst there has been considerable research of the causes and effects of these problems, little research has been conducted on brief interventions to cultivate resilience in this at risk occupational group. Mindfulness-based interventions, which have shown promise in cultivating resilience, are also widely accepted as efficacious in the treatment of psychological disorders. The aims of this paper were to gather preliminary information regarding the feasibility of implementing a brief Mindful Awareness Resilience Skills Training program (MARST) to enhance resilience, mindfulness and positive emotions in human service professionals. The program consisted of resilience and mindfulness enhancement strategies. Twenty-two participants completed the two x one-day group training sessions over two weeks. Data were analyzed using repeated measures analysis of variance, which indicated a significant main effect of intervention. Post hoc analysis showed significant improvements between pre and post intervention scores on measures of resilience ($p = .02$) mindfulness ($p < .001$), positive reappraisal ($p = .01$) and positive emotions ($p = .03$). When comparisons were made between pre-MARST and one month follow up, positive effects of intervention were found on the measures of resilience ($p < .001$), mindfulness ($p < .001$), positive reappraisal ($p < .001$) and the reduction of negative emotions ($p = .02$). The participants provided positive feedback on the content and delivery of the MARST

program. The results from this study provide preliminary support for the MARST program to enhance resilience, mindfulness, positive reappraisal and positive emotions and amongst human service professionals.

Keywords: Mindfulness; resilience; positive reappraisal; positive and negative emotions

Background

Human service professionals obtain much satisfaction from their work with clients, and are committed to making a difference to people's lives (Huxley et al., 2005). As an occupational group, human service professionals are concerned with the intervention and empowerment of clinical and otherwise vulnerable social populations. As a result, the human services are by their very nature laden with employment-related stressors and emotionally demanding interactions (Putnik, de Jong & Verdonk 2011). Researchers who have examined the occupational hazards of human service professions have stressed that the process of caring itself, may come at significant personal and psychological costs (Harr, 2013). Some human service professionals persist, endure and thrive in their careers, while others experience mental health problems and sometimes leave the profession (Maslach, Schaufeli, & Leiter, 2001). Hence, there is an emphasis on strengthening the capacity of human service professionals to effectively respond and recover from continual exposure to these work stressors (Michie & Williams, 2003).

Resilience described as the general capacity for flexible and resourceful adaptation to external and internal stressors, includes the ability to handle environmental difficulties, demands and high pressure without experiencing negative effects (Kinman & Grant, 2011). Positive emotions and positive reappraisal amidst negative events are further important elements in the psychological resilience of workers (Collins, 2007). Debate over the development of resilience continues, with theories ranging from resilience as an innate ability, to one that is learned, while others point to a combination of both (Ginsburg & Jablow, 2006; Jacelon, 1997). Current research suggests that while some individuals may possess an innate resilience, others have learned to develop and maintain a high degree of resilience through experience and learning. A resilient person can learn to achieve positive outcomes through skilled preparation, confidence and perseverance, despite the existence of possible threats (Phillips, 2008). Resilient individuals are characterized by being optimistic with high positive emotionality, open to new experiences and have the capacity to rebound from negative circumstances (Lazarus, 1993; Masten, 2001).

Tugade and Frederickson's (2004) research on the broaden and build

model surrounding the function of positive emotions in understanding resilience, posits that positive emotions broaden a person's individual focus and behavioural repertoire. In turn, this generates enhanced flexibility, creativity, openness and creates solutions, which become integral in coping and thriving in spite of adversity. Repeated experiences of positive emotions leads to broad minded coping becoming habitual and a personal resource, which is characteristic of a resilient person (Frederickson, Tugade, Wugh, Larkin, 2003). Positive emotions also have significant adaptational functions in the coping process. Positive emotions can be generated to effectively cope with the stress and adversity through positive reappraisal (Folkman & Moskowitz, 2000). Positive reappraisal involves using cognitive strategies to appraise a difficult situation more positively to view it in a more favourable light (Frederickson et al., 2003).

One internal mechanism, which has received a growing base of empirical support as a skill to enhance adaptive coping to stress, is the practice of mindfulness (Baer, 2010; Kabat-Zinn, 2003). Bishop et al., (2004) argues that mindfulness, as a state of being comprises two components: self-regulation of attention to an immediate experience, and maintenance of a specific orientation towards the immediate experience. Self-regulation of attention to an immediate experience involves sustained attention, attention switching, and the inhibition of elaborative processing. The maintenance of a specific orientation incorporates curiosity, experiential openness, and acceptance regardless of the emotion, thought or sensation present. This practice allows for an accepting and non-judgmental view of one's internal (e.g. thoughts, feelings and physiological symptoms) and external (e.g., sounds and sights) present moment experience. As mindfulness allows for present moment awareness while letting go of the past and future, it promotes a sense of non-attachment and the ability to let go of the ego, therefore, demonstrating the potential to foster resilience (Shapiro, Carlson, Astin, & Freedman, 2006). In addition, recent research suggests that mindfulness is associated with and predicts resilience (Keye & Pidgeon, 2013; Pidgeon & Keye, 2014).

Neurobiological research has shown that mindfulness may be beneficial in increasing resilience and reducing the impact of trauma through left prefrontal cortex (PFC) activation and neutralizing amygdala activity. According to Davidson et al. (2003) the left PFC inhibits the stress response in the amygdala, which is attributed to encoding memories of fearful or anxious experiences. Consequently, interventions that increase left PFC activation will diminish the stress response in the amygdala and therefore reduce the time an individual needs to recover from traumatic stress, thus potentially increasing resilience to compassion fatigue (Feder, Nestler & Charney, 2009). Research suggests that experienced mindfulness mediators

tend to experience more positive emotions, and that this experience is correlated with high left PFC activation (Davidson et al., 2003).

With resilience being amenable to change, life experiences in particular work-stress can deplete resilience (Cooper, Flint-Taylor & Pearn, 2013). Resilience skills training implemented in work places has shown to not only enhance an employee's work performance, but also enhance the worker's social and psychological wellbeing (Waite & Richardson, 2004; Burton, Pakenham & Brown, 2010). Although research remains limited, mindfulness-based interventions implemented in the work place have also demonstrated efficacy in increasing resilience and fostering psychological well-being among workers (Pidgeon, Ford, & Klaassen, 2014; Stanley, Schaldach, Kiyonaga, & Jha, 2011). These interventions have included a Mindfulness-Based Mind Fitness Training for improving resilience and performance among soldiers (Stanley et al., 2011); and a Mindfulness with Metta Training program which cultivated resilience in human service professionals (Pidgeon et al., 2014). Brief mindfulness-based interventions also have shown to be effective for reducing stress in health practitioners (Mackenzie, Poulin, Seidman-Carlson, 2006) and increasing positive emotions and decreased negative emotions (Erisman & Roemer, 2010).

The current study examined the feasibility and efficacy of the brief MARST program to cultivate resilience, mindfulness, positive reappraisal and positive emotions in human services workers. It was predicted that from pre to post MARST training and follow up, human services professionals attending the MARST program would report significant improvements in levels of resilience, mindfulness, positive reappraisal and positive and negative emotions.

Method

This study was a single group pre-post MARST training with outcome measures that assessed participant's levels of resilience, mindfulness, positive reappraisal and positive and negative emotions pre, post and one-month follow up. Outcome assessments included qualitative and quantitative self-report questionnaires. The study protocol was approved by Bond University Research Ethics Committee.

Participants

Twenty-two human services professionals recruited from a not-for-profit community organisation in rural Queensland participated in this study. The participants ranged from 23 to 60 years of age ($M=38.14$, $SD=11.40$). The sample comprised of 18 females (82%) and 4 males (18%). Due to reported time pressures and absence due to annual leave, 19 participants completed the questionnaires at all measurement points.

The intervention

Participants attended the two x one-day MARST program over a two-week period. The participants were required to complete self-report measures of resilience, mindfulness, positive reappraisal, positive and negative emotion pre, post and one-month following the MARST training. The MARST program targeted core aspects of mindfulness, resilience and positive reappraisal. The program consisted of resilience and mindfulness enhancement strategies that included change and acceptance techniques based on cognitive behavior therapy and mindfulness meditation practices. Sessions involve psycho-education, interactive discussion, skills training in everyday mindfulness tools and mindfulness meditation, identifying non-resilient and resilient thinking styles, experiential exercises and home activities.

Measures

Self-report questionnaires were used to collect participant's demographics, evaluation of the MARST program, levels of resilience, mindfulness, positive reappraisal, positive and negative emotions. The measures included: (i) Resilience: the Resilience Questionnaire (RQ; Reivich & Shatte, 2002) which is a 60-item scale to measure resilience. Higher RQ scores are indicative of higher levels of resilience; (ii) Mindfulness: the Freiburg Mindfulness Inventory (FMI; Walach, Buchheld, Butenmuller, Kleinknecht & Schmidt, 2006) a 14 item scale which assesses levels of mindfulness; (iii) Positive and negative emotions: the Positive and Negative Schedule (PANAS; Watson, Clark & Tellegan, 1988) which measures the experience and frequency of positive and negative emotions; and (iv) Positive reappraisal: the Cognitive Distortions Questionnaire (De Oliveira & Schwartz, 2014) which is a 15-item self-report questionnaire designed to simultaneously measure cognitive distortions across the two dimensions of frequency and intensity, and to provide a weighted summation of the overall experience for the individual.

Results

The demographic characteristics of participants are presented in Table 1. Prior to analyses, the data was screened and assumptions were met. A repeated measures analysis of variance (RM-ANOVA) was performed to compare the effect of MARST training pre-post-follow up, on measures of resilience, mindfulness, positive reappraisal and positive and negative emotions. The results showed a significant main effect of intervention, Wilks' Lambda = 0.13, $F(10,9) = 5.94$, $p = .007$, with paired samples t-tests showing a significant difference ($p < 0.05$) between pre-post MARST on measures of resilience, ($t[21] = -5.90$, $p = 0.02$), mindfulness, ($t[21] = -6.63$,

$p < .001$), positive reappraisal, ($t[21] = 5.44$, $p = 0.01$) and positive emotion, ($t[21] = -2.90$, $p = 0.03$). These results suggest that human service professionals reported significant improvements in their levels of resilience, mindfulness, positive reappraisal and positive emotions when they had completed the MARST program. When post hoc comparisons were made between pre and one month following MARST, the significant increases remained stable on measures of resilience, ($t[21] = -8.47$, $p < .001$), mindfulness, ($t[21] = -7.42$, $p < .001$), positive reappraisal ($t[21] = 6.05$, $p < .001$), and in addition, significant decreases in negative emotions, ($t[21] = 2.16$, $p = 0.02$) were found. Specifically, these results indicate that human service professionals reported sustaining the significant improvements in their levels of resilience, mindfulness, and positive reappraisal with the addition of significant improvements in their negative emotions one-month after completing the MARST program.

Table 1 *Demographic Characteristics Of Sample*

	Study Sample % (n)
Gender	
Women	82(18)
Men	18(4)
Age Group (years)	
20-30	36(8)
31-40	32(7)
41-50	14(3)
51-60	18(4)
Highest Level of Education	
Year 10	-
Year 12	-
Undergraduate	73(16)
Postgraduate	27(6)
Occupation	
Supervisor	9(2)
Family support worker	4(1)
Foster care worker	27(6)
Counselor	14(3)
Case worker	27(6)
Other	14(3)
No. of years employed at current organization	
< 1	36(8)
1-2	41(9)
2-3	4(1)
3-4	4(1)
5+	15(3)

Standardized mean difference scores and 95% confidence intervals are displayed in Table 2 for each measure pre-post MARST. Table 3 illustrates standardized mean difference scores and 95% confidence intervals

comparing pre-MARST-follow up. Cohen's standards (large [0.8], medium [0.5], and small [0.2]) were used to interpret the magnitude of intervention effects (Cohen, 1988). As this was a small-scale feasibility study, an alpha of .05 was used to determine statistical significance. There was a large favorable effect of intervention ($\eta^2 = .87$), with moderate favorable intervention effects on measures of resilience ($\eta^2 = .58$), mindfulness ($\eta^2 = .68$), and positive reappraisal ($\eta^2 = .53$); and small effects on measures of positive emotion ($\eta^2 = .17$) and negative emotion ($\eta^2 = .27$).

Subsequently, participant feedback on the program was very positive and showed a high level of acceptability. On a seven-point Likert scale, the mean rating for the program quality was 6.50 (7 = excellent; 1 = poor) and the mean rating of overall satisfaction was 6.41 (7 = very satisfied; 1 = very dissatisfied). On a seven-point Likert scale (7 = yes definitely; 1 = definitely not), the mean rating for the ability to integrate the skills learnt into everyday practice was 5.60.

Table 2 Mean Differences In Measures Between Pre-MARST and Post-MARST.

Measure	Mean Difference (SD)	95% Confidence Interval*	<i>p</i>
Positive emotion	-2.90 (5.08)	-5.39 - 0.39	.03
Negative emotion	1.63 (4.60)	-0.52 - 3.80	.13
Resilience	-5.90 (10.08)	-10.87 - 0.92	.02
Mindfulness	-6.63 (5.20)	-9.08 - 4.18	<.001
Positive reappraisal	5.44 (7.05)	1.80 - 3.22	.01

Note: Negative mean difference implies favourable change.

*The 95% Confidence Interval refers to the amount of error/variation that can be expected for test scores.

Table 3 Mean Differences In Measures Between Pre-MARST and Follow-up.

Measure	Mean Difference (SD)	95% Confidence Interval*	<i>p</i>
Positive emotion	-2.53 (5.76)	-5.24 - 1.18	.07
Negative emotion	2.16 (3.75)	-.389 - 3.93	.02
Resilience	-8.47 (7.40)	-12.04 - 4.90	<.001
Mindfulness	-7.42 (5.18)	-9.91 - 4.93	<.001
Positive reappraisal	6.05 (5.88)	3.22 - 8.88	<.001

Note: Negative mean difference implies favourable change.

*The 95% Confidence Interval refers to the amount of error/variation that can be expected for test scores.

Discussion

The purpose of the current study was to examine the efficacy of a Mindful-Awareness and Resilience Skills Training (MARST) program to enhance mindfulness, resilience, positive reappraisal, and positive and negative emotions. The results provide preliminary support for the feasibility of the MARST program to be implemented as a brief group-based training in a workplace setting to enhance: resilience, mindfulness, positive reappraisal, positive and negative emotions. The results also suggest that resilience is a dynamic and modifiable construct, amenable to change and responsive to educational, cognitive transformational and personal growth processes (Jackson et al., 2007; Tebes et al., 2004). The finding provides preliminary support for studies, which suggest the efficacy of mindfulness-based interventions to replenish resilience and improve mindfulness and psychological well being (Pidgeon et al., 2014; Stanley et al., 2011). The MARST program also appears to be efficacious in producing sustainable outcomes over time. Participant positive feedback indicated a high level of acceptability for MARST, both in process and content of program. Future work could examine the efficacy of the MARST program in a controlled trial and also investigate the mechanisms of change.

A number of limitations for consideration when examining the results include, attrition contributed to the small sample size, which limits the generalisability of the findings; and the sample was predominantly female, well educated and recruited from the same not-for-profit organisation. Future studies should include a larger sample recruited from more diverse educational and socioeconomic backgrounds, and multiple human service employers.

In conclusion, the results shows promise for the feasibility of implementing the MARST program as a group-training program in a worksite setting to improve resilience, mindfulness, positive reappraisal, positive and negative emotions among human service professionals. Considering the important role that human service professionals perform within our society and the established risks associated with this work, the development of programs that can effectively develop resilience and protect against work-related stress not only benefits professionals, but also benefits organisations, clients, and the community at large.

References:

Baer, R., Smith, G., Lykins, E., Button, D., Krietemeyer, J., Sauer, S, & Williams, M. (2008). Construct validity of the five facet mindfulness questionnaire in meditating and non-meditating samples. *Assessment*, 15, 329-342. doi:10.1177/1073191107313003

- Bishop, S., Lau, M., Shapiro, S., Carlson, L., Anderson, N., Carmody, J. & Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice*, 11(3), 230-241. doi:10.1093/clipsy.bph077
- Burton, N., Pakenham, K. & Brown, W. (2010). Feasibility and effectiveness of psychosocial resilience training: A pilot study of the READY program. *Psychology, Health & Medicine*, 15(3), 266–277.
- Coffey, M., Dudgeon, L. & Tattersall, A. (2004). Stress in social services: Mental wellbeing, constraints and job satisfaction. *British Journal of Social Work*, 34(5), 735-747.
- Collins, S. (2008). Social workers, resilience, positive emotions and optimism. *Practice*, 19(4), 255-269. doi:10.1177/1073191107313003
- Cooper, C. L., Flint-Taylor, J., & Pearn, M. (2013). *Building resilience for success: A resource for managers and organizations*. New York: Palgrave Macmillan.
- Davidson, R., Kabat-Zinn J., Schumacher, J., Rosenkranz, M., Muller, D., Santorelli, S. F. & Sheridan, J. F. (2003). Alterations in brain and immune function produced by mindfulness meditation. *Psychosomatic Medicine*, 65, 564-570. doi:10.1097/01.PSY.0000077505.67574.E3
- De Oliveira, I. R. & Schwartz, T. (Eds) (2014). *Integrating Psychotherapy and Psychopharmacology: A Handbook for Clinicians* New York:Routledge
- Erismann S. M., & Roemer L. (2010). A preliminary investigation of the effects of experimentally induced mindfulness on emotional responding to film clips. *Emotion*, 10(1), 72-82. doi:10.1037/a0017162
- Feder, A., Nestler, E. J., & Charney, D. S. (2009). Psychobiology and molecular genetics of resilience. *Nature Reviews Neuroscience*, 10(6), 446-457. doi:10.1038/nrn2649
- Folkman, S., Moskowitz, J.T. (2000). Positive affect and the other side of coping. *American Psychologist*, 55, 647–654. doi:10.1037/0003-066X.55.6.647
- Fredrickson, B. L., Tugade, M. M., Waugh, C. E., & Larkin, G. R. (2003). What good are positive emotions in crisis? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *Journal of Personality & Social Psychology*, 84, 365–376. doi:10.1037/0022-3514.84.2.365
- Gilligan, R. (2007). Adversity, resilience and the educational progress of young people in public care. *Emotional and Behavioural Difficulties*, 12(2) 135-145. doi:10.1080/1363275070131563
- Ginsburg, K. R., & Jablo, M. A. (2006). *Parent's guide to building resilience in children and teens: Giving your child roots and wings*. IL: American Academy of Pediatrics.

- Huxley, P., Evans, S., Gately, C., Webber, M., Mears, A., Pajak, S., Kendall, T., Medina, J. & Katona, C. (2005). Stress & pressure in mental health social work: The worker speaks. *British Journal of Social Work*, 35(7), 1063-1079. doi:10.1093/bjsw/bch218
- Harr, C. (2013). Promoting workplace health by diminishing the negative impact of compassion fatigue and increasing compassion satisfaction. *Social Work and Christianity*, 40(1), 71-88.
- Jacelon, C. S. (1997). The trait and process of resilience. *Journal of Advanced Nursing*, 25(1), 123-129.
- Jackson, D., Firtko, A., & Edenborough, M. (2007). Personal resilience as a strategy for surviving and thriving in the face of workplace adversity: A literature review. *Journal of Advanced Nursing*, 60(1), 1-9.
- Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice*, 10(2), 144-156. doi:10.1093/clipsy.bpg016
- Keye, M. & Pidgeon A.M. (2013). An investigation of the relationship between resilience, mindfulness, and academic self-efficacy. *Open Journal of Social Sciences*, 1(6), 1-4.
- Kinman, G. & L Grant. (2011). Exploring stress resilience in trainee social workers: The role of emotional and social competencies. *British Journal of Social Work Education*, 41(2), 261-275. doi:10.1093/bjsw/bcq088
- Lazarus, R. S. (1993). From psychological stress to the emotions: A history of changing outlooks. *Annual Review of Psychology*, 44, 1-21. doi:10.1146/annurev.ps.44.020193.000245
- Mackenzie, C. S., Poulin, P. A., & Seidman-Carlson, R. N. (2006). A brief mindfulness-based stress reduction intervention for nurses and nurses aides. *Applied Nursing Research*, 19(2), 105-109. doi:10.1016/j.apnr.2005.08.002
- Maslach, C., Schaufeli, W., & Leiter, M. (2001). Job burnout. *Annual Review of Psychology*, 52, 397-422. doi:10.1146/annurev.psych.52.1.397
- Masten, A.S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, 56, 227-238. doi:10.1037/0003-066X.56.3.227
- Michie, S. & Williams, S. (2003). Reducing work related psychological ill health and sickness absence: A systematic literature review. *Occupational and Environmental Medicine*, 60(1), 3-9. doi:10.1136/oem.60.1.3
- Phillips, G. (2008). Resilience in practice interventions. *Child Care in Practice*, 14(1), 45-54. doi:10.1080/13575270701733716
- Pidgeon, A. M., Ford, L., & Klaassen, F. (2014). Evaluating the effectiveness of enhancing resilience in human service professionals using a retreat-based mindfulness with metta training program: A randomised control trial. *Psychology, Health & Medicine*, 19(3), 355-364.

- Pidgeon, A.M. & Keye, M. (2014). Relationship between resilience, mindfulness, and psychological well-being in university students. *International Journal of Liberal Arts and Social Science*, 2(5), 27-32.
- Putnik, K., de Jong, A., & Verdonk, P. (2011). Road to help-seeking among (dedicated) human service professionals with burnout. *Patient Education and Counselling*, 83(1), 49-54. doi:10.1016/j.pec.2010.01.004
- Reivich, K. & Shatte, A. (2002). *The resilience factor: Seven essential skills for overcoming life's inevitable obstacles*. New York: Broadway Books
- Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology*, 62(3), 373-386. doi:10.1002/jclp.20237
- Steensma, H., Den Heijer, M., & Stallen, V. (2006). Research note: Effects of resilience training on the reduction of stress and depression among Dutch workers. *International Quarterly of Community Health Education*, 27(2), 145-159. doi:10.2190/IQ.27.2.e
- Stanley, E. A., Schaldach, J. M., Kiyonaga, A., & Jha, A. P. (2011). Mindfulness-based mind fitness training: A case study of a high-stress pre-deployment military cohort. *Cognitive and Behavioral Practice*, 18(4), 566-576.
- Tebes, J. K., Irish, J. T., Vasquez, M. J. P., & Perkins, D. V. (2004). Cognitive transformation as a marker of resilience. *Substance Use & Misuse*, 39(5), 769-788. doi:10.1081/JA-120034015
- Tugade, M. & Frederickson, B. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology*, 86(2), 320-333. doi:10.1037/0022-3514.86.2.320
- Waite, P. & Richardson, G.E. (2004). Determining the efficacy of resiliency training in the worksite. *Journal of Allied Health*, 33(3), 178-183.
- Walach, H., Buchheld, N., Buttenmüller, V., Kleinknecht, N., & Schmidt, S. (2006). Measuring mindfulness – The Freiburg Mindfulness Inventory (FMI). *Personality and Individual Differences*, 40, 1543-1555. doi:10.1016/j.paid.2005.11.025
- Watson, D., & Clark, L. A. (1994). *The PANAS-X: Manual for the positive and negative affect schedule-expanded form*. Ames: The University of Iowa.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063-1070.

ANÁLISIS TRANSACCIONAL PARA FORMADORES DE MEDIADORES

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Abstract

We present a pilot project based on the fact that the Students Trainers of School Mediators handles the techniques of Effective Communication by applying the following instruments of Transactional Analysis: Personality Model (PAC: Parent-Adult - Child), Behavioral Signs, Transactions, Stroke, Existential Positions, and Emotions. However, it makes the student to be able to understand their own behaviors and to set goals for change of a better school life.

Keywords: School mediators, effective communication

Resumen

Presentamos una experiencia piloto para lograr que los Alumnos Formadores de Mediadores Escolares manejen las técnicas de Comunicación Efectiva aplicando los siguientes instrumentos del Análisis Transaccional: Esquema de la Personalidad (PAN: Padre-Adulto-Niño), Signos de Conducta, Transacciones, Caricias, Posición Existencial y Emociones; pudiendo así conocer las propias conductas y fijar objetivos de cambio para una mejor convivencia escolar.

Palabras clave: Fomadores de mediadores esolares, Análisis Transaccional

Introducción

Las Naciones Unidas, sobre todo a través de la Unesco, Unicef y OMS, se ha ocupado de la violencia escolar-En Argentina en los últimos años se han generado programas y proyectos pro-activos y preventivos. Entre ellos existe un programa de Mediación Escolar donde los alumnos actúan como mediadores ante la aparición de problemas que generan violencia, previa preparación con docentes especializados que los instruyen para cumplir ese rol.

Sobre esta base presentamos una experiencia piloto para lograr que los Alumnos Formadores de Mediadores Escolares manejen las técnicas de Comunicación Efectiva aplicando los siguientes instrumentos del Análisis Transaccional: Esquema de la Personalidad (PAN: Padre-Adulto-Niño), Signos de Conducta, Transacciones, Caricias, Posición Existencial y Emociones; pudiendo así conocer las propias conductas y fijar objetivos de cambio para una mejor convivencia escolar.

Se ha optado por los instrumentos del Análisis Transaccional, pues conociendo el Esquema de la Personalidad los alumnos aprenderán a separar las distintas partes del Yo total, realizando diálogos entre dichas partes (PAN), en caso de conflictos internos, y así tomar conciencia de las incongruencias, conductas no conscientes y su influencia en las decisiones reemplazar diálogos internos negativos por positivos.

Tomar conciencia de la propia conducta, tanto verbal como no verbal, y sus correspondientes signos y lograr un grado de control consciente e inconsciente sobre las conductas del entorno, permitirá evaluar/monitorear las respuestas (feedback) a las mismas.

Conocer los principios de la Comunicación Efectiva, incorporándolos para su empleo en forma automática y diaria.

Optimizar el manejo actual de las “Caricias”.-Conocer la Posición Existencial propia y de los demás, así como la relación entre ambas y mantenerse en la Posición Realista, aun en condiciones de stress intenso.

Detectar y vivenciar las Cinco Emociones Auténticas (Alegría, Afecto, Miedo, Rabia y Tristeza), expresarlas verbal y físicamente en forma socialmente adecuadas, controlar su expresión cuando la situación lo requiera (sentirlas, expresarlas), reemplazar las emociones sustitutivas (“rebusques”) por las auténticas subyacentes.

Esta experiencia será realizada con dieciocho alumnos Formadores de Mediadores Escolares de 6° año de secundario, cuyas edades oscilan entre diecisiete y dieciocho años. Contamos con la presencia de nueve padres y los faltantes participaron desde sus hogares.

La finalidad del trabajo es lograr el autoconocimiento a través de los Instrumentos del Análisis Transaccional en los Alumnos Formadores de Mediadores, para promover métodos que acrecienten la calidad de vida e introducir a los participantes en nuevas formas de comunicación.

Se realizó a través de un Aula Taller con técnicas vivenciales y diversos métodos prácticos. Se utilizaron el Libro de Actas, encuesta de alumnos y padres, y cuestionario de Habilidades sociales y Resolución de conflictos

Un poco de historia, antecedentes y organismos

Estados Unidos hace más de quince años que viene implementando la mediación en muchas de sus escuelas elementales y medias. Justamente por ser pioneros y remontarse a ese país la historia de la mediación en las escuelas, le dedicaremos un párrafo especial. A saber:

Siempre pensando en cómo hacer para disminuir la ola de violencia escolar, ya desde principios de la década de 1960 diversos grupos de personas -algunos de ellos religiosos- se interesaron por transmitir lo importante que resultaría entrenar a los niños y jóvenes en las distintas habilidades y técnicas de resolución pacífica de disputas escolares. Convengamos que una serie de docentes “con muy buenas intenciones” trabajaron desde sus puestos en tal sentido, pero estos esfuerzos carecieron de una estructura adecuada y, poco tiempo después, cayeron en desuso.

Recién casi dos décadas después, la Asociación de Educadores para la Responsabilidad Social comenzó a organizar estas inquietudes, que se cristalizarían en 1984, en los Estados Unidos, con la creación de una segunda asociación de trascendencia internacional: la Academia Nacional para Mediadores en Educación (NAME). Su principal soporte se basaba en la experiencia misma de aquellos que ya se habían animado a dar sus primeros pasos en los diversos programas de mediación ensayados en sus respectivas escuelas. Los resultados arrojados en las mismas fueron determinantes: *“la mediación mejora la comunicación y reduce el conflicto escolar”*.

Hoy, varios años después, las estadísticas y los hechos ratifican la veracidad de aquellas afirmaciones: las escuelas que “más paz” tienen son las que han implementado algún programa -ya hay más de 300 variantes- de este tipo.

Los organismos dedicados al tema también se han multiplicado, aunque, lamentablemente, no tanto como el incremento de la violencia, la agresión, la intolerancia y la incomunicación en el mundo; inclusive dentro del pequeño mundo de la escuela, que -por supuesto- no queda exento.

- Costa Rica tomó la iniciativa de sancionar una ley que incorpora de manera obligatoria los contenidos relacionados con la resolución pacífica de controversias a las diferentes currículas escolares.
- Francia y Canadá, entre otros, se han destacado por la implementación de una serie de programas de convivencia social tendientes a la formación y entrenamiento tanto de los estudiantes como de los docentes.
- En toda Latinoamérica se han practicado y se practican varias experiencias piloto. Casi todas resultaron exitosas, pero la mayoría, con la salvedad de honrosas excepciones, de transitoria duración.
- Argentina hace vanguardia entre los países de América del Sur. Prueba de ello, resultan los programas de mediación que comenzaron a aplicarse al promediar la década del 90 y que aún continúan vigentes.

- La Ciudad de Buenos Aires con su masivo programa para escuelas públicas y los múltiples proyectos - reconocidos internacionalmente- que se pusieron en marcha en varios colegios (públicos y privados, laicos y religiosos) de la Provincia homónima, son muestras documentadas, perdurables y eficientes de la tarea realizada a favor de la paz escolar. En tal sentido, merece mencionarse la “Experiencia de La Reja” por haber sido reconocida como el “primer proyecto latinoamericano en mediación escolar” por diversos organismos internacionales como “*The Community Board Program*” de San Francisco (U.S.A.) y “*Peace Education Foundation*” con sede en Miami. Esta experiencia de convivencia escolar con mediación global y de pares, se implementó –bajo la conducción de este mismo autor- Veiga, Ruben; a partir de 1994 en una pequeña comunidad del conurbano bonaerense denominada “La Reja”.
- Otro tanto ameritan los denodados esfuerzos del interior que, desde Resistencia hasta Bariloche, se encargaron de recorrer diferentes caminos pero con los mismos puntos de llegada: reducir el conflicto, mejorar la comunicación y favorecer la convivencia escolar.

Legislación local; soportes a nivel nacional, provincial y municipal

A nivel nacional, rige desde el 20 de agosto de 1997, la resolución 62/97 del Consejo Federal de Cultura y Educación: “*Criterios básicos para el desarrollo de normas de convivencia en las instituciones escolares*”, en donde se recomienda expresamente a la mediación como alternativa de resolución de los conflictos escolares.

Dentro de las jurisdicciones provinciales, valen destacar la Ley chaqueña N° 4711/2000: “*Plan provincial de mediación escolar*”, no sólo por su vanguardismo sino también por su contundente apuesta a esta herramienta favorecedora de la buena convivencia escolar; y la Ley N° 6937/02 de la Provincia de Mendoza: “*Ley para la No violencia escolar*”, que incorpora el concepto de mediación entre pares. Las provincias de San Juan y del Chubut, por su parte, han emprendido caminos legislativos semejantes.

En el ámbito municipal, se difundió el proyecto del concejal cordobés Hugo Caparrós, pronto convertido en la ordenanza 9801/97 del H.C.D. de la Ciudad de Córdoba: “*Implementación de la mediación escolar en las escuelas municipales de la Ciudad de Córdoba*”, aunque –lamentablemente- el presupuesto de la comuna no acompañó las expectativas generadas tanto por su iniciador (Caparrós) como por las nobles intenciones del proyecto mismo.

Después de la última reforma constitucional, la Legislatura de la Ciudad Autónoma de Buenos Aires sancionó la Ley N° 223: “*Sistema escolar de convivencia*” reglamentado a través del Decreto 1400/01, desde

donde se alienta la implementación de estas nuevas formas de resolución de disputas escolares.

Antecedentes en la provincia de Buenos Aires, Pdo. De Alte. Brown Instituto Amancio Alcorta

- Talleres de mediación para 1028 alumnos dictados desde 2005, con 98 alumnos formados como mediadores.
- En el año 2014 se realizó una experiencia piloto de Formador de formadores de alumnos mediadores.
- Resultados: No se registran situaciones de violencia que requieran mediaciones desde el 2009.
- Resultados: 2013-2014 se realizaron 5 mediaciones por implementación de nuevas habilidades y Amplia difusión del proyecto.

E.e.s n16

- Desde el año 2013 se implemento el taller de comunicación y metas de vida, basados en el modelo de Áreas y roles fundamentales del Dr Roberto Kertész

E.e.s n17

- Durante el año 2013 se implemento el taller de comunicación y metas de vida, basados en el modelo de Áreas y roles fundamentales del Dr Roberto Kertesz

Objetivos

Lograr el autoconocimiento a través de los Instrumentos del Análisis Transaccional en los Alumnos Formadores de Mediadores.

- Promover métodos para acrecentar la calidad de vida.
- Facilitar el cumplimiento de Objetivos activando estados del Yo.
- Incorporar habilidades sociales al repertorio de conductas.
- Iniciar contactos sociales cordiales para evitar situaciones de conflictos y violencia.
- Conocer el concepto de Asertividad y su utilidad social.
- Conocer el concepto de Autoestima (Autovaloración).

Materiales y métodos:

- Dieciocho alumnos de entre diecisiete y dieciocho años que cursan el 6° año del nivel secundario del año lectivo 2014.
- 18 Padres de Alumnos Formadores de Mediadores Escolares.
- Instituto Amancio Alcorta. Burzaco. Partido de Almirante Brown. Provincia de Buenos Aires. Argentina.

Métodos:

La metodología que se aplica es la de Aula Taller. Esto es fundamentalmente práctica y se desarrolla a través de Role Playing, juegos, ejercicios, observaciones, experiencias, encuestas cualitativas y cuestionarios cuantitativos.

El fundamento teórico, así como el material bibliográfico, será entregado a los Alumnos Formadores de Mediadores Escolares, a medida que transcurra el Taller y como consecuencia de lo experimentado previamente.

En la metodología para la resolución de conflictos escolares se incluyen:

Habilidades Emocionales

- Identificación y designación de sentimientos.
- Expresión de sentimientos.
- Evaluación de la intensidad de los sentimientos.
- Dominio de impulsos.
- Reducción del stress.
- Conocimiento de la diferencia entre sentimientos y acciones.

Habilidades Cognitivas

- Conversación personal: conducción de un “diálogo interior” como una forma de enfrentarse a un tema o desafío, o para reforzar la propia conducta.
- Lectura e interpretación de señales sociales, por ejemplo, reconocimiento de influencias sociales sobre la conducta y verse uno mismo en la perspectiva de la comunidad más grande.
- Empleo de pasos para solución de problemas y toma de decisiones, por ejemplo, dominar impulsos, fijar metas, identificar acciones alternativas, anticipar consecuencias.
- Comprensión de la perspectiva de los demás.
- Comprensión de normas de conducta (cuál es una conducta aceptable y cuál no).
- Actitud positiva hacia la vida.
- Conciencia de uno mismo, por ejemplo, desarrolla realistas con respecto a uno mismo.

Habilidades de Conducta

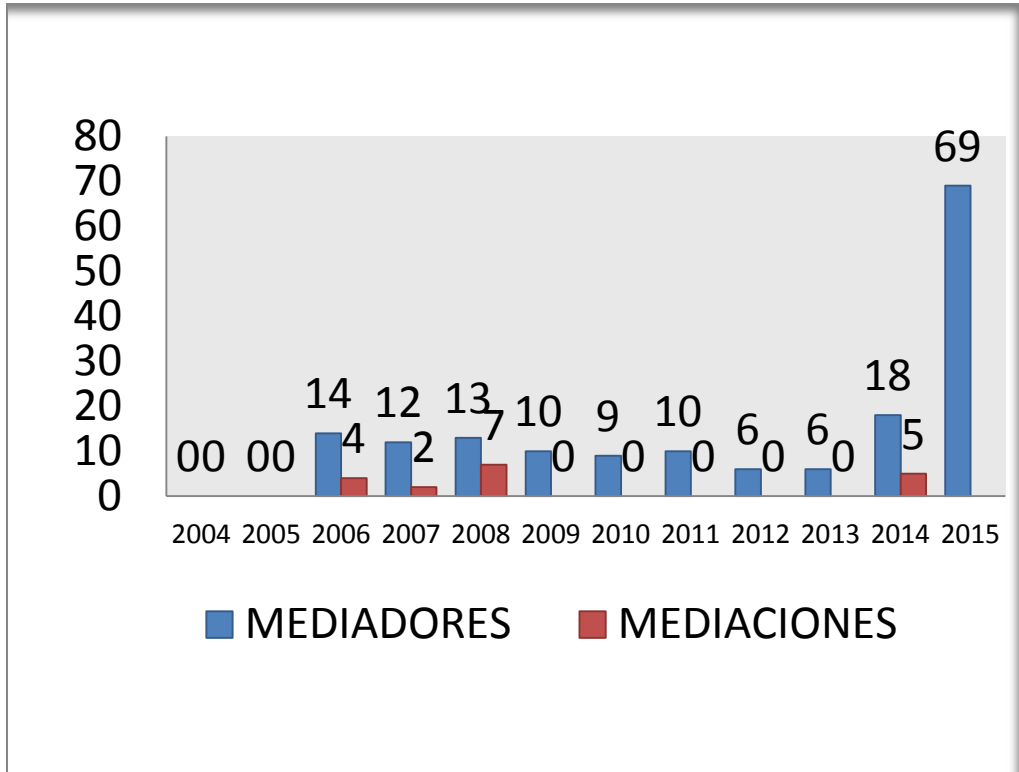
- No Verbales: Comunicarse a través del contacto visual, de la expresividad facial, del tono de voz, de los gestos, etc.
- Verbales: Hacer pedidos claros, responder eficazmente a la crítica, resistirse a las influencias negativas, escuchar a los demás, participar en grupos positivos de pares.

(FUENTE: Consorcio W.T. Grant sobre la promoción de Competencias Social).

Resultados:

Libro de Actas de Mediación Escolar.

El análisis de los datos obtenidos muestran:



Al comparar el año 2013 con el 2014 hubo un incremento del 200% en la cantidad de alumnos mediadores voluntarios.

Esto fue consecuencia de la implementación del Diagrama de Áreas de Conducta y Roles Fundamentales personalizados para realizar sus metas de vida en estado deseado.

Se manifiesta una tendencia creciente para el 2015 de inscriptos como Mediadores Voluntarios, debido a la implementación de instrumentos de análisis transaccional.

Se observa que en el 2014 hubo 5 mediaciones, siendo las principales causas la murmuración, generalización y omisión.

Durante el 2014 se implemento el taller de Formador de Formadores:

- Campaña de divulgación del proyecto
- Formación de formadores de mediadores
- Charlas de mediadores a alumnos de quinto año

- Evaluaciones realizadas por mediadores a alumnos de quinto año
- Asesoramiento individual de comunicación efectiva
- Charla informativa a cargo de la Dra. Analía Luchelli, Abogada y Lic. en Politología
- Taller integrativo de padres y alumnos mediadores

De 128 alumnos que cursan actualmente quinto año de la Secundaria, se inscribieron voluntariamente en el taller de mediación para la segunda etapa a realizar en el año 2015, el total de 69 alumnos.

Encuestas

Al finalizar el Taller, al cual concurrieron los dieciocho alumnos Formadores de Mediadores y nueve padres de dichos alumnos, nueve padres fueron encuestados en forma online, donde se les entregó una encuesta de tres preguntas a cada nivel.

Encuesta a los alumnos

1. ¿Para qué le sirve estos instrumentos del Análisis Transaccional?
2. ¿Cómo o en qué situaciones los aplicarían?
3. ¿Desearía seguir participando en futuros talleres?

De acuerdo a los resultados obtenidos en dicha encuesta se observa

- Pregunta 1: El 100% respondió que los instrumentos aprendidos son útiles para el autoconocimiento y para la comunicación efectiva.
- Pregunta 2: El 57% respondió que lo aplicaría en su familia y con amigos y el 43% lo extendería a demás a otras personas.
- Pregunta 3: El 100% respondió afirmativamente.

Encuesta a los padres

1. ¿Le agradó que su hijo realizara el taller de “Formadores de Mediadores Escolares? Fundamente.
2. ¿Para que le sirvió a su hijo ser alumno mediador y participar de este proyecto institucional?
3. ¿Qué temas propondría para futuros talleres?

En esta encuesta los resultados son los siguientes:

- Pregunta 1: El 100% respondió que gracias a la participación de sus hijos en los talleres mencionados, mejoraron la comunicación con los mismos.
- Pregunta 2: El 50% respondió que sus hijos aprendieron a tomar decisiones acertadas, un 25% que mejoraron las relaciones con los demás y otro 25% que hacen planes para el futuro.
- Pregunta 3: Propusieron los siguientes temas:

- Talleres integrados con técnicas de comunicación padres e hijos.
- Talleres de resolución de conflictos para padres Medidores
 - . Bullying y discriminación;
 - . Tolerancia y comprensión;
 - . Sexualidad;
 - . Libertad responsable.

Expectativas

Nuestras expectativas sobre el taller realizado fueron ampliamente satisfechas, debido a la concurrencia del 100% de los alumnos Formadores de mediadores y el 50% de los padres de esos alumnos y el otro 50% participó en encuestas online en forma solícita, cumpliéndose así el trípode Educativo Docente- Familia- Estudiantes.

Hubo en el taller, fluidez en la participación de los concurrentes, en un ambiente de conocimiento, cordialidad y alegría.

Cuestionario “Grado de resolución de conflictos escolares” Enfoque Multimodal

Cuestionarios tomados a los dieciocho Alumnos Formadores de Mediadores.

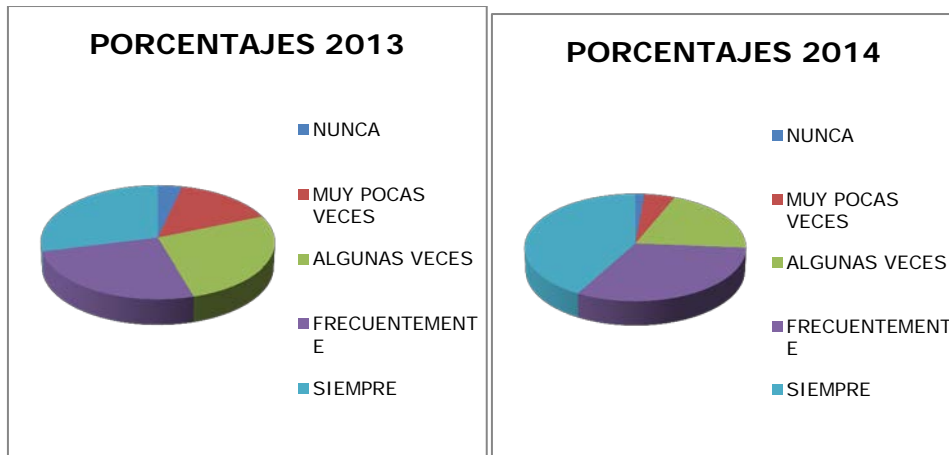
Respuestas y Porcentajes.

Para medir como bajar la carga agresiva se realizó el cuestionario “Grado de resolución de conflictos escolares”. Enfoque Multimodal.

Se tomó una muestra en 5° año del ciclo lectivo 2013 y luego se volvió a tomar dicha muestra, al mismo grupo, en 6° año del ciclo lectivo 2014, obteniendo los siguientes resultados:

RESPUESTAS	2013	2014
NUNCA	15	6
MUY POCAS VECES	62	20
ALGUNAS VECES	110	83
FRECUENTEMENTE	106	132
SIEMPRE	119	174

PORCENTAJES	2013	2014
NUNCA	3,62%	1,44%
MUY POCAS VECES	14,97%	4,83%
ALGUNAS VECES	26,57%	20,04%
FRECUENTEMENTE	25,60%	31,88%
SIEMPRE	28,74%	42,02%

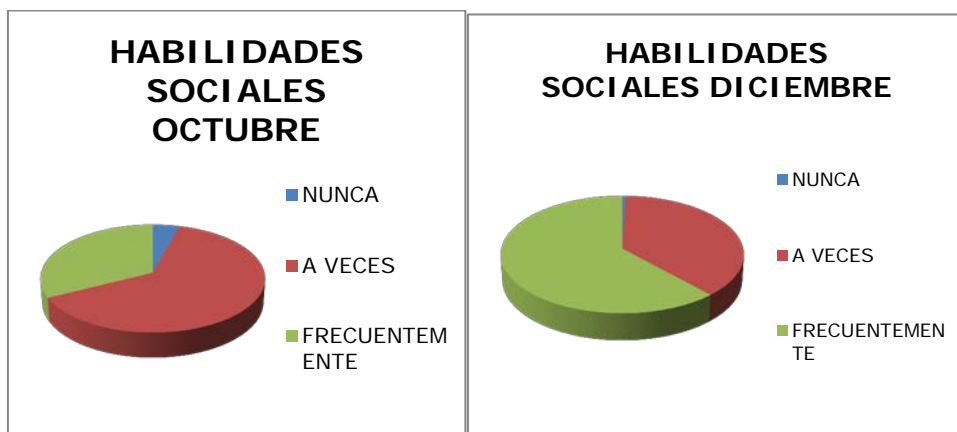


Cuestionario: Cómo están mis habilidades sociales?

También se aplicó el cuestionario “¿Cómo están mis habilidades sociales?” con 25 sugerencias para tener amigos e influenciar a los compañeros.

Se realizó una primera muestra antes del taller de “Formadores de Mediadores” y otra luego de dos meses de finalizado el mismo. Los resultados fueron los siguientes:

HABILIDADES SOCIALES	OCTUBRE		DICIEMBRE	
NUNCA	11	2,64%	2	0,46%
A VECES	169	39,12%	163	37,73%
FRECUENTEMENTE	245	56,71%	267	61,8%



**Conclusiones de los resultados de los siguientes cuestionarios:
“Cuestionario de grado de resolución de conflictos escolares”. Enfoque multimodal**

Se realizó una primera toma a dieciocho alumnos “Formadores de Mediadores Escolares”, que cursaban el 5° año de educación secundaria, en el año 2013 y una segunda muestra en el mismo grupo cuando cursaba el 6° año del ciclo lectivo 2014. Hemos podido comprobar que los conflictos escolares habían disminuido de manera notable, como se puede apreciar en la tabla de porcentajes. Esto fue debido a los talleres realizados sobre “Mediación Escolar y Análisis Transaccional para Alumnos Formadores de Mediadores”.

“CUESTIONARIO DE HABILIDADES SOCIALES”

Se realizó la primera toma a alumnos de 6° año en el mes de octubre del ciclo lectivo 2014 y la segunda toma en diciembre del mismo año, por lo cual hemos llegado a la conclusión que debido a los talleres ya mencionados, los alumnos “Formadores de Medidores Escolares” han desarrollado la escucha activa, detectando los intereses del interlocutor, invitándolo a sentirse importante, con una actitud amable, motivándolos para que puedan hablar y explayarse, liderando mediante preguntas que inducen a que los conflictos parezcan fáciles de enmendar.

Conclusion

De acuerdo al Trabajo realizado, hemos llegado a la siguiente conclusión:

Ante la falta de conocimiento de técnicas de comunicación, aumentan los conflictos escolares y cuanto mayor sea el conocimiento y aplicación de instrumentos de Análisis Transaccional entre pares, también es mayor la Comunicación Efectiva, pues entre ellos se interpretan con más afinidad los problemas de esta etapa, que cuando intervienen los adultos. De esta forma se evita el aumento de la carga emocional agresiva de los alumnos.

Plan a Futuro

- Asesoría a Instituciones Educativas.
- Taller integrado para padres y alumnos mediadores.
- El taller de mediación se implementara: Primeras cuatro etapas en Cuarto año y la quinta etapa en Quinto año de la Escuelas Secundarias.
- Formar un Equipo de Egresados como Supervisores de Mediadores

References:

Gamboa de Vitelleschi, S. (2013) “Trabajo social y Comunicacional. Juegos y dinámicas desformalizadoras para grupos”. 1° ed. , Bonum, Buenos Aires

- Goleman, D. (2009) “La inteligencia emocional. Por qué es más importante que el cociente intelectual”. Zeta., Barcelona (España)
- James, J. (2011) “La Biblia del lenguaje corporal”. 1º ed. Paidòs, Buenos Aires.
- Kalina, E. y Grynberg, H. (1985) “Hablando con padres de adolescentes”. IPPEM, Buenos Aires,.
- Kertész, R.- Atalaya, C.- Kertész, A. “Análisis transaccional integrado”. 3ª ed. IPPEM, Buenos Aires
- Kertész, R. (2004) “Análisis transaccional en vivo”. IPPEM, Buenos Aires
- Kertész, R.- Kertész, A. (1994) “Plan de vida”. Buenos Aires, IPPEM.
- Kertész, R. (2010) “El placer de aprender”. 2ª ed. Editorial de la Universidad de Flores, Buenos Aires
- Schujman, A. (2011) “Generación Ni Ni. Jóvenes sin proyectos que Ni estudian, Ni trabajan”. Lumen, Buenos Aires
- Veiga, Ruben- (2008) “La mediación en el ámbito Escolar: ¿Método RAC o Método REC?”. http://www.mediate.com/articles/ruben_veiga1.cfm

MODERNIZATION OF THE TRADING AND LOGISTIC SYSTEM OF THE FRUIT AND VEGETABLE SECTOR OF CHUBUT PROVINCE, PATAGONIA

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Abstract

The Valle Inferior del Río Chubut (VIRCH) is the main valley irrigated of Patagonia –Argentina- with 23,000 hectares (69,000 acres) where, after livestock, the vegetable and fruit production has gained second place in importance because of its localization underneath the Barrier of Animal and Plant Health of Rio Colorado, which makes the products safer since it is used much less agrochemicals, and consequently offers higher quality and less perishable, although the valley production do not cover local consumption. Because of that, the Provincial Government with the National Government's technical support created a Program denominated "Development and Strengthening of an Agrifood Platform for fruit and vegetable in Chubut Province", counting with local and international financing. This proposal tries to ensure the provision or supply of fruits and vegetables to local consumers for which requires infrastructure and adequate tools to improve transparency of commercial transactions. In the meantime, to transforming the system of wholesale marketing it is required the construction of a platform as a place of development of new services companies and improvement the current ones. This Unit will be a right marketplace for buying wholesale horticultural products coming from other markets outside the region and for stimulates consumption through the implementation of food safety and quality control among other advantages such as fair prices. The main purpose is to analyze modernization of the Trading System and Logistics for fruits and vegetables of the province of Chubut.

Keywords: Fruit and vegetable sector, logistics Transfer Center, Agrifood Platform, market development

Introduction

The project "Development and Strengthening of the Agrifood Platform for Fruit and Vegetable in Chubut, Patagonia", generated by National Government Program (PROSAP)⁶⁶ and approved by Inter-American Development Bank aims to improve the production and commercial efficiency of the sector, in order to generate a sustainable increase of the rent for all involved actors of the chain, from producer to consumer. To reach this performance improvement is proposed the modernization of the logistic and commercialization, and wholesale trade enhancement to ensure the safety and quality of products.

In the valley (VIRCH), the horticulture occupies 1,040 hectares, of which only the potato covers 50 %, meanwhile the other 50 % is destined to onions, corn, garlic, lettuce, and others. Production under cover represents about 10 hectares distributed among 30 producers. Regarding to fruit production, cultivation of cherries is the predominant activity in the valley, with 200 hectares distributed among 45 producers. This production only satisfies 15% of the regional demand, and it reaches 43% of the population of the province.

The Fruit & Vegetable production presents a marked seasonality with the particularity of supplying the local market with vegetables from October to May and fruits from December to February. Meanwhile, the rest of the year offers only potatoes, onions and carrots, generating a discontinuity in supply due to low production under cover, and low diversification out of season. Besides, there is oversupply during season with its consequent reduction in both prices and incomes. This situation generates the logistic need of increasing not only transport but also storage in order to buy products from other areas. The local capacity is of 9 platforms with space to 80,000 boxes, and with cold storage capacity of 40,000 boxes.

Small farmer works on rented land, and he is characterized by lack of technical knowledge and that is why makes improper use of agrochemicals, also has limited access to the use of modern technologies such as irrigation with fertilizers. Besides, farmer is unaware of the cost income ratio, and either knows how to use a proper post-harvest or handling equipment for improving conditioning of fruits and vegetables. This situation coupled with the commercial mismanagement does not allow to access to demanding markets. On the contrary, fruit producer (cherries) is mostly landowner,

⁶⁶ Provincial Agricultural Services Program (PROSAP)

although he has the same problems than the farmer, such as, low productivity and low export quality, with a marked seasonality and lack of technological incorporation in the post- harvest process.

The current Vegetable marketing scheme prevailing in the province is characterized by a highly atomized chain supply, lack of information flows (price, quality and varieties) for making business decisions and without management of neither Good Manufacture Practices (GMP) nor food safety system (HACCP). The direct selling by producer reaches almost 75 % of operations, particularly in the smallest stratum, whereas only 25% of producers sell according to the commercial operators requirements. This means most of them do not have standardization nor classification, poor planning and inappropriate logistic.

There is an important absence of a supply system formal and organized, similar to what happens in other provinces. Most of the merchandise is sold in farm and transporting is not registered or supervised, generating an informal circuit, which facilitates the lack of reliable numbers and an absence of control of movement of the products. Besides, vehicles carrying products from the farms to the distribution centers and retailers usually do not carry documents (transport's guides) pointing out the species and the quantity transported. Furthermore, which aggravates the situation described is the lack of safety control of the products to be consumed by the population, i.e. the safety of the products at any point of the chain is not guaranteed, generating a high health risk to the consumer.

The wholesalers supply fresh products to retailers in the province and the rest of southern Patagonia, especially Comodoro Rivadavia (the city with the highest population of the region). In the program area, formally operates 9 wholesalers, 6 are located in Trelew and 3 in Puerto Madryn. The three largest ones serve the double purpose of producers integrated and wholesalers, providing cold storage and warehouse for bulk; one of them also has a washing platform of carrots. Additionally, in terms of tasks such as: classification, packaging and processing, the province only has infrastructure for potato washing that belongs to the municipality of Dolavon, and a lyophilizer platform for fresh products, in Gaiman.

This Program focuses on providing solutions for Fruit and Vegetable Sector in the Province of Chubut and proposes to strengthen the weaknesses identified in the previous diagnosis through these measures: 1- Productive Chain Improvement, 2- Advancement of Trade Network and 3- Modernization of the Trading System and Logistics. The improvements of the logistic services include contribute with a better transportation and storage besides installations keeping the cold chain for export, both by land and by air. The main purpose is to analyze the last one of the three components pointed out which seeks to improve the supply and wholesale

transaction, proposes to build an Agrifood Platform (see annex 1 and 2) with infrastructure, services and adequate equipment.

In addition, it proposes to build an International Logistics Transfer Center, located at the Airport of Trelew, with logistical support services. Currently the exports of those perishable products are exported by Buenos Aires International Airport but the transaction costs are high due to distance, storage and administrative costs; thus one of the purposes of this Program is to promote and expand export of fine fruits from the origin (Patagonia) in order to decrease those costs.

Project Actions

To define this initiative and its execution there are activities that cannot be delegated to the private sector due to high strategic interest of the government. One example is to provide food security to the population, by promoting market with the implementation and control of food safety and quality standards, among others. This initiative requires actions to promote productive diversification that also must be accompanied by an agribusiness development linked to the supply chain of fruits and vegetables. These measures are also important, to add value to natural resources underlying in the territories, and gain share in the domestic and regional market.

According to the conceptual frame previously established, the strategy of horticultural and fruit production development in the province aims to integrate supply chain, supported by public investment as an element of strengthening and management to generate genuine wealth. Furthermore, it requires the collaboration of public and private stakeholders in trade policy for the global economy and the efficient functioning of domestic markets, although sometimes the interests of productive and commercial actors not always match with those policies.

The provincial government involvement as an investor is only justified by the uncertainty of the private sector to invest in productive chains that are not fully developed and aims to minimize risks and improve competitiveness. It is also government exclusive liability execute activities in order to ensure food safety

The chances of performing the transformations pointed out require a maturation period of small farmers with less economic resources and also needs an active participation and support of the government. Reaching a competitive offer of products in both quality and quantity, not only in the domestic market but also international, depends, particularly in Chubut, on integration of trade system for fruit and vegetables, through the creation of an Agrifood wholesaler Platform. This platform must to strengthen and articulate the whole chain of fruits and vegetables, by developing oriented quality and safety strategies, supporting primary production and generation

of trading strategies based on the development of logistics and use of information systems. All of this is possible if there is an adequate basic infrastructure and highly qualified human resources that promote the full development of the chain as a whole.

The commercial strategy of the Program is based on the establishment of a public service, reliable, efficient and dynamic, enabling producers and entrepreneurs to respond with their production to the demands of consumers. Besides the program has to supporting ventures that increase investment to levels that enable the sustained expansion of productive activities and trade, even encouraging the contribution of capital, technology and management skills.

The role of government is to promote and facilitate the improvement and redesign of the supply chain to increase product competitiveness. So the government's actions would help strengthen the operational capacity providing: assistance, technical training and business counseling and also seeking to reconcile two dynamics that must be synergistic: the need of providers of increasing their competitiveness and improving consumer's life quality.

Due to the absence of a Marketplace and in order to ensure transparency in transactions and price formation, by the concurrence of supply and demand in a single field, in the last two years, from October to May, it has been operating a Fair Horticultural that was held in Trelew. This event was taking place in an area of 640 m² with 30 exhibitors with stands of 17.5 m² each (5 x 3.5 m²) and a weekly sale. Despite that the Fair was successful, infrastructure was insufficient and food safety could not be guaranteed.

Due to the fruit sector and particularly cherries is export oriented in a 50% of its production, it is better organized than horticulture. The commercialization of cherries is concentrated in packinghouses, where the classification, packaging and sales are made. Although selling arrangements differ according to the agreements reached among producers and buyers.

In total, in the VIRCH region, there are 7 Packing Platforms of cherry that only work 45 consecutive days in a year. Therefore, commercialization is very informal, since the fruit is sold on consignment which is a disadvantage because generally buyers do not respect prices previously agreed. Closed contracts with clear and safe commercial sales practices are very rare.

Due to the inefficiency in logistics articulation and the informal business process the final price paid to producers represents 25% of the price obtained in the target market (using air cargo) and 40% when fruit is sent by sea. An additional restriction for export of cherries from Chubut is given by the impossibility of air cargo from Trelew Airport, since this does not have

the necessary infrastructure for such operations nor has staff capable to carry out suitable inspections, causing material injury by having to move fruit to Ezeiza Airport to proceed to export (approx. 1900 kms).

To overcome the situation described is needed a transformation of wholesale system in the province, for what it is advisable to building a AgriFood platform as Development Center and providing a place for purchases wholesalers from other markets and where marketers and processors interact with each other focusing on the distribution and promotion of consumption by adding quality, safety and traceability.

On these days (December 2014) the program is in execution by 60%, the progress of the construction of Marketplace has been possible with an economic contribution of 58% from Chubut government and 42% from the IDB considering that the final investment is \$ 77,861,497.

The direct beneficiaries of the project are 100 horticultural producers and 30 fruit growers, occupying an area of approximately 1,000 ha and 200 ha, respectively. Furthermore, with the construction of the Platform another direct beneficiaries would be 86 operators. On the other hand, indirect beneficiaries are wholesalers and retailers receiving better quality products and better service supply. It is estimated that about 150 retailers will be source of supply of new market. Finally other related services such as transport, loading and unloading, storage, packing, advertising and financing, consisting of approximately 70 operators also will be benefited indirectly from market activities.

Conclusion

In conclusion, the Program's proposal is the construction of Agrifood Platform to correct the problems raised and in order to organize and complete the production and marketing chain, becoming a center of logistics development. This Platform will become the dynamic element, open to incorporate other activities besides fruit and vegetable, contributing to a better use of infrastructure, with consequent cost reduction.

So that it is necessary to review the criteria of "concentration" as a synonym for agglomeration and replaced by "competitiveness", without discarding the inescapable responsibility of government of induce companies to settle in the Platform, to ensure food safety, urban development and quality of life of the population.

The application of existing rules and potential new ones related to transportation and food control based on science configures a situation where the operators will prefer to operate from the platform; and thus it becomes consistent application of the rules to the general interest and to the companies with the benefits of competing fairly in a uniform and equitable framework.

A strong engagement of vendors is essential condition for the success of Platform because if their supply is not commercially attractive and competitive, will be insufficient any public coercion that seeks to concentrate operations. On the contrary if the offer is competitive, it will be easier to improve the systemic quality through sustainable and growing demands on health, environment, added value and differentiation.

The Program implementation generated benefits along all the links that compose the chain of fruit and vegetables in the province, producing a progressive increase efficiency and supply, in quantity and quality.

- ✓ Farmers and actors of private sector will benefit by expanding their knowledge and training in production and trade issues, which will result in an improvement in profits
- ✓ They will also benefit from availability of business information, encouraging decision-making and reducing transaction costs.
- ✓ Access to a safe market will also help to expand the possibilities for investing in under cover production, achieving higher efficiency, quality, and extending the production period.

Other benefits expected

- ✓ The market will generate an order in the commercialization of products.
- ✓ A significant reduction in environmental deficiencies with relocation, modernization, organization and control of trade outside urbanized areas.
- ✓ Increased transparency of operations based on business management and strengthening joint marketing activities.
- ✓ The new market structure will benefit directly to marketers and producers currently do not have a suitable place for their operations
- ✓ A more efficient marketing structure is generated with adopting new strategies associated with the safety and quality of products.
- ✓ Local consumers will also benefit by having a choice of more fresh fruit and vegetable products, higher quality and more competitive prices.

Finally, the Program takes into consideration a partial recovery of investment costs, especially those associated with the construction and maintenance of Platform; through charging a fee to market operators who will pay a rent by use of fixed spaces, free stands and spaces designed for the installation of private services offered by the project.

About the developed work with producers has been to training, selection of machinery that will advance technologically in production, and intensive fieldwork. Also the information system produced is transmitted to the producer who is making a rapid opening to market generating profitable

production, better efficiency, and good quality and product diversity progress.

* Special thanks to Prof. Graciela Fernandez, advisor to the PROSAP for her part in the development work.

References:

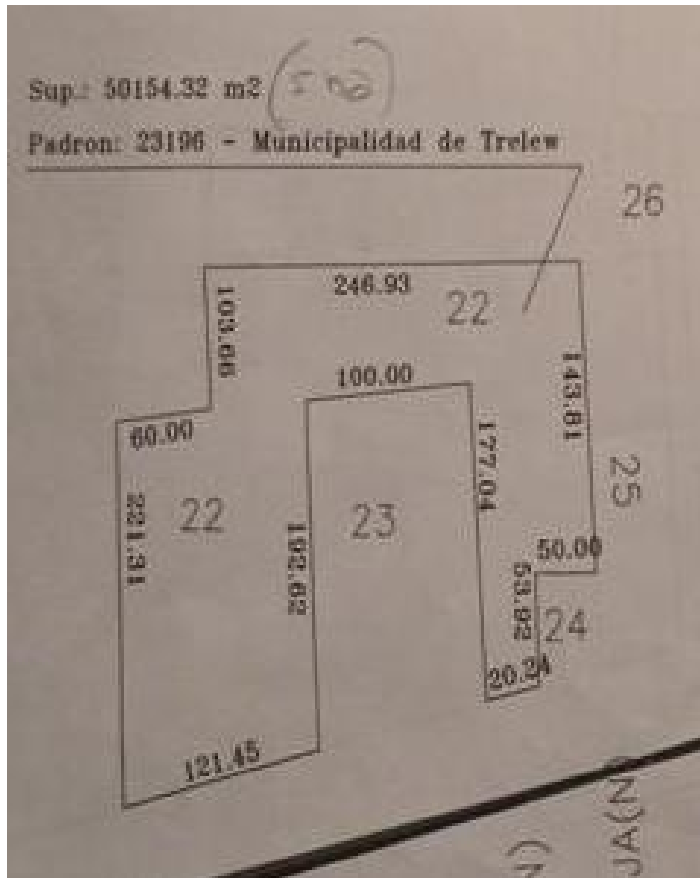
- Bado S. G; Hughes A. N. (2010). Fauna entomológica asociada a cultivos de frutas finas en el Valle Inferior del Río Chubut (Región Patagonia Sur Argentina). Bol. San. Veg. Plagas, 36:179-187. Argentina
- Benencia, R. y colaboradores. (2009). Cinturón Hortícola de la Ciudad de Buenos Aires: cambios sociales y productivos. Ed. Fundación Centro de Integración, Comunicación, Cultura y Sociedad -CICCUS. Pág. 320.
- Bouzo, C. A.; Favaro, J. C.; Pilatti, R. A.; Scaglia, E. M. (2005) Cinturón Hortícola de Santa Fe: Descripción de la zona y situación actual. Revista FAVE – Ciencias Agrarias 4 (1-2). Pág. 63-69.
- Fernández Lozano, José. (2012) La Producción de Hortalizas en Argentina. Gerencia de Calidad y Tecnología. Secretaria de Comercio Interior. Corporación del Mercado Central de Buenos Aires. Argentina.
- García Lorenzana, Úrsula. (2004) Situación y Perspectivas para la Horticultura. Región Protegida Patagónica. Presentación en Primera Jornada de Perspectivas Hortícolas, organizadas por Asociación Argentina de Economía Agraria. Viedma, Río Negro. Argentina.
- Iglesias, N. (1998) La Horticultura en la Patagonia Norte. EEA INTA- Alto Valle, Río Negro, Argentina.
- Jatib, M. Inés. (2011) Informe Técnico: Desarrollo de la Unidad Alimentaria y Fortalecimiento del Sector Fruti-hortícola de Chubut - Programa de Servicios Agrícolas Provinciales (PROSAP) Ministerio de Agricultura, Ganadería y Pesca.
- Martínez Quintana, O. (1999). La producción Hortícola en el Área del Cinturón Hortícola de Buenos Aires. Unidad de Extensión y Experimentación Adaptativa. Gran Buenos Aires. INTA. Argentina.
- Ministerio de Economía. (2010) Sector Hortícola, Primer Informe Sectorial. Dirección de Información y Análisis Sectorial, Dirección Nacional de Programación Económica Regional. 32 pp.
- Morales Ibarra, Marcel (2011) Mercado mayorista de alimentos y neoliberalismo. La Central de Abasto de la ciudad de México. Pág. 87
- Ordoñez, H.; Jatib, M I. (2002) Aportes metodológicos de estudio e intervención en los agronegocios. Una teoría, tres modelos y tres casos en Argentina. XXXIII Reunión Anual AAEA. FAUBA. Octubre 2002. Argentina.
- Szczesny, A. (2004) Producción Hortícola Regional. Oficina de Información Técnica Mar del Plata, Grupo Operativo de Trabajo Sudeste, INTA.

Annex 1 – Agro-food Platform Located on Route 25, with the surface estate of approximately 6 ha. The draft was developed in this property, based on the dimensional requirements for the main business and complementary, considering the vehicular connectivity to the village and areas of influence. It is an area with good accessibility depending on the route of rapid communication and the possibility of secondary accesses.



Annex 2 - Unit Operational Capability (fruit and vegetable marketing industry)

Based on the data obtained and the particular situation of Trelew, an estimated average consumption 200 kg per capita for a population served encompassing the town of Trelew and its neighbors within a radius of 60 Km, plus a portion of the population Comodoro Rivadavia, Santa Cruz and Tierra del Fuego, and area of influence.



IDENTIFICATION OF PASSIVE STRATEGIES FOR SUSTAINABLE CONSTRUCTION, ON VERNACULAR ARCHITECTURE OF ECUADOR.

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Abstract

The main goal of the article is to share the preliminary results of the research project “Architecture and Building Ecuador Involved in the work of the Sustainable Construction” in Strategies for Energy efficiency. In this stage it was identified the sustainable criteria of vernacular architecture in Ecuador, from the specific analysis of homes located south of the country, in the provinces of Azuay and Cañar, with temperatures of 6-20° C, which in these latitudes are considered temperate to cold. The research selected houses with traditional construction systems, such as adobe rammed earth, tapial and mixed systems, as these are the ones that represent the traditional architecture of the study area. Subsequently it was performed a critical analysis to identify the passive strategies used to face the environmental conditions, such as: location, sunlight and ventilation, which improve the thermal and light quality inside homes. In conclusion, the article aims put into consideration the advances in the identification of the vernacular architecture characteristic even when performed without specific knowledge of sustainability has been made comfortable thermal and lighting spaces, with passive strategies.

Keywords: Vernacular architecture, sustainable development, comfort

Introduction.

This article analysis vernacular architecture of Azuay and Cañar, regions of the Andean highlands of Ecuador (Figure 1: Map of the study area) in its typological aspects -a territorial scale and scale architecturally,

⁶⁷ Participants in this article are researchers ECOINVOLUCRATE IN 5Rs program of the National Secretary of Higher Education, Science and Technology and Innovation through the Prometheus Project, held at the Faculty of Architecture of the University of Cuenca, Ecuador.

constructive systems –it studied those materials, elements and procedures construction- and passive strategies present.

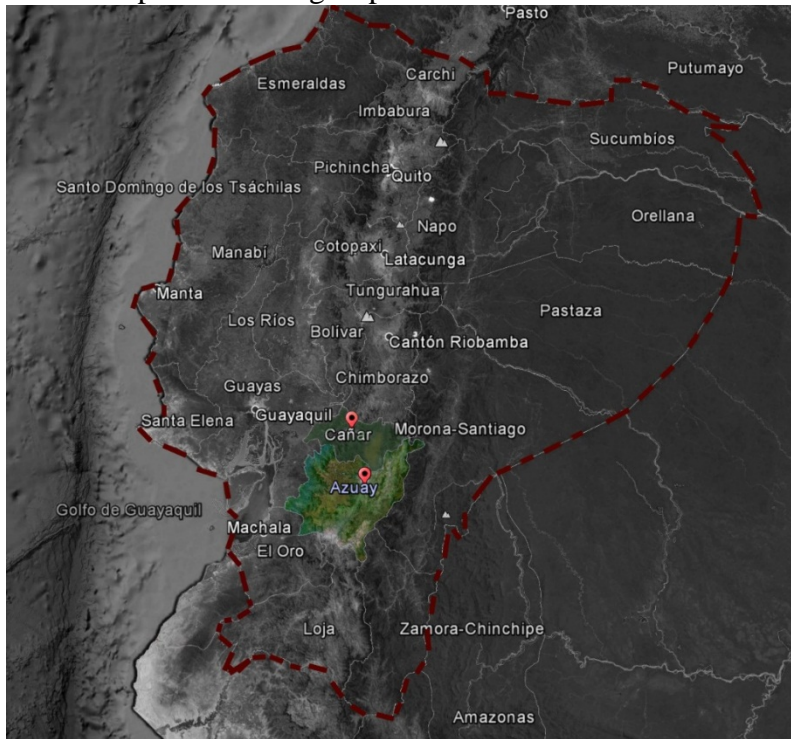


Figure 1: Map of the study area.

The view of the passive strategies is a sustainability perspective in the study of this architecture. It studies methods of analysis and energy recovery systems that have ensured the refurbishment of the interior spaces of vernacular architecture in response to climatic conditions of the territory in which it is located.

That architecture and construction system that the user performs to shape their habitat, not responding to styles, does not represent eras, no need architects / designers / builders, users are those who give them shape, is the vernacular architecture.

Some authors agree that vernacular architecture is a social and cultural system of human-environment relationship in a way that reflects the ways of living. Hence, some attribute the prominence to materials and environment "homes, attached to the soil, climate and landscape, shaped by these factors, in immediate dependence of the medium, perfectly adapted to it, being true geographical precipitates, resulting a transformation, where the soil provides the raw material and the man transforming activity "(Torres Balbás, 1934). Where the recipient is involved in major or minor scale, materials and construction systems created by man and for man, in short

vernacular architecture is the application of modernist principle "form follows function", where solutions are a rationalist thought out decoration.

Vernacular architecture is the architecture built by the community, responds to social and environmental requirements, using local building materials, achieving optimal results for energy efficiency. In Ecuador, there are countless examples of vernacular architecture that respond to climatic, geographic and cultural diversity that characterizes Ecuador.

Justification

Industrialization starts the depopulation of rural areas, the trades are lost, materials and traditional construction techniques transform disappear, destroying the unique relationship between man and its territory.

Sustainability concept determines the importance of a holistic development without affecting the resources, so that future generations will inherit it. In this framework, researchers seek alternatives to develop sustainable architecture.

Linked to the natural landscape and its resources, vernacular architecture creates a sustainable relationship between the user and the environment, territorial landscapes that cause the vernacular landscape.

In recent years, the initial purpose of architecture has joined the habitability. Since this is a quality characteristic of architectural and critical to the assessment of the architecture space. Vernacular architecture, it is the best example of adaptability to the environment through the creation of an enabling environment for human activities, in any weather conditions.

The concept of sustainable development establishes that it should meet the needs of the present without compromising future generations to meet their own needs. The analysis of examples of vernacular architecture finds the foundation, shape of human adaptation to extreme climates, throughout its habitat, the basis of the architecture and its adaptation to contemporary architecture is applied sustainability.

Vernacular architecture, source of knowledge for sustainability

In the context of sustainable development, vernacular architecture is gaining momentum, considering an example of adaptation to the environment. In environmental terms, vernacular architecture considered an example of sustainability, from its location, orientation and architectural form, allowing lighting, sunlight and ventilation, and with local building materials. Adopt solutions that regulate temperature with passive strategies, with the type and thickness of the walls, decks, etc., with minimal energy expenditure and economic cost for the use of materials that do not require transported and have little or no processing for the construction, so the vernacular is a lesson of good practice.

Characteristics that have allowed vernacular architecture has remained over the years. The importance given to the vernacular architecture is the need to identify and implement in existing buildings passive strategies that characterizes vernacular architecture being that for a sustainable architecture in the region, with vernacular architecture has the answer.

What makes it different from other vernacular architecture is that the solutions are examples of adaptation to the environment. While the environment is crucial in the characteristics of a settlement, Rapoport (1972) mentions that sociocultural factors are those that form of vernacular architecture is determined not only the result of the environmental aspects, rather it is determined by climate and building systems.

Hence, that determine the vernacular building, the environmental aspects, rainfall, temperature, relative humidity and others. However, so are the materials used in construction, with the benefit at the end of its useful life integrated back to nature. Generating over time constructive solutions that have contributed to the care of natural resources and offer a pragmatic and simple solution.

Through centuries of practice in the construction of vernacular architecture, has enhanced its adaptability to the environment using passive systems.

State of art

Vernacular Architecture and Environment Adaptation

The vernacular architecture of Azuay and Cañar, has a characteristic type of the Andean mountain architecture. In this saw geographical, climatic and geomorphological features, coupled with cultural and historical socioeconomic condition the vernacular architecture we been built here given. This relationship affects, at one level, the constructive aspects. In which construction techniques have a strong traditional character, maximizing the potential of the place and with optimum economy of means. In rural areas of the provinces of Azuay and Cañar, the predominant materials are rammed earth, adobe and adobe, adobe and still use that characterizes a greater extent, the architecture of the case studies. However the first buildings were made with stone circular plan, combining the characteristics of the environment and cultural aspects of the user of this architecture has given constructive, formal and functional traditions⁶⁸.

The climate is mountainous, with a pronounced continental character. Winters are cold and long. The temperature ranges between 6° C and 20° C.

⁶⁸ «El estudio del medio natural y del medio humano es fundamental, ya que «la casa popular [...] lleva impresa la marca del medio geográfico y del factor humano: no depende de la herencia o sólo del medio, sino de ambos a la vez» (Torres Balbás, Leopoldo. «La vivienda popular en España», p. 148).

Rainfall is irregular, occurring mostly in the months of the year. The altitude 3160m to 2566m; latitude: 2° 53' 12" South; longitude 79° 09' West. Prevailing winds are running SW to NE.

The investigation aim

The research aims to review the vernacular architecture of the Andean highlands of Ecuador, from the perspective of the inherent passive strategies to traditional construction, thus defined these objectives:

- Understand and analyze the physical environment that has developed vernacular architecture Andean Sierra of Ecuador based on literature references and fieldwork.
- Analyze the construction systems and characterize them in terms of building materials, architectural elements and construction techniques.
- Understand the mechanisms of energy use of the vernacular architecture of the study area, by analyzing their typological and constructive aspects.

Methodology

The research method combines the work of the field office. Cabinet papers comprise the documentation prior research, involving the collection and literature review and study of traditional building techniques, as well as documentation and analysis of the study area both geographically and natural as historical and socioeconomic status⁶⁹.

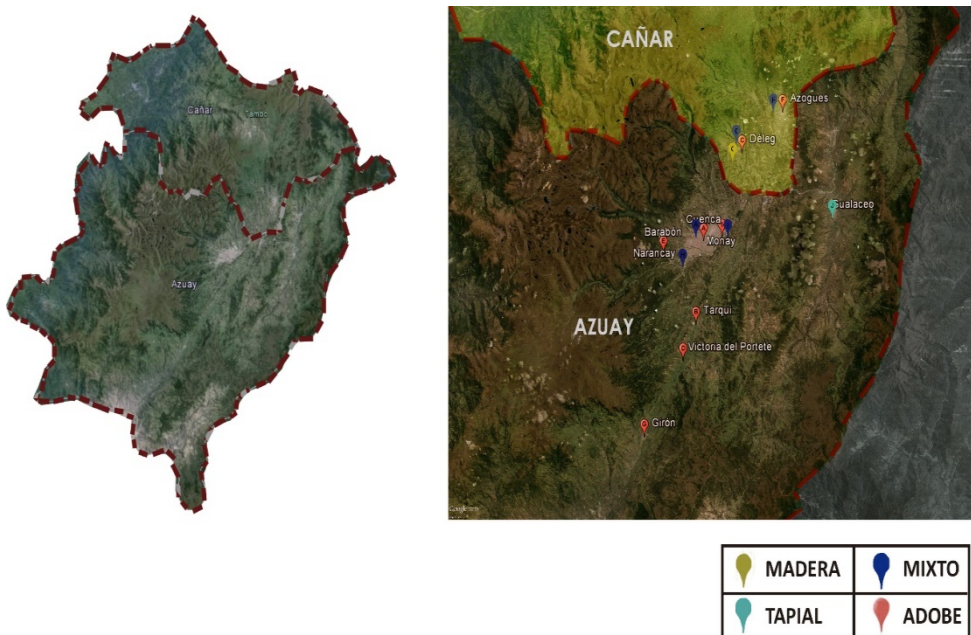


Figure 2: Location of the case studies.

⁶⁹ The investigation began in 2014, when the research project PROMETHEUS-DIUC of ECOINVOLUCRATE IN 5Rs program starts.

For the identification of case studies in class Construction 6 8th cycle race of architecture and urbanism in the period March to September 2014, the classes of "Vernacular Construction" defined parameters vernacular architecture with reference students performed the data collection. Taking aim to gather information, to value the architectural features, local construction systems, while reflecting on the pathologies presented. Adobe, rammed earth, tapial, wood and mixed: of which references typologies and building systems were taken: these academic papers case studies (Figure 2. Location of the case studies) were chosen.

Selection parameters

With reference fieldwork and documentation collection, plans and surveys, analysis and graphical interpretation of the constructive systems, supported by graphs and documentaries interpretations performed.

The climatic zones in which the case studies are located and how each building system responds in relation to thermal, lighting and ventilation behavior observed.

Finally, I defined the typological operation and construction systems analysis to understand the use and employment of passive strategies as a means of energy use in elements of vernacular architecture performed.

Results

For the analysis the information was structured into three types of records for each case in which the data of building systems, location, type of building, number of floors, number of inhabitants, area, foundation, structure, roof, walls, pathologies, waste treatment, environment, heating, air conditioning, among others.

The first is a table with the basic data structured from the analysis of the construction system of each case study, besides identifying the strategy that the construction system used to deal with environmental conditions pathologies present, served to the domain of case studies (Figure 3).

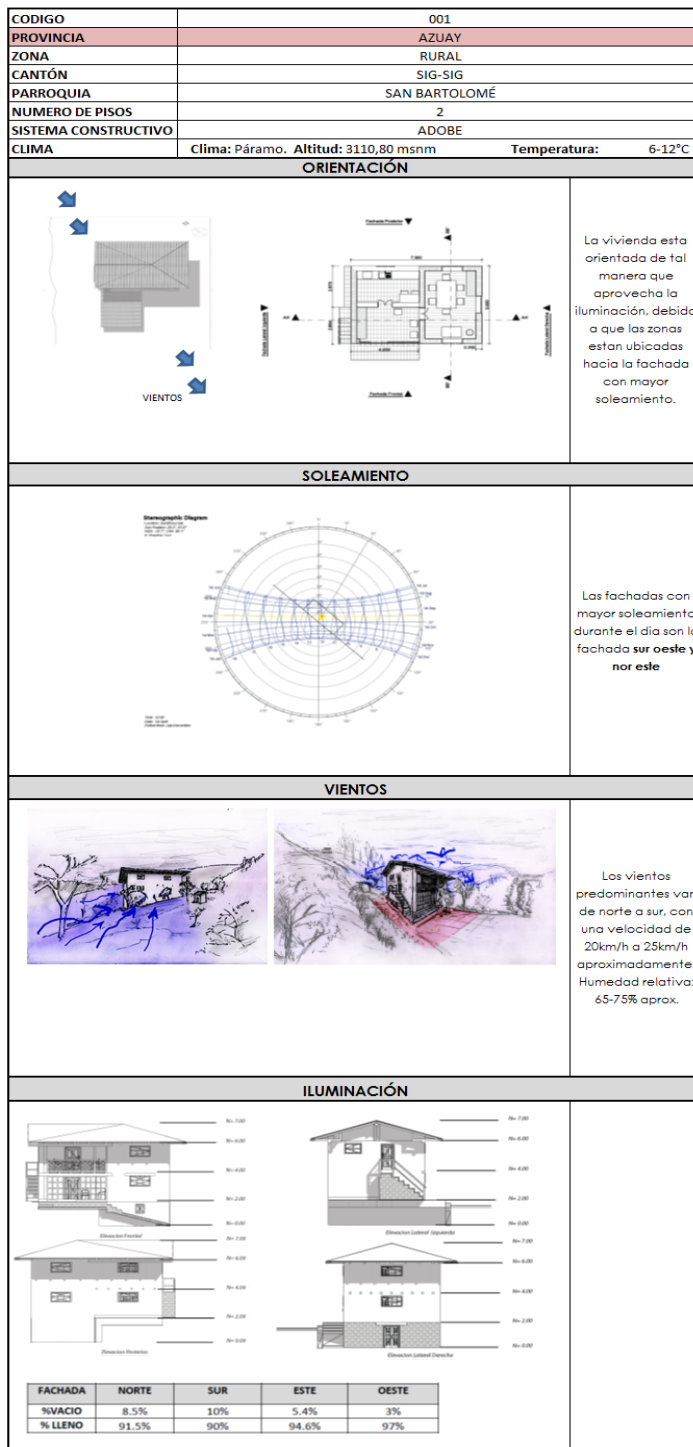


Figure 4. Analysis of the case studies.

Finally, a record in which passive strategies used for each case analyzed, considering the climate in which they are located, was organized (Figure 5).

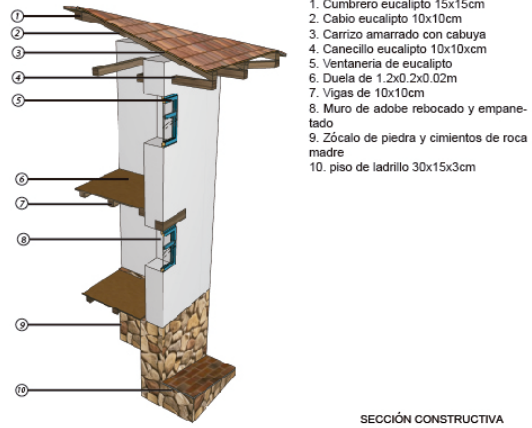
Piso Clima Páramo (Adobe)



La cimentación se construye con base en vigas corridas en roca y material de relleno conformando un entramado de vigas bajo los muros principales de la edificación. Los Sobrecimientos se construyen con ladrillo cocido sentado con cal y canto o barro con fragmentos de roca equivalentes a los de la cimentación.

Los muros pueden tener distintos aparejos pero el mortero de pega debe tener y contener una dosificación de áridos y paja similar sino la misma de los ladrillos de adobe. De ser necesario se realiza un recubrimiento para las paredes normalmente de cal, talpuja y agua.

SISTEMA CONSTRUCTIVO ORGÁNICO ADOBE* Accessed November 11, 2014. https://www.zooodenku.edu/755674/SISTEMA_CONSTRUCTIVO_ORGÁNICO_ADOBE



Piso clima Adobe (Adobe)

ESTRATEGIA

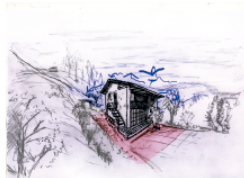
- Las ventanas y puertas de madera preservan el calor y permiten que al interior del edificio se conserve el calor necesario para el clima de páramo.
- La paja en la mezcla de los muros evita las fisuras y hace una masa mas compacta.



VENTAJAS

- Disponibilidad en grandes volúmenes de tierra para adobe en la mayores regiones
- Normal mente tiene bajo costo o ningún costo
- Sencilla trabajabilidad, no requiere de equipo especial
- Resistente al fuego Comportamiento favorable en términos climáticos en la mayoría de regionales debido a su alta capacidad térmica, mantiene el confort dentro del ambiente.
- Bajos insumos de energía en procedimiento y manejo, no crea demanda para leña y no causa contaminación.
- No hay desperdicios ya que se puede reutilizar y reciclar la tierra usada de adobe

VIENTOS



SOLEAMIENTO



DIAGRAMA DE ESTRATEGIAS CLIMÁTICAS

Figure 5. Passive Strategies vernacular architecture of the Andean highlands of Ecuador.

The theoretical basis to be had in the program ECOINVOLUCRATE IN 5Rs through the research project "Architecture and construction in Ecuador involved was used for the determination of sustainability criteria in the vernacular architecture through case studies, in the work of sustainable construction".

The vernacular architecture of the Andean highlands of Ecuador

Due to geographical, climatic and cultural diversity of around 283,561 square kilometers that make up the Ecuadorian mainland, with a variety of vernacular architectural expressions.

Currently in Ecuador, there are still examples of vernacular architecture mainly in rural areas, in places geographically isolated territories belonging to the peoples. In the examples studied the architecture of Azuay and Cañar, present the architecture of the mountains, Andean. However, other cases are not included in this study and are equally significant.

The vernacular architecture of the Andean highlands of Ecuador answered settlements that have features in common: a series of cultural and environmental values and the close relationship and respect for the area in which they seated. On the other hand, the abandonment of settlements by emigration, has caused a fragmentation of the social structure and the consequent gradual loss of ancestral knowledge construction with a strong respect for the environment.

The study of these cases, in turn, aims to raise the architect in training and practice, the importance of a design process that responds adequately to the demands of the environment. Aims to bring the knowledge of the application and use of passive strategies for low energy architecture, looking for that from the reinterpretation of the elements of the local vernacular architecture, the Andean Sierra, proposals for sustainable contemporary architecture is achieved.

Conclusion

Vernacular architecture has managed to adapt to the environment in which the user is located, all with minimal or no energy consumption required for welfare.

Fill the gap of lack of knowledge of the value they have passive strategies Ecuadorian vernacular architecture is not easy, however, jogging knowledge from training, is a strategy for future sustainable architecture.

Similarly required educate both the authorities and local communities, about the close relationship between vernacular architecture and sustainable development. Enhancing the vernacular architecture is not only concerned with the immediate environment, but with the response of this architecture the environment and how affects the livelihoods of

communities living. Vernacular architecture has a mass of knowledge, especially in isolated contexts of Ecuador, with high rates of poverty, where settlements represent a real lesson of sustainable habitat, compared to current architectural solutions. The ECOINVOLUCRATE IN 5Rs, and this article as an integral part of the research project, a program intended to contribute to the formation of such awareness through education and awareness on environmental improvement of Ecuador.

Acknowledgements

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References:

- Evans, J. M. y Schiller S. (2013). "Promoción de Eficiencia Energética y Uso de Energía.
- Fernández Alba, A. (1990). "Los documentos arquitectónicos populares como monumentos históricos, o el intento de recuperación de la memoria de los márgenes". Actas de las Jornadas Arquitectura popular en España, pp. 21-31, C.S.I.C, Madrid, España. ISBN: 84-00-07052-6.
- Gil J. (2011). "Arquitectura vernácula de la Sierra de Gredos y el Valle del Alto Tormes (Ávila): análisis tipológico, fundamentos constructivos y funcionamiento bioclimático". Universidad Politécnica de Madrid
- ICOMOS. (1999). "Carta del patrimonio Vernáculo construido". México.
- Jorquera, N. (2013). "El patrimonio vernacular, fuente de saberes tecnológicos y de sostenibilidad". Universidad de Chile.
- Neila J, (2004). "Arquitectura bioclimática en un entorno sostenible". Madrid: Munilla- Lería.
- Neila J, (2002). "El clima y los invariantes bioclimáticas en la arquitectura popular. Los climas de latitudes altas y clima de montaña: los climas fríos". Madrid: Instituto Juan de Herrera, Escuela Técnica Superior de Arquitectura de Madrid.
- Rapoport A. (1972). "Vivienda Y Cultura" col. Arquitectura y Crítica. Edit. G.G. Barcelona.
- Rudofsky, B., (1973). "Arquitectura sin arquitectos: breve introducción a la arquitectura sin genealogía". Eudeba, Buenos Aires.
- Ruskin, J. ed (1989). "Las siete lámparas de la arquitectura". Colegio Oficial de Aparejadores y Arquitectos Técnicos de Murcia, España. 259 p.

Tillería J. (2010). “La arquitectura sin arquitectos, algunas reflexiones sobre arquitectura vernácula”. Revista AUS (Valdivia) no. 8, ISSN 0718-7262 versión on-line p. 12-15, (consultada el 2 febrero 2015) DOI:10.4206/aus.2010.n8-04

Torres Balbás, L. (1934). “La vivienda popular en España. En Folklore y Costumbres de España, Tomo III”, pp. 137-502. Editorial Alberto Martín, Barcelona.

Torres G. (2000). “Arquitectura vernácula, fundamento en la enseñanza de sustentabilidad”.

JAZZ IN TOTALITARIAN SYSTEMS (NAZI-GERMANY AND FORMER USSR): THE LIFE OF THE TRUMPET PLAYER EDDIE ROSNER

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Abstract

This cultural-political investigation about German and Russian jazz history before, during and after World War II is showing the life of the trumpet player Eddie Rosner, born 1910 in Berlin to a Polish-Jewish family. 1930 to 1933 member of the then famous German jazzband, Weintraubs Syncopators“, he tested 1933 in the United States the emigration possibilities. Finally he moved to Warsaw where he fled 1939 to the Russian-occupied city of Lviv (today Ukraine). After an engagement in Minsk he was appointed to lead the best-paid jazz band in the USSR. He played for Stalin in Sochi, toured the whole Soviet Union and recorded a number of titles. During an attempt to return to Berlin without visa 1946 he was arrested and sent without trial into labour camps in Sibiria. After his release 1955 he settled in Moscow forming a large symphonic jazz orchestra. He was allowed to leave Moscow eventually in 1973 but all treaties for recordings were cancelled, his fortune was confiscated, his name extinguished. Before his death 1976 he had to make a living on a small pension in Berlin. His life shows how is working “political protection” in totalitarian systems. To make a research with serious results about him is not easy as source materials are spread mainly in Russia, Poland and Germany and have to be collected there before investigation and evaluation.

Keywords: German and Russian Jazz History, Eddie Rosner

Material and methods

Human sciences (humanities), history

Historical methods of research with archive material and literature (collection, investigation, evaluation)

Objectives

Cultural-political investigation in contemporary history and jazz history in Germany and former USSR before, during and after World War II by means of the life and career of a jazz musician

Aim of this cultural-political investigation about a chapter in German jazz history before, during and after World War II is to show by means of an individual destiny the life of one of the best jazz trumpet players of his time, Eddie (Adi) Rosner. His life is an example how is working “political protection” in totalitarian systems. It is necessary to say that this research project is a “work in progress”. The 2010 published biography about the so far little known life of Eddie Rosner, written by an historian for East Europe Gertrude Pickhan and the music journalist Maximilian Preisler entitled “Von Hitler vertrieben, von Stalin verfolgt. Der Jazzmusiker Eddie Rosner” was very helpful for this investigation. The same applies to the documentation video from 1999 “Eddie (Adi) Rosner. The jazzman from the Gulag” under the direction of Pierre-Henri Salfati and Natalia Sazonova.⁷⁰

However, intention of the project is it moreover to throw light on the contemporary, political and cultural-historical background, to focus on historical-political connections and the development and role of jazz in totalitarian systems during the East-West-conflict. To make a research with serious results is not easy as source materials are spread in Russia, Poland and Germany and have to be collected there before investigation, evaluation and interpretation. Recently I could get access in archives in Berlin (Germany) to some documents.

Therefore this paper for the moment is showing the life of Eddie Rosner, which has after Pickhan and Preisler “paradigmatic importance for the 20th century”⁷¹ with focal points on the role of jazz under the Nazi-regime and mainly in the Stalin era.

Adolf Rosner, to give him his proper name, was born in Berlin to Polish-Jewish parents in 1910. He had violin lessons from the age of six and later enrolled at the Berlin conservatory to study violin and conducting, and trumpet as a mandatory instrument. The influential banker Kommerzienrat Baron Bronner became interested in Rosner’s musical talent, sponsored the boy and paved the way to his first public appearances as a child prodigy; Rosner always regarded Baron Bronner as his uncle. On one occasion, Rosner played at a banquet for Reichspräsident Friedrich Ebert.

⁷⁰ Gertrud Pickhan a. Maximilian Preisler: Von Hitler vertrieben, von Stalin verfolgt. Der Jazzmusiker Eddie Rosner. Berlin - Brandenburg 2010. Pierre-Henri Salfati u. Natalia Sazonova: Eddie (Adi) Rosner - The Jazzman from the Gulag. Arte u.WDR-DVD. Berlin 2000.

⁷¹ Pickhan u. Preisler, Von Hitler vertrieben, p.7.

From around 1928, Rosner became interested in jazz and played with dance orchestras like Efim Schachmeister and Marek Weber in Berlin, switching on these occasions to his second instrument, the trumpet.

Rosner eventually broke off his classical studies in 1929 and became a full-time jazz and dance musician. Initially, he joined the German *Rose-Petöfy Orchestra* for an engagement in Hamburg from where he switched to the *Weintraubs Syncopators*, one of the best German professional bands for dance music in the Hot Style, which performed in Germany and Europe between 1926 and 1933. He replaced there the trumpet player Arno Olewski. The members of this band, lead by the pianist Stefan Weintraub, were all competent in several instruments and knew how to combine theatrical and clownesque elements. Moreover, they inspired listeners with their great choice of musical styles. All these corresponded with Rosner's virtuosity and entertainment talents. Preisler characterizes that, giving the gist:" He was able to swing, that was very rare for German jazz musicians."⁷²

Soon the *Weintraubs* were considered the most popular show-band in Germany and performed beside others in the famous Winter-Garden-Variété in Berlin with Josephine Baker and they had 1928 their first recording. The film-industry, too, got interested in them, as they were as attractive in their looks and acting as in their music. Between 1930 and 1933 they made twenty films. The most famous film was "The Blue Angel" after the novel of Heinrich Mann and under the direction of Joseph von Sternberg. The young Marlene Dietrich became famous with this film in the role of Lola-Lola and made an international career. The time between 1930 and 1933 was also filled with extensive tours through Germany, Switzerland, Austria, Hungary and Czechoslovakia.⁷³

In July 1932 they travelled as show band on a steamer, but after arrival they were not permitted to leave the ship. The U.S. American labour union had forbidden to unload their instruments. There is a short documentary film existing from this trip.⁷⁴

⁷² Otto Langels (rev.): Gertrud Pickhan u. Maximilian Preisler: Von Hitler vertrieben, von Stalin verfolgt. Der Jazzmusiker Eddie Rosner. Berlin - Brandenburg 2010. Unter: http://www.dradio.de/dkultur/sendungen/aus_der_juedischenwelt/1358486/ (07.05.2012).

⁷³ To *Weintraubs Syncopators* see Horst Bergmeier: The Weintraub Story. Incorporated the Ady Rosner Story (=Jazzfreund Publication. Bd. 16). Johannesburg u. Menden 1982; Albrecht Dümling: Die Weintraubs Syncopators. In: *Jazzzeitung* 9 (2006). Unter: www.jazzzeitung.de/jazz/2006/09 (8.5.2012); and Jörg Süßenbach u. Klaus Sander: Bis ans Ende der Welt. Die Geschichte der Weintraubs Syncopators. Arte u. WDR-DVD. Berlin 2000.

About the further fate of the *Weintraubs* in Australia see Albrecht Dümling: Die verschwundenen Musiker. Jüdische Flüchtlinge in Australien. Köln-Weimar-Wien 2011.

⁷⁴ Pickhan a. Preisler, Von Hitler vertrieben, p.30ff.

As non-Arians 1933 the *Weintraubs* were forbidden to perform in Germany and went on extensive tours abroad, but at the beginning of 1933 at the time when the Nationalsocialists had overtaken the power Rosner left the band to form his own band which probably included Harry Wohlfeiler (cl/as), Lothar Lampel (g/v), and Georg Schwartzstein (d), rest unidentified; Lothar Lampel was Adi's cousin. But Rosner remained connected with the *Weintraubs* until end of 1933. The Polish trumpeter Manny Fisher now substituted Rosner.⁷⁵

Having been severely beaten up by maroding S.A.hordes in a pub near Berlin's Alexanderplatz around March/April 1933, Rosner arranged for his parents and three sisters to emigrate to the United States and to South America. One sister went to Sao Paolo and the other to Buenos Aires.⁷⁶ He changed his name into "Adi", later into "Ady" and "Eddie". At that time he played in Belgium and in the Netherlands in the orchestra of the bandleader Fud Candrix and probably he met there Louis Armstrong, who dedicated him his photo with the signature, "To the white Louis Armstrong from the black Adi Rosner."⁷⁷

After first exploring the possibility of settling in Scandinavia, he settled initially in Belgium, however, had to leave this country over some visa problems in the autumn of 1935. Via Zurich and Prague, Rosner and several members of his former band finally moved to Warsaw, Poland.

In early 1936 he formed a band of seven musicians for an engagement at the Café Cyganeria in Krakow, Poland. This band followed 1937 a new formation with experimental new ways in instrumentation, which played in the Palais de Danse in Warsaw.⁷⁸

The year 1938 was filled with tours to Paris where he performed for three months at the ABC Theatre with his *Adi Rosners American Band* with stars like Maurice Chevalier, Lucienne Boyer and Marie Dubas.

During this engagement, the Rosner band recorded a number of titles for the label Columbia like „Caravan“, „Bei mir bist du schön“, „I Need You“, „On the Sentmental Side“ oder „Midnight in Harlem“. However, Rosner had to accept the fact that some of his musicians were not up to international standard and had to be replaced.

Paris was followed by engagements in Monte Carlo, Lille, Amsterdam, Scandinavia (Danmark, Sweden, Finland) and Riga in Latvia.

For the Scandinavian tour with opening in Copenhagen Rosner engaged new musicians from the Netherlands. For publicity reasons some of

⁷⁵ Ibid., p.37.

⁷⁶ According to Bergmeier, *The Weintraub Story*, p.31, Rosner is supposed to have been traveling into the USA and to have met there famous jazzmusicians like Gene Krupa.

⁷⁷ Pickhan a. Preisler, *Von Hitler vertrieben*, p.38f.

⁷⁸ Ibid., p.43.

the names were americanized: Tonny Helweg was billed as Tommy Elman, Ab Struik as Bert Streatham, Jaap Sajet as Jim Sayet, and Maurice van Kleef as Morris Vancleve.

In January 1939 Rosner returned to Poland with the intention of taking a holiday, however, he was persuaded to organise yet another band for an engagement at the Esplanade, Warsaw and made recordings there.

1939 he married the Jewish singer Ruth Kaminska (born 1920), daughter of the well-known Jewish actress Ida Kaminska, star of the Czechoslovakian-produced film "The Shop on Main Street". There is one daughter from this marriage. The bombing of Warsaw they survived in the cellar of the night club Esplanade. As the situation became more and more threatening Rosner moved with his young wife, her family and some of his musicians to the East, where the Red Army meanwhile had occupied the East territory of the Second Republic of Poland. Pickhan explains plausibly the motive Rosner's for fleeing to the East as follows: "After his experiences with the Nazi-regime it is not surprising, that he believed to have been arrived in freedom".⁷⁹

The following years were the most successful in Rosner's career. Without speaking Russian he changed from refugee to an admired star with an enthusiastic impact to an audience of masses. Via Byalistok he moved to Lviv. Within weeks most of his musicians had regrouped there and Rosner's new band played there at the Café Bagatelle.

During an engagement in Minsk he was appointed to lead the best-paid jazzband in the Soviet Union: the First Secretary of the Byelorussian Communist Party, Panteleimon Ponomarenko, promoted the establishment of a State Jazz Orchestra of the Byelorussian Republic, considering jazz as a very useful element for stabilising the communist regime.⁸⁰

Already before World War II the promotion and rejection of jazz in the USSR had a long tradition. During the twenties jazz was very promoted in the course of futurism till 1928 Maksim Gorkij published his article "About the Music of Degeneration" in the newspaper of the communist party "Pravda" which lead to a change in direction. Internal restructuring, the first Five-Years-Plan 1928/29 and the development in foreign politics in the thirties brought strong regimentations. Essentially it came to a "Sovietization" of the "American" jazz and a so-called "Red Era of Jazz" began.⁸¹ Martin Lücke is giving information on that topic in his publication

⁷⁹ Ibid., S.64f.

⁸⁰ Ibid., p.65.

⁸¹ Ibid., p.69.

“Jazz im Totalitarismus” and “Verfemt, verehrt, verboten. Jazz im Stalinismus zwischen Repression und Freiheit”.⁸²

1938 a State Orchestra of USSR was founded, followed by other republics of the Soviet Union, among them 1939 the State Jazz Orchestra of the Byelorussian Republic lead by Rosner. The Orchestra consisting of refugees from Germany and Poland performed with overwhelming success in Minsk, Leningrad and in the then famous complex of theatre Ermitaz in Moscow followed in the next years by tours through almost all Soviet Republics. Numerous recordings were made, among them the “St.Louis Blues” has to be regarded as a milestone of European Jazz. Even Stalin was among the jazz fans, so Rosner: During summer 1941 the Orchestra had to play by order of the regime in an empty hall in Sotchi at the Black Sea only for Stalin who was present but could not be seen by the musicians.⁸³ As to be seen later, the personal protection did not continue very long.

After the German invasion the Orchestra had to be recast, it became more “Russian”.⁸⁴

The Soviet-US-American War Alliance meant for jazz as a whole a positive phase in the following years, as contacts were again possible. Rosner had a privileged life among the citizens of the Soviet Union, he was living in a luxury apartment in the “Moskva” Hotel. But after the end of war 1945 campaigns were directed against the “cosmopolitan influence” in the arts in general. Although the concerts of Rosner furthermore were sold out, 1946 a defamatory article about him was published in the communist party press. After that he decided in the course of the repatriation of Polish citizens to make efforts for departure. In late 1946, when he tried to leave The Soviet Union and to return to Berlin without valid visa, he was arrested and came at first into detention pending trial. In July 1947 he was sentenced in an “extrajudicial procedure” to ten years imprisonment in a labour camp. The “personal protection” of Stalin and his special position had not prevented that. After various stations in Siberia he came into the camp of Magadan, where he lived until his release 1954. The camp’s director Alexander Deverenko made it possible for him to form and to lead a jazz orchestra, the “Jazz Orchestra of the Camp Department Nr.3”, which mainly served the entertainment of the guards, officials and their families. Music respectively

⁸² Martin Lücke: Jazz im Totalitarismus. Eine komparative Analyse des politisch motivierten Jazz während der Zeit des Nationalsozialismus und des Stalinismus. Münster 2004, and Martin Lücke: Verfemt, verehrt, verboten. Jazz im Stalinismus zwischen Repression und Freiheit. In: Osteuropa 11 (2005). Under: <http://eurozine.com/articles/2005-12-13-lucke-de> (7.5.2012).

⁸³ Pickhan a. Preisler, Von Hitler vertrieben, p.75.

⁸⁴ Ibid., p.76.

jazz was again very helpful for Rosner, who was also composing and arranging to get better conditions of life.⁸⁵

After Stalin's death in March 1953 the situation relaxed and first amnesties followed. But Rosner had to wait until spring 1954 for the abolition of the sentence by the Supreme Court of the USSR. After his rehabilitation and release he settled in Moscow and formed again a large symphonic jazz orchestra, the so-called *Estrade Orchestra* which at times had as many as 64 members. He could continue his former successes, moreover could exceed all expectations. Now, during the political thaw-period after Stalin jazz had again a growing popularity in the soviet society. 1962 Benny Goodman, who had Russian-Jewish ancestors, visited him in the course of giving thirty concerts in USSR after an official invitation.⁸⁶

In the late sixties the glory of the "Tsar of Jazz", as Rosner was called, began to fade with the emergence of new musical styles like rock and pop and went slowly out of fashion. More and more he got into difficulties with the cultural authorities. That caused him to make numerous applications to return to Berlin, but they were continuously turned down.⁸⁷

When in the course of the policy of détente 1972 the US-American President Richard Nixon visited Moscow Rosner entered the U.S. Embassy and tried to seek the President's support to obtain an approval to leave the USSR. Finally in 1973 he received the passport for departure and returned with his second wife Galina, whom he had married 1956, and two daughters to Berlin, but all treaties for recordings were cancelled, his fortune was confiscated, (he was said to be one of the richest men in the Soviet Union), his name was extinguished. After his arrival in Berlin he tried in vain to organize a new band. Before he died 1976 in Berlin on a heart attack he had to make a living on a small pension, as all his claims for compensation were rejected.⁸⁸

Involved and forced into two oppressive systems, the Nationalsocialism and the Stalinism, Rosner had to fight against both. It was a life full of triumph and tragedy as well.

He was instrumentalist, one of the best trumpet players of his time, bandleader, but also arrangeur and composer. His repertory reached from Swing music, jazz standards, Evergreens, film-music to modern jazz compositions and not at last he contributed to the development of tango in the USSR.

A German version of this paper is published in „Jazz, pouvoir et subversion de 1919 à nos jours. Jazz, Macht und Subversion von 1919 bis

⁸⁵ Ibid., p.87.

⁸⁶ Ibid., p.119f.

⁸⁷ Ibid., p.124ff.

⁸⁸ Ibid., p.125ff., and Bergmeier, The Weintraub Story, S.51 ff.

heute“, éd.Pascale Cohen-Avenel, in: Travaux Interdisciplinaires et Plurilingues, Vol.21, Bern (e.a.) 2014, p.135-142. The translation into English was made by Elisabeth Kolleritsch.

ROOTING OF DATE PALM (*PHOENIX DACTYLIFERA* L.) OFFSHOOTS BY ISOPROTHIOLANE (IPT).

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Abstract

The experiment was conducted at Alhassa Oasis (25° 22' N' latitude; 49°34' E longitude) and altitude is 179 m a.s.l , Kingdom of Saudi Arabia. Treatments included the following Isoprothiolane (IPT) concentrations incorporated at the bottom of offshoot hole: control (without IPT), 25g, 50g, 75g, 100g, 200g and 500g / offshoot hole. The offshoots weight ranged between 25 – 30 kg. The IPT concentrations of 75 and 100 g/ offshoot hole seemed to be quite optimal for improving rooting of date palm offshoots. The best rooting percentage, length of root, root fresh and dry weights were obtained under 75 and 100 g/ offshoot whole IPT concentrations. Offshoots under the control and the lowest and highest IPT treatments reflected poor rooting ability. The chlorophyll content data although looked relatively similar between treatments, a slight edge of 75 and 100 g/ offshoot hole was noticeable. This relative edge might have played a significant role in the photosynthetic ability of offshoots. The efficiency of rooting of offshoots under both concentrations might have resulted from their edged photosynthetic ability.

Keywords: Date plam, ISOPROTHIOLANE

Introduction

Date palm (*Phoenix dactylifera* L.) is the major fruit crops in Kingdom of Saudi Arabia. Its utilization is quite variable ranging from food security to ornamental and landscape purposes. Offshoots are normally used in propagation due to their ability of root regeneration (El-hamady et al. 1992; Zaid & de Wet 2002; Chao & Krueger 2007; Rahnema & Rah khodaei 2013). This ability is highly cultivar dependent with certain high quality ones difficult to root. However, with the increasing demands for date palm offshoots in recent years, farmers tendency to use offshoots of low quality has tremendously increased. Offshoots of certain high quality commercial cultivars have been always difficult to root and their survival ability is low (Al-Mana et al. 1996; Qaddoury & Amssa 2004; Afzal et al. 2011).

Isoprothiolane (diisopropyl-1, 3-dithiolan-2-ylidenemalonate, IPT) is a fungicide (12% hormone, 126 IPT) mainly used for control of rice blast. Recently, IPT has been proven to demonstrate a hormonal action in rice (Ohtsuka & Saka 1988). Improvement of development of seminal root, promotion of root formation in kidney bean (*Phaseolus vulgaris* L.) and azuki bean (*Phaseolus angularis* L.) by using IPT was also reported (Ohtsuka et al. 1990). Okawara et al. 2003 were able to dramatically enhance top and root growth of young date palm plants with application of IPT. Other hormones as well showed their substantial ability to initiate rooting of several plant species (Gasper & Hodinger 1989 ; Ismail & Egaili 1993; Qaddoury & Amssa 2004; Yamada & sawa 2013). Auxins in general, have been intensively used in adventitious root initiation of many hardwood crops (Gupta & Godara 1984; Gasper & Hodinger 1989; Shibli et al. 2000; Bhuiyan et al. 2011). Next to the obligatory presence of endo- or exogenously applied auxin (Haissig 1972), rooting initiation seems to involve the mobilization or redistribution of certain minerals. Several authors revealed that N had great effects on root initiation of cuttings with a low or medium N supply resulting in the highest rooting (Desnos 2008; Peret et al. 2009; Lima 2010). The significant role of N in root growth and development was also noticed and explained by its need for nucleic acid and protein synthesis in addition to carbohydrate metabolism. The high C/N ratio was noticed to always favor rooting of several plant species (Pearse 1943). However, other reports revealed negative correlations between N and root number and weight in cuttings of certain plant species (Kurvits & Kirkby 1980). The negative correlations have led the authors to demonstrate that N composition or source was more important in mineral uptake and carbohydrate and organic acid content of shoots during rooting. It was also found that other rooting co-factors could possibly play a partial role in root

initiation (James & Thumbon 1981; Bhuiyan et al. 2011). The cofactors may partially prevent the oxidation of the naturally occurring rooting hormone IAA by the enzyme IAA-oxidase (Bhuiyan et al. 2011). Ismail & Egaili 1993 have used 1000, 2000 and 3000 ppm concentrations of IBA to root different date palm offshoots of different cultivars and sizes. After one year, he found that 'Barnsee' and 'Ahmed Sayed' cultivars were the best to root while 'Elhora' cultivar did not produce any roots under all IBA concentrations. Normally young date palm offshoots have to withstand severe drought conditions until the root system is sufficiently developed for sustainable water absorption. The use of rooting hormones to enhance root formation, considerably shorten the period during which the offshoots may be subjected to adverse drought conditions. The purpose of this study was to stimulate and improve rooting of date palm cv. 'Khalas' offshoots by using hormonal fungicide Isoprothiolane (12% hormone, 126 IPT). 'Khalas' date palm is a major high quality commercial cultivar in Kingdom of Saudi Arabia.

Materials and Methods

Plant Materials

Experiment was conducted at Alhassa farm Al-shemia area (25° 22' N' latitude; 49°34' E longitude) and altitude is 179 m a.s.l Kingdom of Saudi Arabia. Uniform offshoots weighing between 25 – 30 kg were separated from mother trees and used for the experiment.

Ipt application

IPT, in a granule form (12% effective hormonal dose) at rates of 0 (control/ without IPT), 25, 50, 75, 100, 200 and 500 g hole⁻¹ was applied to bottom of holes and thoroughly mixed with soil before planting of ground offshoots. Proper management practices were given during offshoots growth as recommended by Al-Khateeb *et al.* 2006.

Experimental Parameters

After 12 months from planting, offshoots were dug and separated into top (shoot and leaves) and roots (solid rhizome and adventitious roots). Data were obtained for offshoot ability of rooting as indicated in the following scale:

1. *REPRESENTS BELOW 25% ROOTING OF OFFSHOOT BASAL AREA.*
2. *REPRESENTS BETWEEN 25-50% ROOTING OF OFFSHOOT BASAL AREA.*
3. Represents above 50% rooting of offshoot basal area.

Average length and fresh weight of roots in addition to offshoots survival rate were also obtained. Dry weight of roots was determined after

oven drying the samples at 80 °C to a constant weight. Offshoot leaf chlorophyll content was determined at the termination of the experiment using a Minolta Chlorophyll Meter SPAD-502. potassium K⁺ and calcium Ca²⁺ contents in roots were determined from dry powdered root tissue after extraction in HCl, using an atomic absorption spectrophotometer (905AA, GBC, Australia). Total nitrogen N was determined using an automated semi-macro Kjeldahl apparatus (4301322, Buchi, Switzerland).

Statistical Analysis

Data subjected to statistical analysis as a randomized complete block design according to Gomez and Gomez (1984). All statistical analysis was performed using the facility of computer and SAS software package (SAS, 2001). Means were separated by their standard errors and the corresponding degrees of freedom.

Results

Rooting percentage and root length of offshoots are shown in Table 1. Data on rooting ability of offshoots have reflected considerable variation between IPT treatments. Substantial rooting was observed on offshoots treated with 75 and 100 g IPT (Fig. 1). Rooting on untreated offshoots (control) and on 25 and 500 g IPT was significantly (*P* 0.05) reduced with possibility of toxicity at 500 g IPT (Table 1 and Fig. 1). Regression between index of rooting and IPT gave nonlinear correlations with very good coefficient of determination r^2 0.89 (Fig. 2). Length of offshoot roots followed almost the same rooting percentage pattern. Both 75 and 100 g IPT applications seemed to be quite optimal and promotive for maximum and efficient rooting of ground offshoots. An offshoot rooting under both applications was approximately 8 to 16 folds better than rooting ability of offshoots under control, 25 and 500 g applications. Root fresh and dry weights were relatively higher in offshoots treated with 75 and 100 g IPT (Table 2). Both root fresh and dry weights were drastically reduced on untreated (control) and 25 and 500 g treated offshoots. This is not surprising, since the rooting ability of offshoots under those treatments was shown to be low (Table 1). Leaf chlorophyll content and root mineral content (N, K⁺, Ca²⁺) were significantly (*P* 0.05) higher under offshoots treated with 75 and 100 g IPT (Table 3 and Table 4).

Discussion

This study has quantified in details the rooting behavior of ground offshoots of date palm cv. 'Khalas' in response to IPT. Rooting ability of offshoots have reflected considerable variation between IPT treatments with substantial rooting observed on offshoots treated with 75 and 100 g IPT. The

relationship between IPT and index of rooting indicate good coefficient of determination r^2 0.89 (Fig 2) . This relationship showed that 100 g IPT/ offshoot hole as the ideal concentration for optimum rooting in date palm. The efficiency of rooting under all treatments could probably be explained by the data on offshoot leaf chlorophyll content and root mineral content. It is quite reasonable to postulate that leaves with higher chlorophyll content had much better photosynthetic ability to support root growth and development. Furthermore, the provision of optimum photosynthates to offshoots might have stimulated the roots of the same offshoots to accumulate higher N, K^+ and Ca^{2+} contents which is true in the present study. Regression between N and IPT gave nonlinear invers correlations with good coefficient of determination r^2 0.75 showing lower N content with increasing IPT concentration (Fig. 3). This could be due to the fact that IPT had no significant effect on root N absorption at high concentrations. On the other hand regression between K^+ and Ca^{+2} and IPT gave nonlinear correlations but with relatively very good coefficient of determination r^2 0.83 and 0.86, respectively (Fig. 3). These relationships indicate that 100 g IPT/ offshoot hole as the ideal concentration for K^+ and Ca^{+2} absorption. This indicates that IPT dose not only promote root formation but it may also promote root functioning effectively. Higher K^+ concentration under 75 and 100 g IPT may effectively enhance gas exchange capacity by controlling stomatal conductance (Tais & Zeiger 2010). On the other hand higher Ca^{+2} concentration under 75 and 100 g IPT may effectively contribute well in membrane permeability (Tais & Zeiger 2010). The stimulation and development of roots in plants have been related to hormonal (Qaddoury & Amssa 2004; Afzal *et al.* 2011, Yamada & sawa, 2013), nutritional (Desnos 2008; Lima 2010) and cofactors (Fadl *et al.* 1979; Peret *et al.* 2009) mechanisms. Auxins, in particular, have been reported to exert the primary control over root formation (Gupta & Godara 1984). However, AlKhateeb 2008 have demonstrated that meristematic differentiation either to root primordium or to callus and leaf primordium is dependent on the proportion of auxin to cytokinin or to other substances that may stimulate cell division. IPT is a fungicide that has recently been known for its growth- regulatory action in rice (Ohtsuka & Saka 1988). Its application to soil has also been shown to promote initial root growth in date palm offshoots (Okawara, *et al.* 2003). In the current study, optimal levels of IPT have distinctly promoted rooting of ground offshoots. Since IPT is not known as an auxin related hormone, it can reasonably assume that its promotive action to root formation possibly reflects interactive indirect effects. Those effects might have been stimulated and favored by a positive proportion of auxins to other hormones, particularly cytokinin, or/ and by stimulating an active translocation of cofactors with photosynthates from leaves to root zone to

promote rooting (AlKhateeb 2007). In conclusion, the IPT concentrations of 75 and 100 g/ offshoot hole seem to be quite optimal for improving rooting of date palm offshoots. The chlorophyll content data supported the edge effect of 75 and 100 g IPT/ offshoot hole. This edge effect might have played a significant role in the photosynthetic ability of offshoots under those treatments. The photosynthetic ability of the offshoots under the mentioned treatments might have resulted in a relatively balanced nutrient content within the plants to support the photosynthetic ability and hence improve rooting of offshoots.

Acknowledgement

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References:

- Afzal M., Khan M.A., Pervez M.A and Ahmed R. (2011). Root induction in the aerial offshoots of date palm (*Phoenix dactylifera* L.) cultivar hillawi. *Pakistan Journal of Agricultural Science* 48, 11-17.
- Alkhateeb A.A. (2007). The effect of different carbohydrate sources and concentrations on in vitro bud and shoot formation of strawberry (*Fragaria x ananassa*). *Journal of Agricultural Science, Mansoura University* 32,591-599.
- Alkhateeb A.A. (2008). Regulation of in vitro bud formation of date palm (*Phoenix dactylifera* L.) cv. Khanezi by different carbon sources. *Bioresource Technology* 99,6550-6555.
- Alkhateeb A.A., Aljabr A.M.S., Aljabr A.M.H. (2006). Date palm in Kingdom of Saudi Arabia. The National Date Palm Research Center, Ministry of Agriculture, Kingdom of Saudi Arabia, pp. 136.
- Al-mana F. A., El-hamady M. A., Bach M. A. and Abdelrahman A. O. (1996). Improving root development on ground and aerial date palm offshoots. *Research Bulletin No: 60, King Saud University, College of Agriculture, Kingdom of Saudi Arabia*, pp. 19.
- Bhuiyan M. K. R., Hossain M. J., Rahman M. S., Rahman S. M. L. and Sattar M. A. (2011). Root initiation in Mukhikachu (*Colocasia esculenta*) as influenced by IAA and NAA. *Bangladesh Journal of Agriculture Research* 36, 487-494.
- Chao C. T. and Krueger R. R. (2007). The date palm (*Phoenix dactylifera* L.): Overview of biology, uses and cultivation. *Horticulture Science* 42,5.
- Desnos T.(2008) Root branching responses to phosphate and nitrate. *Current Opinion in Plant Biology* 11, 82–87.
- El-hamady M., Al-mana F. A. and Bacha. A. (1992). Greenhouse rooting of date palm offshoots using an inverted mist system. *Annals of Agriculture Science Ain Shams University* 37, 523-529.

- Fadl M. S., El-deem A. S. and El-mahdy M. A. (1979). Physiological and chemical factors controlling adventitious root initiation in carob (*Ceratonia siliqua*) stem cuttings. *Egyptian Journal of Horticulture* 6, 55-68.
- Gaspar T., and Hodinger M. (1989). Auxin metabolism during rooting. In adventitious root formation in cuttings. T.A. DAVIS, B.E. HAISSING and N. SANKHLA, eds. Portland, Oreg., Dioscorides Press.
- Gomez K. A. and Gomez A. A. (1984). *Statistic procedures for agricultural research*. 2nd ed., 680 pp., John Wiley and Sons Inc., New York.
- Gupta O.P. and Godara N.R. (1984). Rooting in aerial suckers of date palm. *Haryana Agriculture University Journal Research* 14,82- 84.
- Haissig B. E. (1972). Meristematic activity during adventitious root primordium development. Influences of endogenous auxin and applied gibberellic acid. *Plant Physiology* 49, 886-892.
- Ismail M. M., Alegali F. R. (1993). Effects of IBA growth hormone on root formation of young date palm offshoots. *Proceedings of the third symposium on date palm*. King Faisal University, Alhassa, Kingdom of Saudi Arabia.
- James, D. J. and Thurbon I. J. (1981). Shoot and root initiation in vitro in the apple rootstocks M 9 and the promotive effects of phloroglucinal. *Journal of Horticulture Science* 56,15- 20.
- Kurvits A. and Kirkby E. A. (1980). The growth and mineral composition of sunflower plants, *Helianthus annuus*, utilizing nitrate or ammonium-N when grown in a continuous flowing culture system. *Acta Horticulture* 98, 139-148.
- Limaa J. E., Kojimaa, S., Takahashib H. and Von Wirena N. (2010). Ammonium triggers lateral root branching in arabidopsis in an ammonium transporter 1;3- dependent manner. *The Plant Cell* 22, 3621-3633.
- Ohtsuka T., Hikawa M. and Saka H. (1990). Growth regulation action of isoprthiolane in plants. V. Interaction between RNA, protein synthesis inhibitors and isoprthiolane on adventitious root formation in stem segments of plant crops. *Japanese Journal of Crop Science* 59, 566-571.
- Ohtsuka T. and Saka H. (1988). Undestructive measurement of acid phosphates activity in the root of rice seedlings. *Japanese Journal of Crop Science* 57, 722-727.
- Okawara R., Macawi R. M., Alkhateeb S. and Ohmura T. (2003). Improvement of the initial growth of young date palm (*Phoenix dactylifera* L.) plants by the application of Isoprothiolane to soil. *Soil Science and Plant Nutrition* 49, 281-283.
- Pearse H. L. (1943). The effect of nutrition and phytohormones on the rooting of vine cuttings. *Annals of Botany*7, 123-132.
- Peret B., Larrieu A. and Bennett M.J. (2009). Lateral root emergence: A difficult birth. *Journal of experimental Botany* 60, 3637–3643.

Qaddoury A. and Amssa M. (2004). Effect of exogenous indole butyric acid on root formation activities and phenolic contents in date palm offshoots. Botanical Bulletin- Academia Sinica 45,127-131.

Rahmana A. and Rahkhodaei E. (2013). Offshoots weight and disinfection on Medjool Date palm survival rate. International Journal of Agriculture and Crop Sciences 5, 1784-1788.

SAS INSTITUTE (2001). SAS for windows, SAS Users Guide: statistics Version 8.0 e. Cary, North Carolina.

Shibli R. A. (2000). Cryopreservation of Black Iris (Irisnigricans) Somatic Embryos by Encapsulationdehydration. Cryo-Letters 21, 39-46.

Taiz L. , Zeiger E. (2010). Plant Physiology. Sinauer Associations, USA.

Yamada M. and Sawa S. (2013). The roles of peptide hormones during plant root development. Current Opinion Plant Biology 16,56-61.

Zaid A. and De Wet P.F. (2002). Date palm propagation. P 73-105. In: A.Zaid (ed). Date palm cultivation. Food and agriculture Organization Plant Production and Protection Paper No.156. Rome Italy.

Table(1): Effect of IPT on rooting percentage and root length of date palm ‘Khalas’

IPT concentration (g/ offshoot hole)	Index of rooting %	Average length of offshoot root (mm)
Control (0)	0.25± .028	267±31
25	0.35± .033	461±39
50	1.42± .19	463±55
75	2.24± .26	561±62
100	2.89± .25	633±71
200	1.67± .21	398±45
500	0.18± .016	232±33

Means ± S.E, D.F=6

Table (2): Effect of IPT on fresh and dry weight of date palm ‘Khalas’ cv. offshoots

IPT concentration (g/ offshoot hole)	Fresh weight (g)	Dry weight (g)
Control (0)	193.6± 25	36.8± 4.0
25	193.5± 24	39.7± 4.1
50	391.6± 45	48.2± 5.1
75	356.4± 31	44.8± 3.9
100	460.8±45	54.9± 5.8
200	237.4± 26	39.5± 4.4
500	145.9±19	34.5± 3.2

Means ± S.E, D.F=6

Table (3): Effect of IPT on chlorophyll content and offshoot survival of date palm 'Khalas' cv. offshoots

IPT concentration (g/ offshoot hole)	Chlorophyll content (mg/ 100cm) (SPAD value)	Survival percentage of offshoots plants/100plants
Control (0)	18.2±1.9	60±5.9
25	18.3±2.2	60±6.5
50	19.2±2.5	100±0
75	21.3±1.8	100±0
100	21.1±2.8	100±0
200	18.6±1.9	40±8
500	17.5±1.6	20±3

Means ± S.E, D.F=6

Table (4): Effect of IPT on root N, K⁺ and Ca²⁺ content of date palm 'Khalas' cv. offshoots

IPT concentration (g/ offshoot hole)	N mg/g	K ⁺ mg/g	Ca ²⁺ mg/g
Control (0)	13.7±1.21	4.6±.51	15.1±1.9
25	13.5± 1.51	4.8±.49	15.1±1.6
50	14.3±1.81	5.6±.59	16.3±1.5
75	15.9±1.98	7.6±.81	17.4±1.82
100	15.8±1.56	7.4±.79	16.9±1.9
200	14.1±1.62	6.1±.73	14.8±1.6
500	13.1±1.38	4.5±.51	14.0±1.8

Means ± S.E, D.F=6

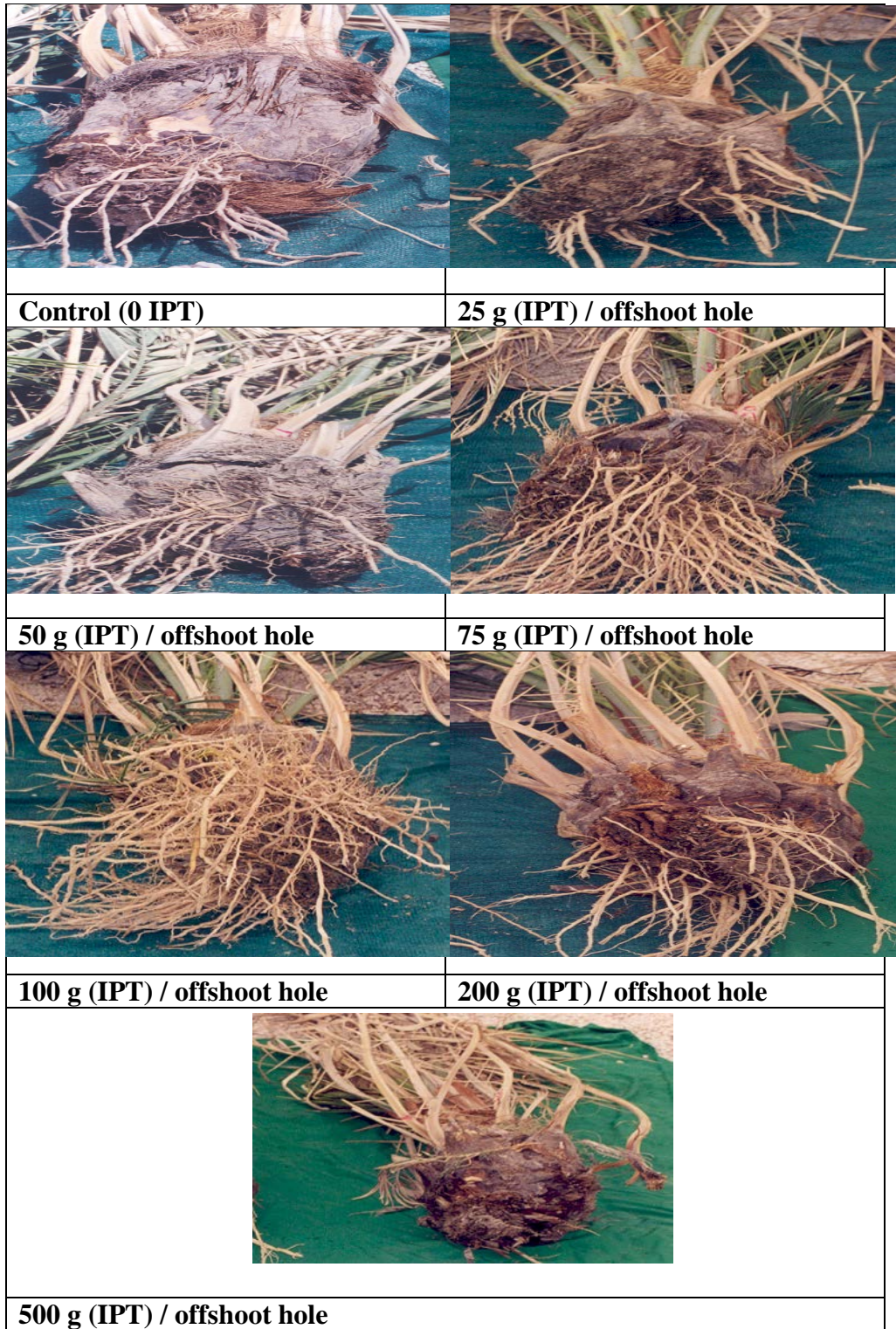


Figure1 : Effect of IPT on rooting of date palm cv. 'Khalas' offshoots.

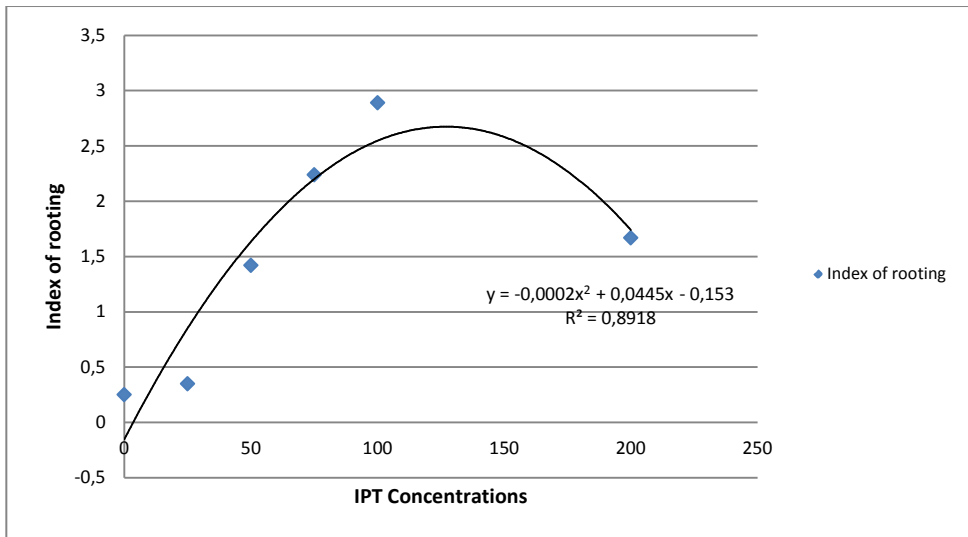


Figure 2: Relationship between Index of rooting and IPT (g/ offshoot hole).

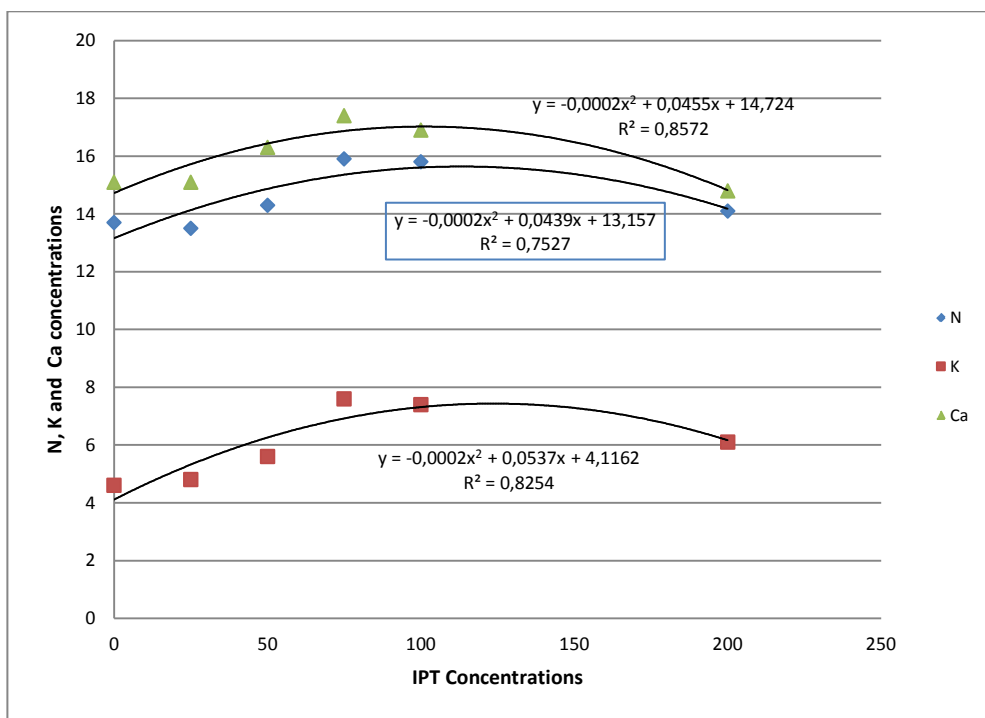


Figure 3: Relationship between root N , K and Ca concentration (mg g⁻¹) and IPT (g/ offshoot hole).

THE BARILOCHE NEUTRON PHYSICS GROUP CURRENT ACTIVITIES

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Abstract

Our group has evolved around a small accelerator-based neutron source (ABNS), the 25 million electron Volt (MeV) linear electron accelerator at the Bariloche Atomic Centre. It is dedicated to applications of neutronic methods to tackle problems of basic sciences and to technological applications. Among these, the determination of total cross section of a material as a function of neutron energy by means of transmission experiments for thermal and sub-thermal neutrons is very sensitive to the geometric arrangement and movement of the atoms, over distances ranging from the 'first-neighbour scale' up to the microstructural level or 'grain scale'. This also allowed to test theoretical models of calculated cross sections and scattering kernels. Interest has moved from pulsed neutron diffraction towards deep inelastic neutron scattering (DINS), a powerful tool for the determination of atomic momentum distribution in condensed matter and for non-destructive mass spectroscopy. In recent years non-intrusive techniques

aimed at the scanning of large cargo containers have started to be developed with this ABNS, testing the capacity and limitations to detect special nuclear material and dangerous substances in thick cargo arrangements. More recently, the use of the ever-present “bremsstrahlung” radiation has been recognized as a useful complement to instrumental neutron activation, as it permits to detect other nuclear species through high-energy photon activation. The facility is also used for graduate and undergraduate students experimental work within the frame of Instituto Balseiro Physics and Nuclear Engineering courses of study, and also MSc and PhD theses work.

Keywords: Neutron applications, pulsed neutrons

Introduction

The Neutron Physics Department at the Bariloche Atomic Centre has evolved its experimental activity, from its very beginning, around the already mentioned 25 MeV electron linear accelerator, the LINAC, which started operation in 1970. It is a travelling wave 25 MeV electron accelerator pulsed machine. Electron pulse may be extended up to 2 microseconds. This small machine reaches a maximum neutron production operating at 100 Hz and 25 microampere mean electron current. It belongs to the Argentinean Atomic Energy Commission, CNEA, and is situated in an atomic centre by the southern Patagonian Andes mountain range. In what follows, we shall briefly review the most recent interdisciplinary activities of this research group.

Total neutron cross section

Neutron transmission is a very simple technique that measures the reduction in intensity in a neutron beam after traversing a sample. The reduction in intensity depends on the energy of the incident neutron and on the nuclear cross section and microstructure of the material composing the sample. So, analysis of the transmitted neutron spectra provides information about the microscopic properties of an object. Such analysis is performed on the total cross section, an intrinsic property that does not depend on object thickness. Advances in instrumentation have provided such spectroscopic capability to neutron radiography (Lehmann, 2009).

The energy dependence of the total cross section for thermal neutrons is dictated by the structure and dynamics of the atoms composing the material. The effect of the *microscopic* ordering (between 0.1 and 100 Å) on the total cross section results in the appearance of discontinuities called Bragg edges (Fermi, 1947), which have been used to study and characterize materials since the 50's. On the other hand, the effect of the *mesoscopic* structure (between 0.1 and 100 µm) on the total cross section has received little attention. We are currently investigating the effect of such

microstructural features in the total cross section, with the aim of using neutron transmission for non-destructive characterization of nuclear materials.

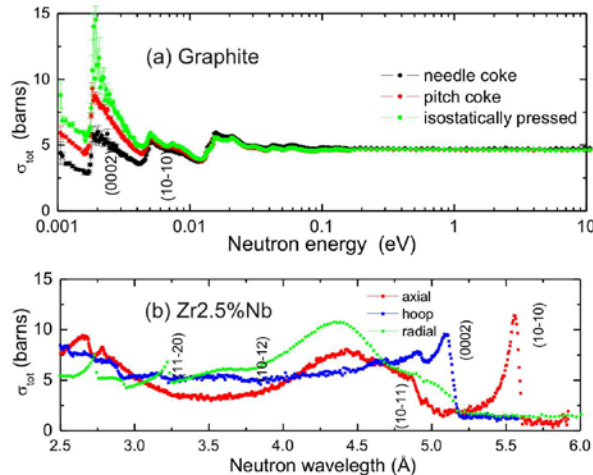


Fig.1: Upper graph shows the total cross section measured at our laboratory for nuclear-grade graphite produced by different manufacturing processes; first two Bragg edges indexed. Differences seen at neutron energies below 0.004 eV are due to different porosities. Lower graph shows the total cross section of a Zr2.5%Nb pressure tube from a CANDU power plant along the three principal directions, with Bragg edges indexed. Large differences between directions are due to crystallographic texture in the material.

Related with the examples depicted in Fig.1, for the first case a theoretical model was developed to extract the mean size of the pores from such measurements (Petriw, 2010) and for the second case, we are developing a model to measure the orientation distribution function of the crystallites from such experiments (Santisteban, 2011).

Scattering kernels

Calculations of moderators require scattering kernels that are accurate in both the energetic and angular distribution of outgoing neutrons. However, traditional neutron moderators like light and heavy water have scattering cross section libraries (Mattes,2005) in ENDF format (Chadwick, 2011) to be used in Monte Carlo and deterministic calculations that rely on water models that do not utilize the up-to-date knowledge of their structure and dynamics.

Very recently (Marquez Damian, 2013) we presented a new model to compute the scattering kernels for light and heavy water based on molecular dynamics simulations. Using the molecular dynamics program GROMACS and a flexible SPC (Single Point Charge) model (Toukan, 1985) we obtained the frequency spectra of hydrogen, deuterium and oxygen, bound in light and heavy water. With those spectra we computed the scattering laws using the

LEAPR module of NJOY (MacFarlane, 1999), which uses the incoherent approximation.

Scattering laws for D and O in D₂O are corrected using the Sköld approximation together with available partial structure factors. Using those kernels we computed double differential and integral cross sections over a wide range of neutron energies (1e-5 to 1 eV). These results represent an improvement over existing models when compared with experimental values, especially for low incident neutron energies. This is shown in Fig.2, where we can observe that our new scattering kernel is finally able to reproduce the total cross section that we measured 40 years ago (Kropff, 1974) using the (at that time new) Bariloche LINAC!

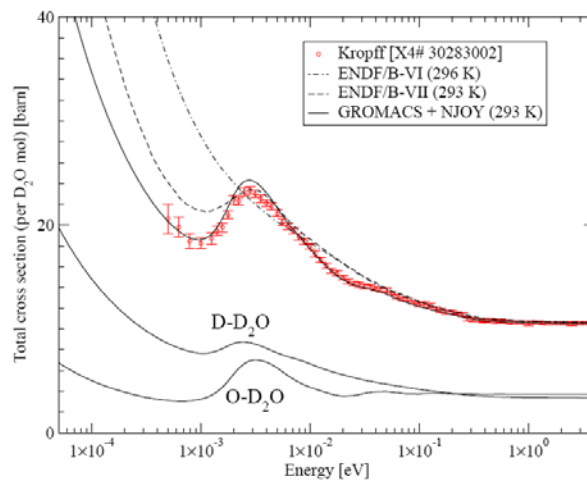


Fig.2: The total cross section of D₂O at room temperature, comparing the results from existing libraries (Mattes, 2005), our present model, and our own transmission experiment (Kropff, 1974).

Deep inelastic neutron scattering (dins)

Originally devised by Hohenberg and Platzmann in the 60's to investigate the Bose-Einstein condensation in superfluid ⁴He, Deep Inelastic Neutron Scattering (also known as Neutron Compton Scattering) developed as a customary research tool to investigate momentum distributions in Condensed Matter. In a DINS experiment scattered neutrons are detected at a given angle, and a mobile filter (with a neutron absorption resonance at a few eV energy) is placed in the path of the scattered neutrons, and alternative 'filer-out' and 'filter-in' spectra measurements are performed. The difference between these spectra as a function of the neutron time of flight is the basic magnitude determined in DINS experiments, and is related with the sought momentum distributions. Initially developed at Rutherford Appleton Laboratory, the technique proved to be applicable in our low-intensity

neutron source, especially in regard to the development of data processing methods.

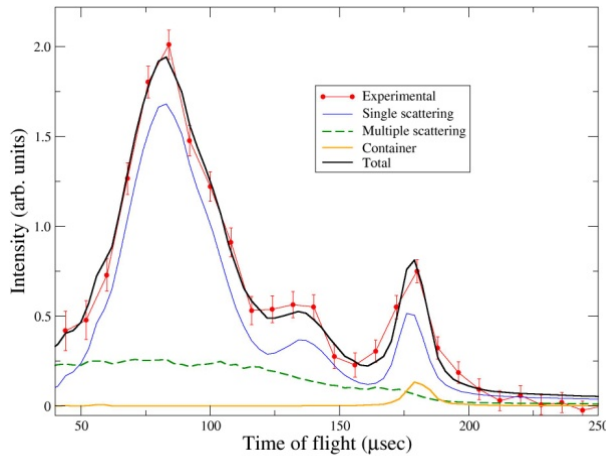


Fig.3: Measured neutron Compton profile for the light water/heavy water mixture, together with results of Monte Carlo simulations showing single, multiple and total scattering contributions to the observed spectra.

A remarkable result in the methodological aspect, was the determination of the Compton Profiles' absolute intensities in light water/heavy water mixtures, depicted in Fig.3 (Blostein, 2009), which showed no anomalies in the cross section of hydrogen at epithermal energies, which was the subject of a long scientific debate (Chatzidimitriou-Dreis mann, 1997).

At present we have two ^3He detector banks, which allow the simultaneous measurement at selectable angles. This combination aims at the study of the profiles of hydrogen and light atoms. A combination of forward and backward scattering angles, allow the separate study of the profiles of light and heavy atoms.

Cargo scanning complementary techniques

The use of slow neutrons for the purpose of investigating thick cargo arrays is viewed here as complementary to the widely tested fast neutron approach. Slow neutrons tend to diffuse into samples, with loss of time-of-flight (TOF) information, but inducing absorption reactions through higher interaction cross sections. Many related results have been presented at the AccApp2009-International Topical Meeting on Nuclear Research Applications and Utilization of Accelerators (Mayer a, 2009).

Detector set-ups were used to probe into realistic 2m thick cargo arrays with 3 mm steel plates in the incoming and outgoing sides of the simulated container. To mimic a lower intensity neutron source, the experimental set-up is positioned at least five meters away from the target of

the 25 MeV linear electron accelerator. The low intensity falling on the sample is in the order of 200 thermal n/cm^2sec and 90 near epithermal n/cm^2sec (above cadmium cut-off energy).

One detector array built consists of four commercial 2"x2" NaI(Tl) scintillators with photomultiplier tubes and *ad hoc* voltage dividers coupled to only one preamplifier, designed to reduce the initial dead time after each accelerator burst. Shielding made it possible to sort-out the gamma response to neutron interactions in the presence of a combined intense pulsed high energy X-ray and neutron field. Substances of interest tested for their gamma response are Cl, N, S, Ag, As, Cr, Cd, Hg.

Most attention was dedicated to chlorine, for which the only real case of interest is that of a container almost full of unwanted chlorinated contaminants. Fig.4 shows the result of plotting several 5 minutes irradiations, where the signal from solutions of different concentrations are not distinguishable, but clearly separated from the Cl in the empty container composition, and far from the background of the non chlorinated cargo array.

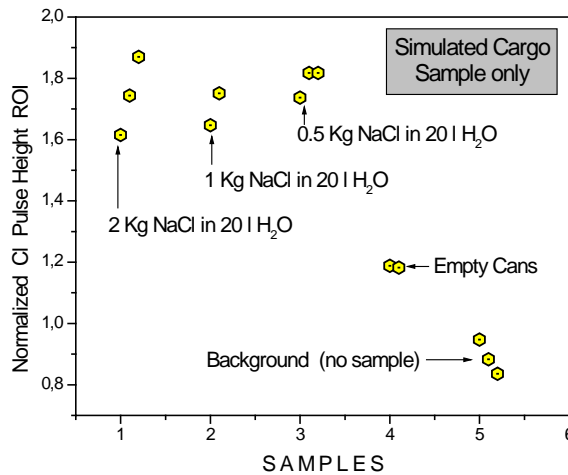


Fig.4: Simulated empty container. Later loaded with different NaCl solutions, 2, 1 and 0.5 kg in 20 l of water. 5 min recording time determinations. Appropriate regions of interest (ROI) of each gamma spectrum most representative of the substance, were normalized to a region of the spectrum not influenced by that substance

Fast neutron detection from uranium induced fission after each accelerator burst (Tartaglione, 2009), was carried out through 70 x100cm² active area detectors incorporating 10 He³ tubes (2.5cm diameter and 55cm active length, 4 atm gas pressure) inside Cd wrapped moderator. Uranium in simulated cargo arrays was materialized through an enriched uranium sample (HEU, U-235 mass= 27.5 g in Al) or a natural uranium fuel bundle (FB, U-235 mass= 38.38 g in 13 fuel pins), Fig.5. These results were presented at the

Third Research Coordination Meeting on Neutron Based Techniques for the Detection of Illicit Materials and Explosives, United Nations Internat. Atomic Energy Agency (Mayer b, 2009).

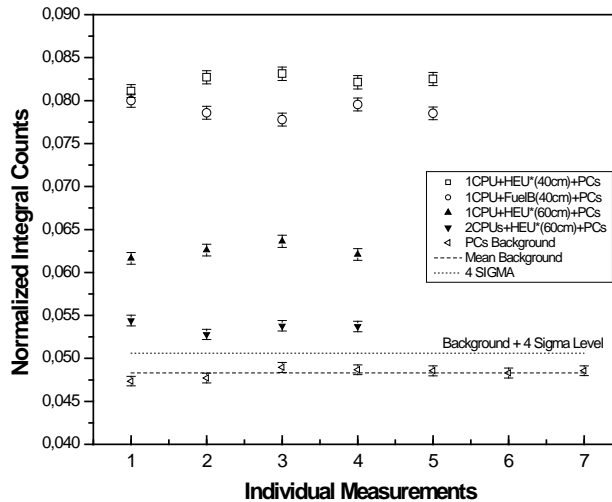


Fig.5: Integral fast neutron counts for each 5 min recording time determinations with HEU and FB, hidden behind different number of table-top computers and 3 mm steel plate. The mean background 4 sigma level is indicated for comparison

High energy photon activation

The exploitation of the high energy bremsstrahlung (high energy photons emitted by fast, relativistic, electrons being stopped by interaction with a heavy atomic nucleus) for photonuclear activation (PNA) has recently been explored. Several samples were activated and analysed. Fig.6 depicts two examples of initial interest. The upper graph is related to the need to find out if the pure quartz containers usually employed for neutron activation analysis would be apt for PNA. The result is that they are clearly not convenient for the considerable number of gamma “peaks“ that quartz produces and, consequently, if some existing samples were to be analysed with the new technique, they would have to be removed from the quartz capsules. The lower graph shows the result of activating a pure lead sample to test if lead could be easily detected and if impurities would be distinguished from it, because lead is not detectable through conventional instrumental neutron activation analysis.

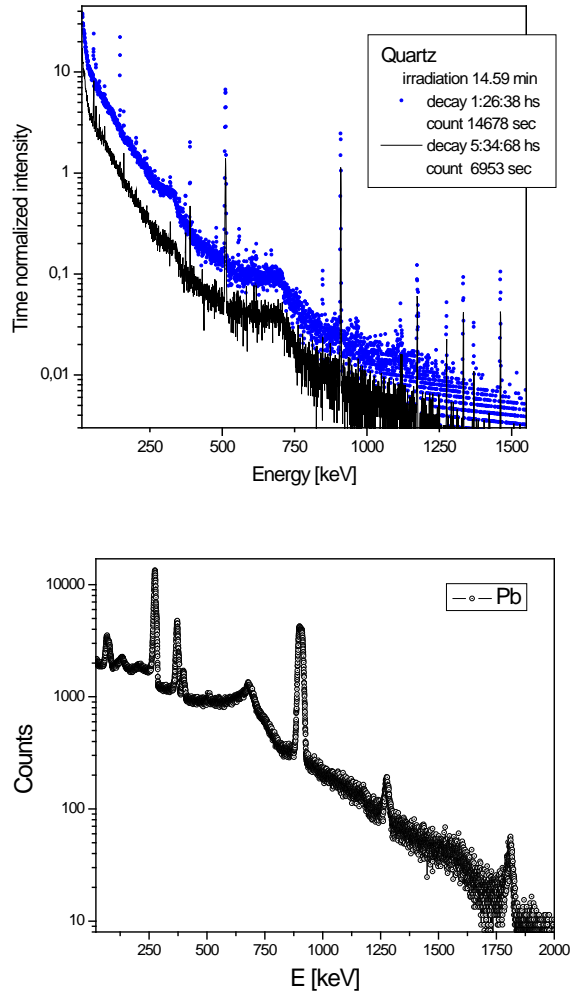


Fig.6: Gamma response from samples activated through photonuclear reactions. Upper graph: gamma spectra from quartz sample after two initial decay times. Lower graph: pure lead sample.

Undergraduate and postgraduate students experimental activities

Students of Nuclear Engineering and some students pursuing Master or Doctoral degrees, perform experimental determinations of neutron field profile in moderators by foil activation and measurements of die-away time in moderators (Fig.7), as a function of geometrical buckling and of macroscopic absorption cross section, using miniature fission chamber neutron detectors, taking advantage of the pulsed nature of this versatile neutron source.

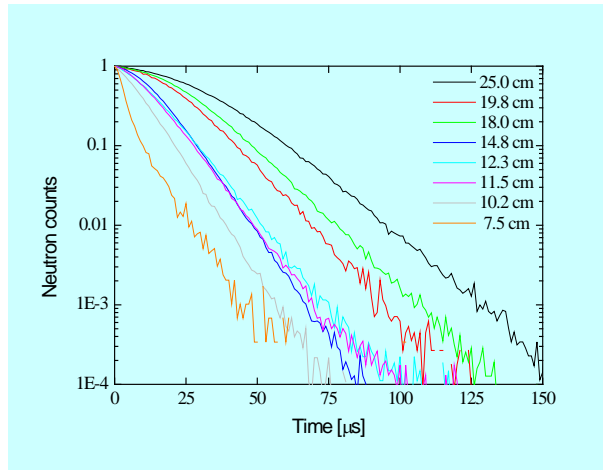


Fig.7: Neutron population die-away for cubic moderators of the lateral dimensions indicated

LOCA (Loss Of Coolant Accident) simulation experiments are available for students, in which the pulsed neutron field is studied around a natural uranium fuel element in the presence of surrounding moderator, with and without coolant (light water). The fuel pins pitch can also be changed.

Conclusion

The capacity to detect neutrons as a function of neutron energy over a wide range of energy decades is possible when employing a pulsed neutron source, which, in our case, relatively simple spectrometers and associated instrumentation, has allowed obtaining sound statistical data even using a small accelerator-based neutron source as the 25 MeV linear electron accelerator at Bariloche. The possibility to employ the bremsstrahlung high-energy photons has arisen the capacity to carry out elemental analysis. And, although not mentioned herein, the direct irradiation with the lower energy electron beam has been used in other applications such as characterization of electronics for space satellites use.

References:

- Lehmann, E.H. et al, Nucl. Instr. Meth. A603 (2009) 429-438.
- Fermi, E., W.J. Sturm and R.G. Sachs, Phys. Rev. 71 (1947) 589-594.
- Petriw, S., J. Dawidowski, J.R. Santisteban, J Nuclear Materials 396 (2010) 181.
- Santisteban, J.R., et al, J Nuclear Materials 425 (2011) 218.
- Mattes M., J. Keinert. Thermal neutron scattering data for the moderator materials H₂O, D₂O and ZrHx in ENDF-6 format and as ACE library for MCNP (X) codes. INDC (NDS)-0470. IAEA (2005).

Chadwick, M. B., et al. "ENDF/B-VII.1. Nuclear data for science and technology: cross sections, covariances, fission product yields and decay data." *Nuclear Data Sheets* 112.12 (2011): 2887-2996.

Marquez Damian J.I., D.C. Malaspina, J.R. Granada. "Vibrational spectra of light and heavy water with application to neutron cross section calculations". *J. Chem. Phys.*, 139 (2013) 024504. <http://dx.doi.org/10.1063/1.4812828>

Toukan, K., Rahman, A. Molecular-dynamics study of atomic motions in water. *Phys. Rev. B: Condens. Matter*, 31 (5), 1985.

MacFarlane, R., Muir, D. The NJOY Nuclear Data Processing System, Version 99. Tec. Report., Los Alamos National Laboratory, 1999.

Kropff, F., J.R. Latorre, J.R. Granada, C. Castro Madero. "Total Neutron Cross-Section of D2O at 20 °C between 0.0005 and 10 eV", EXFOR 30283.001 (1974).

Blostein, J.J., L.A. Rodríguez Palomino, J. Dawidowski, *Phys.Rev.Lett.*, 102 (2009) 097401.

Chatzidimitriou-Dreismann, C.A., T. Abdul Redah, R.M.F. Streffer, J. Mayers, *Phys.Rev.Lett.*, 79 (1997) 2839.

Mayer(a), R.E., A. Tartaglione, F. Di Lorenzo, C. Sepulveda Soza, M. Schneebeili, P. D'Avanzo, L. Capararo. Active Neutron Interrogation Approach to Detect Special Nuclear Material in Containers. AccApp2009-International Topical Meeting on Nuclear Research Applications and Utilization of Accelerators; *Satellite Meeting V Neutron Based Techniques for the Detection of Illicit Materials and Explosives*. Vienna, Austria, 4 - 8 may 2009.

<http://www-pub.iaea.org/MTCD/meetings/Announcements.asp?ConfID=173>
Tartaglione, A., F.Di Lorenzo, R.E.Mayer. Detection of Thermal Induced Prompt Fission Neutrons of Highly-enriched Uranium: A Position Sensitive Technique. *Nucl.Inst. and Meth. in Physics Research, B* 267 (2009) 2453-2456

Mayer(b), R. E., A. Tartaglione, J.J. Blostein, C. Sepúlveda Soza, M. Schneebeili, P. D'Avanzo, L. Capararo. Slow Neutron Interrogation for Detection of Concealed Substances. Third Research Coordination Meeting on Neutron Based Techniques for the Detection of Illicit Materials and Explosives, United Nations Internat. Atomic Energy Agency (IAEA) Coordinated Research Project. Johannesburg, South Africa 16 – 20 November 2009.

<http://cra.iaea.org/cra/documents/2009-annual-report.pdf>
2.5.2 CRP F11012

DOES “THINKING IN SYSTEMS” FOSTER A CROSSDISCIPLINARY UNDERSTANDING OF ENERGY?

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Abstract

In school education the concept of energy should be a unifying element between all natural science disciplines. Still, many characteristics of living systems appear to be in contradiction to the laws of physics. Physics often refer to energy conservation in a closed system, whereas biology is often dominated by open ecological or physiological systems with a "dynamic equilibrium". This makes the underlying, crosscutting scientific concept of energy hard to understand. Our study investigated if the idea of an open energy system (with an in- and output of energy), located within an "idealized" closed system (in which the total amount of energy is conserved), offers the potential for a cross-disciplinary understanding. We developed a learning environment and applied interviews to identify students' ability to think in open and closed systems. Four teaching experiments with focus groups of three students each (9th grade, secondary school, males = 10) were carried out. Within the learning environment a scaled model illustrated the idea of an open system that is in direct exchange with the environment (representing an "idealized" closed system). We identified specific learning obstacles that are connected with energy conservation within the closed system, where students faced severe difficulties to detect the conversion of energy within the environment. A molecular perspective could "rebuild" the visibility and tangibility of energetic processes. We propose the particle model to bridge the apparent macroscopic – molecular gap.

Keywords: Conceptual development, particle model, open system, closed system

Introduction

Energy plays a central role in our everyday lives as well as in science. Concepts of energy are crosscutting and intersect all natural science disciplines. The Decade of Education for Sustainable Development - established by the United Nations (UN) from 2005 to 2014 – also stresses the importance of scientific literacy in this regard. Worldwide, societies have recognized the central role of schools within energy education and responded with a curricular implementation of energy concepts across all branches and years of schooling (e.g. NRC 2012). However, in science class the topic of energy is generally being taught focusing on the respective discipline. They rarely incorporate previous knowledge from other disciplines and make the underlying, crosscutting scientific concepts hard to understand.

Especially conservation and degradation of energy often appear to be contradicting (e.g. Ogborn 1990; Trumper 1996; Neumann et al. 2013). „We are failing our students by not making explicit connections among the ways energy is treated in physics, chemistry, and biology.“ (Cooper & Klymkowsky, 2013, p. 309). Only a few studies applied a multidisciplinary perspective in the discourse about a better understanding of energy (Cooper & Klymkowsky 2013; Dreyfus et al. 2015; Lancor 2012, 2014; Nagel & Lindsey 2015; Redish et al. 2014). Until now, empirically validated strategies for trans-disciplinary teaching strategies are still missing.

For this purpose it is necessary to identify differences between disciplines. We focus on the "system nature" of the concept of energy (Duit 2014) that has been described differently, depending on the specific context. Lancor (2014, p. 1263) stated, that "the principle of energy conservation needs to be introduced in tandem with the idea of a clearly defined system.". Doménech and colleagues (2007) described energy as a property or a key quantity defined in a system that is not meant to be an isolated "object".

In relation to the respective discipline, energy is perceived either within a closed or an open system. „So far, physics and physical chemistry have been concerned almost exclusively with processes in closed reaction systems, leading to chemical equilibria.“ (Von Bertalanffy 1950, p. 23). Physics refer to energy conservation within a closed system, e.g. in terms of calculations that refer to the 2nd law of thermodynamics. In contrast to these "idealized systems" (Nordine et al. 2010, p. 670) Cooper and Klymkowsky (2013) stated, that „nonequilibrium systems, such as those found in living organisms, are open in terms of energy“.

Within biological structures, energy circulates within open systems (e.g. physiological or ecological systems) that are in direct exchange with

each other. Terms such as energy source and energy consumption are prominent in this context.

Still, multidisciplinary approaches have been in existence for a long time: “We need (...) an extension and generalization of the principles of physics and physical chemistry, complementing the usual theory of reactions and equilibria in closed systems, and dealing with open systems, their steady states, and the principles governing them.” (Von Bertalanffy 1950, p. 23). More than sixty years later we are following his considerations of a "dynamic equilibrium" by taking open and closed systems into account.

Our cross-disciplinary approach combines both systems - by the idea of an in- and output of energy in open systems that are located within an “idealized” closed system. The closed system stands for a constancy of the total amount of energy amidst a change of energy within the open systems (c.f. Hiebert 1962; Elkana 1974). We developed a learning environment, which is based on the idea of “thinking in systems” and analysed the effects on students` understanding of the concept of energy. Our theoretical research framework of students` conceptual development is grounded on the theory of moderate constructivism (e.g. Duit & Treagust 1998).

Our understanding of the idea of “thinking in systems”

“Thinking in systems” deals with a mental model, where the scope of an open system can be adopted to the specific focus of interest. Hereby open systems previously have to be defined, they can be enlarged to more complex systems (e.g. by including an energy input from the sun) or reduced to a lower level of complexity (e.g. by an energy input from biomass). Energy either can be transferred from one part of a system to another part or from one system to another, depending on the individual focus.

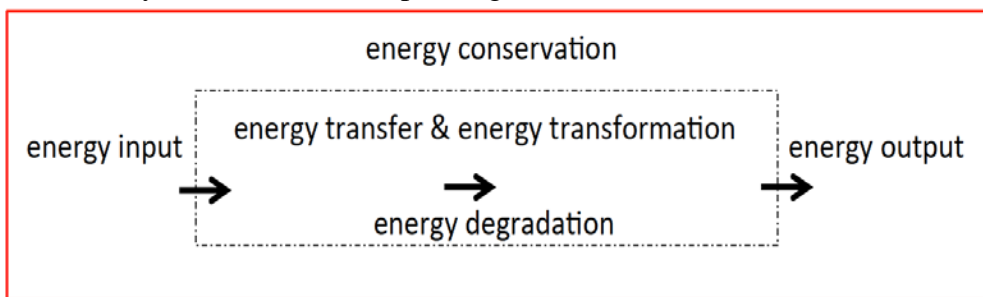


Fig. 1: The schematic representation of an open system within a closed system combines key ideas of energy. The black dashed line indicates the open system and the red continuous line the idealized closed system. Note, that Fig. 1 is simplified, taking only one single open system into account.

Fig. 1 shows a schematic representation: Within the closed system (red continuous line), energy can move between open systems (indicated by

a black dashed line). Hereby the total amount of energy remains unchanged. The connection of both systems relates energy conservation (closed system) with its input and output (open systems). Inside the open system (dashed line) energy is transferred, transformed, thereby degraded and emitted into the environment. The continuous red line symbolises the conservation of energy within a closed system. The black line is dashed to indicate that open systems always interact with the environment/ the overarching system; hence they are exposed to external forces, inter alia expressed by gravitational/ potential energy (cf. Doménech et al. 2007). As a consequence the open system should not be considered independently from the surrounding systems.

Does “thinking in systems” foster an integral understanding of the concept of energy?

We applied the idea of open and closed systems within a learning environment to identify students’ ability to think in systems.

Sample and Procedure

We taped four teaching experiments, with focus groups of three students each. Learners were in grade 9 (secondary school). It is important to note, that many aspects of the concept of energy have already been addressed in the classroom. Teaching experiments consisted of a pre-interview, an intervention and a post-interview. The same person conducted all interviews that lasted on average 35 minutes. Altogether twelve participants (males = 10) were interviewed.

Learning environment: The learning environment should demonstrate the idea of an energy exchange between an open system (consisting of a scaled biogas model) and the idealized closed system (environment). We defined the limits of the open system by the in- and output of energy.

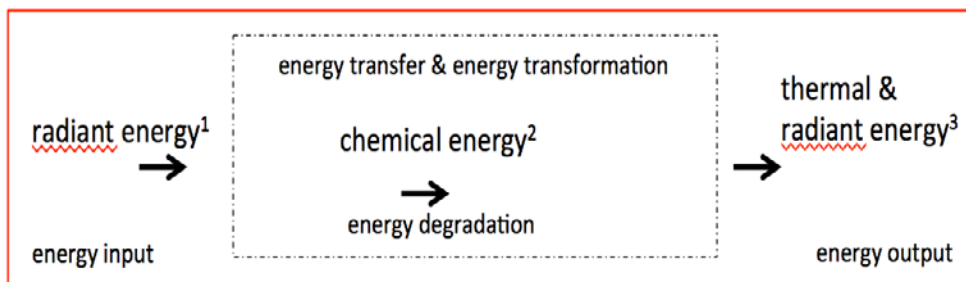


Fig. 2: Schematic representation of the practical implementation of “thinking in systems” within a learning activity. Transformation processes are indicated by numbers and explained in more detail below. The black dashed line indicates the open system and the red continuous line indicates the idealised closed system (cf. Fig. 1).

1. Energy input by biomass (as a source of energy).
 2. Production of biogas via fermentation of biomass by bacteria (using liquid manure and corn) in a biogas model (based on Jaeckel & Parchmann 2010)
 3. Ignition of biogas and emission of thermal and radiant energy indicated by light and heat. Emitted heat could be measured with a digital infrared thermometer.
- (1) Pre-interview: Students explained – contextless - six key ideas of the energy concept (input, transformation, transfer, degradation, output and conservation of energy)
- (2) Intervention: First, the interviewer explained that the concept of energy could either refer to an open or an idealized, superordinate, closed system. Open systems were put in context to living organisms with a dynamic equilibrium and closed systems in context to physics (second law of thermodynamics). Secondly, both concepts were brought together by the idea of an energy exchange between the open and the closed system. Thirdly, the scaled model was introduced.
- (3) Post-interview: Students should describe if and how the idea of an open system within a closed system could be applied by using the scaled model. They should refer to the previously named ideas of the concept of energy. The open interview guide enabled us to rephrase original questions and “to dig deeper to get to the bottom of“ the students’ „mis“conceptions and to identify underlying thinking patterns.

Results

Pre-interview: In the pre-interview students mainly named definitions that already have been addressed in the classroom. Stated key ideas were not always scientifically correct at first, but have been elaborated and improved during the group discussions and students defined all key ideas (including input, transformation, transfer, degradation and output of energy as well as energy conservation) scientifically correctly.

Post-interview/open system: Students were able to transfer key ideas to the open system. They easily identified transformation processes and connected manifestations of energy. Hereby most of them used the idea of energy degradation.

Post-interview/closed system: Although students could state that energy is not destroyed and still exist within the environment, they could not detect the conversion of energy outside of the open system. Learners knew that thermal and radiation energy is released into the environment and is still existent, but they could not explain in which form.

The question of the whereabouts of energy within a closed system led to extensive learning difficulties. Two “mis”conception named during

the post interview, exemplarily demonstrate the students' attempts to identify the remaining energy. Both students answered to the question "What happens with the energy output of the glowing lamp?" and tried to explain the conservation of energy.

David (15 years): "Thermal energy accumulates and contributes to global warming". David perceived the earth as a closed system, simultaneously he tried to identify energy through its effects.

Sarah (15 years): "Thermal energy is absorbed by the sun and re-radiated. Radiation energy is passes on to plants and is further used for photosynthesis." For Sarah energy re-circulated between the earth and the sun.

Discussion

Overall, students seemed to be very sophisticated, if they only had to reproduce key ideas of the concept of energy without applying them to a specific context. It is important to note that the conversation itself (without any intervention) proved to be very conducive to learning. Contrary to our assumption, energy conservation together with the degradation or rather in- and output of energy – that are often connected with specific learning difficulties (e.g. Ogborn 1990; Trumper 1996; Neumann et al. 2013) – did not appear to be contradicting to the students. Already before the intervention, students had a scientific understanding of energy as quantitatively stable, but subject to qualitative change. We identified the shift from the open to the closed system as a specific obstacle to the students.

Learning barrier: to change from "visible" to "invisible" energy

In the post interview students could easily apply the key ideas of energy, as long as energy could be detected through its effects. They could also describe the transfer of energy into the system and out of the system. It has already been shown that the observation of energy related phenomena foster an experience-based understanding of energy (Brook & Wells 1988, Driver et al. 2013, Nordine et al. 2010).

It seemed to be contra-inductive for the learners to believe that the "released" (thermal and radiation) energy is still there because it could not be sensed anymore. They knew that energy could not be destroyed, though they were not able to apply this idea in a real world context.

This seems comprehensible as our understanding of the world is based on our experiences. They support us to understand new matter on the basis of the known and familiar (Lakoff & Johnson 2008; Lakoff 1987). Hereby we rely on schemata that already have been established in early childhood. They are assigned and help to structure concepts, such as energy, that cannot be experienced physically (Lakoff & Johnson 2008). Energy as

an abstract concept is understood imaginatively, because directly meaningful concepts and schemata are used (cf. Niebert & Gropengießer 2014). Exemplarily, the in- and output of energy is directly and intuitively understandable, because of our daily life experiences of proving and taking something. This schema is tangible and simple structured (cf. Gropengießer 2007, p.109).

Sarah's "mis"conception, that thermal energy is "absorbed" by the sun and re-radiated, demonstrates students' attempts to identify an in- and output of energy. The idea of the conservation of energy within a closed system is based on a physical ideal that cannot be experienced directly in daily life (Nordine et al. 2011, p. 670). In real life we perceive a barrier between in- and outside (of the system) (cf. "container schema" Johnson 1987, p. 126; Lakoff 1987, p. 267). The idea of a closed system that simultaneously is contiguous is a completely new idea that cannot be understood within common schemata. Unlike open systems, e.g. ecological or physiological systems, an idealized closed system is based on a mental image that must be accepted on the basis of physical laws.

Is there a way out?

According to literature, participants of our study only recognized energy by visible changes (Duit 1984; Goldring & Osborne 1994; Trumper 1996, 1998; Watts 1983; Van Heuvelen & Zou 2001) and transformation processes when they could be observed (Trumper 1998; Goldring & Osborne 1994). David's "mis"conception that thermal energy accumulates and contributes to global warming (due to energy conservation) is representative.

Students lacked the concept that (at the atomic level) heat is kinetic energy that is transferred by atoms - consequently energy "gets lost" in the atmosphere.

We present the particle model as a possible solution that leads to a conceptual development: All matter is composed of discrete, energetic particles. Perceiving energy from a molecular perspective - characterized by particles - (Tipler & Mosca 2008, p. 190) offers the opportunity to relate to the thinking pattern "energy causes changes" also if these changes are not perceptible on a macroscopic scale. Energy can appear - simplified - as a mixture of kinetic energy, potential energy and radiation energy. Other forms of energy can be derived from this (c.f. NRC 2012; Lancor 2014, p. 1256).

Particle models of matter are widely recognised as being fundamental in science education and pupils' understanding benefits from the introduction of a "particle level". Understanding the structure and properties of matter is an essential part of science literacy (e.g. Papageorgiou & Johnson 2005; Tytler, Peterson & Prain 2006; Merritt & Krajcik 2013). "A vast array of biological, chemical and physical phenomena can only be explained by

understanding the changes in the arrangement and motions of atoms and molecules.” (Harrison & Treagust 2003, p. 189). The suitability for learning of the particle model - by the display of molecular movements and bonds - has been shown in different contexts. In science education the model is used “to explain material properties, the states of matter and phase changes, chemical reactions, the water cycle, diffusion, DNA and cell biology.” (Harrison & Treagust 2003, p. 189). Still, besides the identified learning effectiveness, significant difficulties have been found. Although it is easy to inspire students at a macroscopic level, it is a pedagogical challenge to create the same fascination at the submicroscopic and symbolic level (Othman, Treagust & Chandrasegaran 2008). Additionally a progression in thinking within particle models is generally only attained over periods of some years (Garcia Franco & Taber 2009).

Conclusion

In contrast to (physical) closed systems that refer to the second law of thermodynamics, living systems are open systems that are never in true equilibrium. Bertalanffy (1950) speaks of a "dynamic equilibrium". Our interdisciplinary approach of “thinking in systems” presents an opportunity to link both systems. We identified specific learning obstacles that are connected with energy conservation within closed systems. Within an open system key ideas of energy could be easily experienced (by sophisticated students) using the phenomena it produces. Outside of this system energy is not conceptually tangible and cannot be perceived by its effects anymore. We propose the particle model to bridge the macroscopic (visible) – molecular (invisible) gap. Future studies should investigate if the conception of discrete, energetic particles and the display of molecular movements and bonds foster an understanding of the way energy is transformed and conserved.

References:

- Brook, A. J., & Wells, P. (1988). Conserving the circus? An alternative approach to teaching and learning about energy. *Physics Education*, 23(2), 80.
- Cassirer, E. (1910). *Substanzbegriff und Funktionsbegriff* [The concepts of substance and function]. Berlin: B. Cassirer.
- Cooper, M. M., & Klymkowsky, M. W. (2013). The trouble with chemical energy: Why understanding bond energies requires an interdisciplinary systems approach. *CBE-Life Sciences Education*, 12(2), 306-312.
- Doménech, L. J., Gil-Pérez, G., Gras-Martí, A., Guisasola, J., Martínez-Torregrosa, J., Salinas, J., Trumper, R., & Valdés, P. (2007). Teaching of

- energy issues: A debate proposal for a global reorientation. *Science & Education*, 16(1), 43–64.
- Dreyfus, B. W., Geller, B. D., Meltzer, D. E., & Sawtelle, V. (2015). Resource Letter TTSM-1: Teaching thermodynamics and statistical mechanics in introductory physics, chemistry, and biology. *American Journal of Physics*, 83(1), 5-21.
- Driver, R., Rushworth, P., Squires, A., & Wood-Robinson, V. (Eds.). (2013). *Making sense of secondary science: Research into children's ideas*. Routledge.
- Duit, R. (1984). Learning the energy concept in school-empirical results from the Philippines and West Germany. *Physics Education*, 19(2), 59-66.
- Duit, R. (2014). Teaching and learning the physics energy concept. In R. Chen & A. Eisenkraft (Eds.), *Teaching and learning of energy in K-12 education* (pp. 67–85). Dordrecht: Springer.
- Elkana, Y. (1974). *Discovery of the conservation of energy*. London: Hutchinson.
- Garcia Franco, A., & Taber, K. S. (2009). Secondary students' thinking about familiar phenomena: Learners' explanations from a curriculum context where 'particles' is a key idea for organising teaching and learning. *International Journal of Science Education*, 31(14), 1917-1952.
- Goldring, H., Osborne, J. (1994). Students' difficulties with energy and related concepts. *Physics Education*, 29(1), 26-32.
- Gropengießer, H. (2007). Theorie des erfahrungsbasierten Verstehens. In *Theorien in der biologiedidaktischen Forschung* (pp. 105-116). Springer Berlin Heidelberg.
- Harrison, A. G., & Treagust, D. F. (2003). The particulate nature of matter: Challenges in understanding the submicroscopic world. In *Chemical education: Towards research-based practice* (pp. 189-212). Springer Netherlands.
- Hiebert, E. N. (1962). *Historical roots of the principle of conservation of energy*. Ayer Co Pub.
- Jaeckel, M. S., & Parchmann, I. (2010). Bioenergeträger der zweiten Generation, Schulexperimentelle Erarbeitung und konzeptionelle Einbettung am Beispiel Biogas und hydrothermale Karbonisierung. [Bioenergy sources of the second generation] *Chemkon*, 17(3), 117-123.
- Johnson, Mark (1987). *The Body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason*, University of Chicago.
- Lakoff, G. (1987). *Women, Fire and Dangerous Things. What Categories Reveal about the Mind*. Chicago, London.
- Lancor, R. A. (2012). Using student-generated analogies to investigate conceptions of energy: A multidisciplinary study. *International Journal of Science Education*, 36, 1–23.

- Lancor, R. A. (2014). Using student-generated analogies to investigate conceptions of energy: a multidisciplinary study. *International Journal of Science Education*, 36(1), 1-23.
- Merritt, J., & Krajcik, J. (2013). Learning progression developed to support students in building a particle model of matter. In *Concepts of matter in science education* (pp. 11-45). Springer Netherlands.
- Nagel, M. L., & Lindsey, B. A. (2015). Student use of energy concepts from physics in chemistry courses. *Chemistry Education Research and Practice*, 16(1), 67-81.
- Neumann, K., Viering, T., Boone, W. J., & Fischer, H. E. (2013). Towards a learning progression of Energy. *Journal of Research in Science Teaching*, 50(2), 162-188.
- Niebert, K., & Gropengießer, H. (2014). Understanding the Greenhouse Effect by Embodiment–Analysing and Using Students' and Scientists' Conceptual Resources. *International Journal of Science Education*, 36(2), 277-303.
- Nordine, J., Krajcik, J., & Fortus, D. (2010). Transforming energy instruction in middle school to support integrated understanding and future learning. *Science Education*, 95(4), 670–699.
- National Research Council [NRC]. (2012). A framework for K-12 science education. Washington,
- Ogborn, J. (1990). Energy, Change, Difference and Danger. *School Science Review*, 72(259), 81-85.
- Othman, J., Treagust, D. F., & Chandrasegaran, A. L. (2008). An investigation into the relationship between students' conceptions of the particulate nature of matter and their understanding of chemical bonding. *International Journal of Science Education*, 30(11), 1531-1550
- Papageorgiou, G., & Johnson, P. (2005). Do particle ideas help or hinder pupils' understanding of phenomena?. *International Journal of Science Education*, 27(11), 1299-1317.
- Redish, E. F., Bauer, C., Carleton, K. L., Cooke, T. J., Cooper, M., Crouch, C. H., ... & Zia, R. K. P. (2014). NEXUS/Physics: An interdisciplinary repurposing of physics for biologists. *American Journal of Physics*, 82(5), 368-377.
- Trumper, R. (1996). Teaching about energy through a spiral curriculum: Guiding principles. *Journal of Curriculum and Supervision*, 12(1), 66-75.
- Trumper, R. (1998). A longitudinal study of physics students' conceptions on energy in pre-service training for high school teachers. *Journal of Science Education and Technology*, 7(4), 311-318.
- Tytler, R., Peterson, S., & Prain, V. (2006). Picturing evaporation: Learning science literacy through a particle representation. *Teaching Science: the journal of the Australian Science Teachers Association*, 52(1), 12-17.

- Van Heuvelen, A., & Zou, X. (2001). Multiple representations of work–energy processes. *American Journal of Physics*, 69(2), 184-194.
- Von Bertalanffy, L. (1950). The theory of open systems in physics and biology. *Science*, 111(2872), 23-29.
- Watts, M. (1983). Some alternative views of energy. *Physics Education*, 18, 213-217.

ESTADO Y PERCEPCIÓN DE LOS SERVICIOS ECOSISTÉMICOS DE LAS RIBERAS DEL MATANZA-RIACHUELO

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Abstract

Cities grow continuously and thereby environmental conditions deteriorate especially through pollution. The urban nature - urban green - becomes relevant considering its ecological, economic, and social functions which contributes significantly to the compensation and mitigation of environmental burdens. Through the application of indexes and interviews, we analyse the river banks in the Matanza Riachuelo watershed through an environmental perspective and the perception of residents. The results confirms that riparian areas are multidimensional. While riverbanks diminish their environmental quality along an urban to rural gradient, the environmental perception is more complex. Gender and the proximity of residents to the riparian edge influenced opinions and attitudes in the three sectors of the watershed.

Keywords: Environment conditions, pollution

Resumen

Las ciudades crecen continuamente y con ello sus condiciones ambientales empeoran especialmente por fenómenos de contaminación. La naturaleza urbana - el verde urbano - adquiere mayor relevancia teniendo en cuenta sus funciones ecológicas, económicas y sociales y contribuye esencialmente a la compensación y mitigación de pasivos ambientales. Por medio de la aplicación de índices y de encuestas de opinión se analizan las riberas en la cuenca Matanza Riachuelo desde una perspectiva ambiental y

de percepción de los residentes. Los resultados confirman que las áreas riparias son multidimensionales. Si bien se reconoce un gradiente de pérdida de calidad de la ribera desde el entorno urbano al rural, la percepción ambiental es más compleja. Las opiniones y actitudes se ven influenciadas en los tres sectores de la cuenca según género y la cercanía de los residentes al borde ripario.

Palabras claves: Riberas, calidad, percepción

Introducción

El crecimiento de las áreas urbanas y los problemas ecológicos, económicos y sociales se han acelerado en las últimas décadas (UNFPA, 2005). Costa y Mathey (2007) señalan que el desarrollo urbano debe atender problemas de polución de aire, agua, generación y disposición de basura. Las áreas verdes contribuyen a combatir esos problemas, por que colaboran al enfriamiento, reducen el ruido, los contaminantes y mejoran la calidad de aire (Profé *et al.*, 2009). A pesar de que el verde urbano tiene alto valor en el sentido económico, ecológico y social, a menudo se lo subordina al desarrollo económico, olvidando que el desarrollo sustentable no es posible sin el ecológico (Costa y Mathey, 2007 y Profé *et al.*, 2009). Las riberas fluviales son importantes componentes del verde en la ciudad y suelen ser sitios de alto valor recreativo. Por otro lado, son biocorredores y su funcionamiento depende de sus características estructurales y de los disturbios a los que están sujetos. Cumplen servicios ecosistémicos múltiples como los de aprovisionamiento, regulación, de apoyo y cultural, entendiendo por tales a todas las funciones y procesos que benefician a la sociedad en términos económicos o de calidad de vida. Por ello, es importante que los organismos de planeamiento y decisores políticos conozcan el valor que la naturaleza urbana tiene para la comunidad, para lo cual es preciso contar con tal información, valorando el verde urbano en un marco integrador. La finalidad última es mejorar la oferta, calidad y equipamiento del verde urbano.

En las últimas décadas, en varios países, se han desarrollado metodologías de monitoreo rápidas para evaluar y monitorear las riberas fluviales desde una perspectiva ambiental. Existen protocolos rápidos de evaluación de la calidad ecológica estandarizados (Jáimez-Cuéllar *et al.*, (2002), Wright *et al.*, (1984;), (Plafkin *et al.*, (1989), Barbour *et al.*, (1999), Marchat *et al.*, (1999), Smith *et al.*, (1999), Turak *et al.*, (1999), Davies, (2000), Simpson y Norris, (2000), Wright (2000) que integran parámetros multidimensionalmente basados en características geomorfológicas, biológicas, heterogeneidad del hábitat fluvial incluyendo usos de las áreas adyacentes. Lamentablemente, estos protocolos tienen limitaciones cuando

se quiere extrapolar la herramienta a ríos de otras regiones. Al querer aplicar dicha metodología a las riberas del río Matanza-Riachuelo, estos parámetros deberían ser redefinidos a escala local teniendo en cuenta que se trata de un río de llanura que corre por una cuenca con presión metropolitana. En general, aunque los esquemas de evaluación de la calidad ecológica han ido modificándose a lo largo de los años, no se ha incorporado hasta hoy la percepción de los usuarios. Así, ninguno de los protocolos anteriormente mencionados ha tenido en cuenta la percepción de la gente, variable que es de suma importancia en un río urbano como el Riachuelo y suburbano-rural como el Matanza ubicados en una de las cuencas más degradadas de la Argentina en lo que respecta a la calidad del ambiente (Fundación Ciudad (2002), Malpartida (2002), ACUMAR (2009)).

El grave estado de contaminación y la crítica condición social y ambiental en la que se encuentra el paisaje ribereño en la Cuenca Matanza Riachuelo (CMR) ha tenido históricamente su origen en la ocupación desordenada del territorio; la falta de planificación del uso del suelo, del desarrollo urbanístico y de la localización de industrias; la carencia de la infraestructura de saneamiento necesaria y un manejo deficiente general en relación a la protección ambiental (Boll 2006). Los usos del suelo de la CMR son predominantemente tres: agrícola-ganadero, urbano e industrial. El uso agrícola-ganadero, de tipo intensivo y extensivo, ocurre fundamentalmente en la cuenca alta y en menor medida en la cuenca media. Por otro lado, en la cuenca alta y media existen diversas ciudades de menor porte, mientras que en la cuenca baja se registra uno de los más altos grados de urbanización del país (actualmente el 14% de la población argentina reside en la cuenca). Con respecto al uso industrial, en la CMR se localizan aproximadamente 4.000 establecimientos industriales y de servicios, de los cuales se estima que sólo el 40% se encuentra conectado a la red cloacal, mientras que los restantes vuelcan sus efluentes directamente al río Matanza-Riachuelo (ACUMAR 2009). La experiencia internacional ha puesto en evidencia que las soluciones a la degradación ambiental de los ríos de cuencas urbanas y periurbanas requieren una combinación de respuestas científicas, técnicas y sociales ya que es necesario desarrollar herramientas innovadoras y determinar acciones y estrategias que modifiquen los estilos culturales que causan el deterioro ambiental (SER 2004). Dado el rápido crecimiento demográfico y la consiguiente explotación de los recursos naturales, las formas de aprovechamiento y manejo de dichos recursos deben modificarse para, al menos, no intensificar los problemas ambientales existentes (Aronson *et al.*, 2007). De esta manera, distintos, y a veces opuestos, paradigmas deben vincularse, articulando disciplinas tales como la ecología, la ingeniería, la agronomía y la antropología (Wyant *et al.*, 1995), analizando alternativas a los usos del suelo. El objetivo de este estudio es abordar la

problemática de las riberas del Matanza-Riachuelo en forma integrada analizando las características socio-ambientales con énfasis en cómo se percibe la calidad de la ribera, teniendo en cuenta que sectores extendidos de la ribera suponen una exposición al riesgo ambiental.

Objetivos

- a) Evaluar multidimensionalmente la calidad ecológica de las riberas del Rio Matanza-Riachuelo en base a parámetros ambientales
- b) Redefinir la calidad de la ribera en base a la percepción de la gente, especialmente el verde urbano, servicios y riesgos ambientales

Metodología

Para el desarrollo del protocolo de evaluación de la calidad ecológica se compararon distintas metodologías existentes (España: Protocolo GUADALMED- PRECE (Jáimez-Cuéllar et al. 2002); Reino Unido RIVPACS (Wright *et al.*, 1984; Wright 2000), USA: Rapid Bioassessment Protocols (Plafkin *et al.*, 1989; Barbour *et al.*, 1999) y Australia: AUSRIVAS (Marchat *et al.*, 1999; Smith *et al.*, 1999; Turak *et al.*, 1999; Davies, 2000; Simpson and Norris, 2000). En ambos márgenes de las riberas se relevaron en 53 sitios los siguientes atributos: a) continuidad longitudinal y composición de la vegetación riparia, b) anchos de cauce y sombreado, c) conectividad entre el ecosistema ribereño y el adyacente, d) relación especies exóticas/nativas y de arboles/hierbas, e) disturbios de la vegetación riparia y del valle adyacente, f) impactos directos e indirectos sobre el curso de agua, g) uso del suelo adyacente. Los resultados se contrastaron con mapas de cobertura/uso de suelo a escala de cuenca elaborados a partir de la clasificación supervisada de imágenes satelitales y validación a campo. Se consideraron los usos del suelo presentes en las cuencas fluviales, la historia de uso y las prácticas de manejo para examinar las posibles amenazas tanto a la protección de ambientes naturales, como a la rehabilitación de ambientes degradados. El estado de las variables fue ponderado según una escala para calcular un índice de calidad ecológica. Para analizar la percepción ambiental se entrevistaron previamente grupos focales de forma exploratoria. Esta información permitió diseñar un cuestionario con los ítems relevantes que fue aplicado a modo de entrevista estructurada dirigida a grupos numerosos de residentes de la cuenca alta, media y baja del río. Estos fueron discriminados según la distancia existente entre la orilla y sus domicilios. La finalidad de la encuesta fue indagar sus opiniones y actitudes respecto de la calidad ambiental de las riberas y del riesgo. Las encuestas fueron analizadas mediante SPSS para correlacionar con características del perfil de los encuestados.

Resultados

La Fig. 1 muestra el índice calculado el cual permite conocer el estado de conservación de las riberas a través del diagnóstico del impacto de las actividades humanas y de las propias fortalezas y debilidades naturales de cada sitio ripario evaluado.

De los 53 sitios evaluados, la mayoría resultaron buenos (37 sitios), sólo uno resultó muy bueno, nueve fueron regulares y seis fueron malos. El único sitio muy bueno se encontró en la cuenca alta. La mayoría de los sitios que resultaron buenos, se ubican en la cuenca alta y media. La mayoría de los sitios regulares y todos los sitios malos se registraron en la cuenca baja.

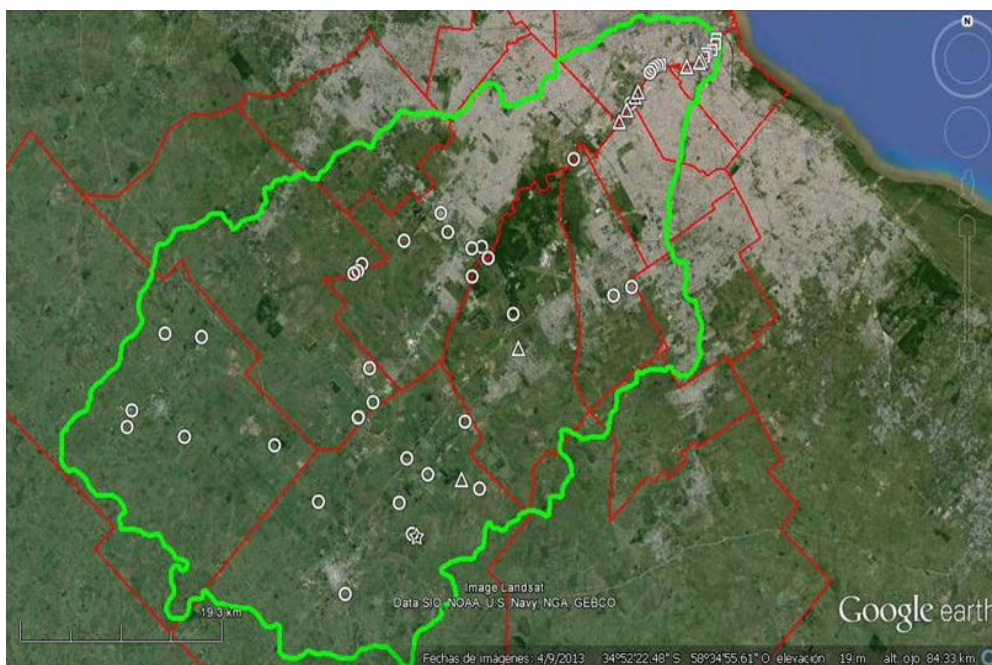


Fig. 1. Calidad de las riberas en la cuenca Matanza Riachuelo (línea verde), partidos que la conforman (líneas rojas) y los 53 sitios relevados con su valoración.

Referencias: Estrella = Muy bueno; Círculo = Bueno; Triángulo = Regular; Cuadrado = Malo.

Los resultados de la percepción ambiental indican que más de la mitad de los encuestados en la cuenca alta y media manifestaron tener experiencias negativas con el ambiente ripario debido a inundaciones o mal olor, mientras que un 57% de los encuestados en la cuenca baja no tenía relación con el río (Fig. 2). La inseguridad como característica preocupante fue mencionada por un 48% de los encuestados en la cuenca baja y 28% en la media. La mayoría consideró que el paisaje ripario era feo (33%) o muy feo (49%) debido a la contaminación del agua y a la basura (80%). Un 63%

consideró que la calidad de agua era mala y un 27 % muy mala, basándose en el color y olor percibido. A pesar de este panorama desalentador, $\frac{3}{4}$ partes de los encuestados de la cuenca alta y media estarían dispuestos a colaborar con la municipalidad en la limpieza, mantenimiento y control del ambiente ripario. Esta predisposición fue menor en la cuenca baja (59 %). Si bien actualmente el espacio ripario prácticamente no se utiliza, como espacio recreativo o de contemplación (servicio cultural) los encuestados afirmaron que podría ser un sitio donde sus hijos pudieran jugar (66% en la alta, 75% en la baja y con fines recreativos sólo 39% en la cuenca media).

Los encuestados que residían cerca del borde ribereño dijeron tener una relación negativa con el río debido al peligro de inundación y a las condiciones ambientales reinantes. Los más alejados manifestaron no tener relación alguna y se quejaron de la inseguridad. A pesar de ello, pensaron que el río podría usarse como sitio recreativo. La predisposición a colaborar en la limpieza, mantenimiento y control fue mayor en los encuestados domiciliados hasta 500 m de las riberas (84% para menos de 100 m y 76% entre 100-500 m) y se redujo a 51% para los más alejados (Fig. 3). Las mujeres residentes hasta 500 m de las riberas fueron significativamente más proclives a manifestar que estarían dispuestas a prestar ayuda que los hombres. Estas diferencias de género no se encontraron en los residentes más alejados.



Fig. 2 Relación de los encuestados con el río.

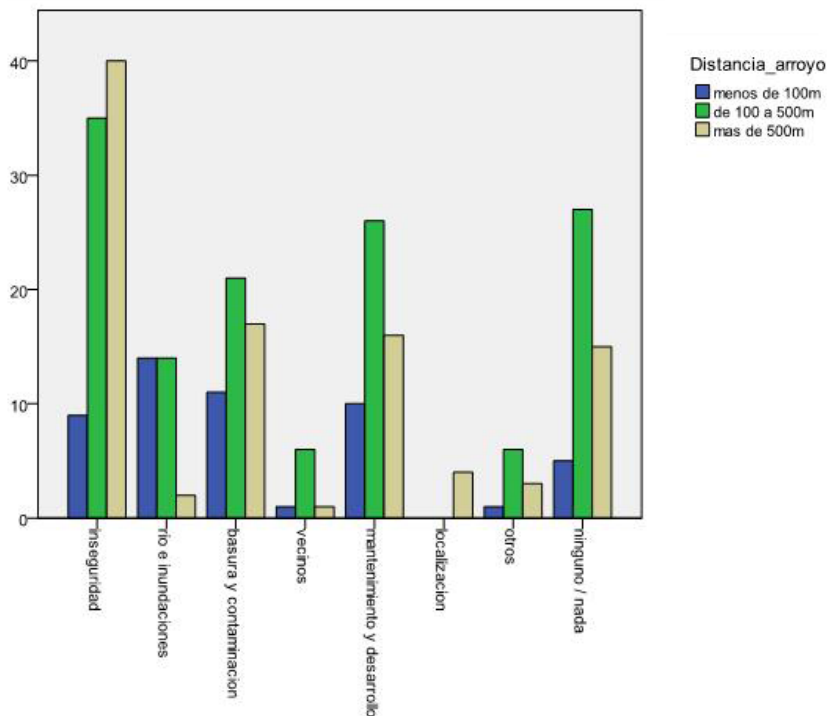


Fig. 3 Aspecto negativos del barrio para los encuestados (%) según su cercanía al río.

Conclusion

Los resultados confirman que las áreas riparias son multidimensionales y por ende, complejas. Son hábitat de flora y fauna, fuente de recursos, pero también son sumideros que reciben aportes de distintos sectores de una cuenca (Faggi y Breuste 2015). Constituyen escenarios con diferente significancia social, valorados de manera diferente por diversos actores. Las opiniones y actitudes se ven influenciadas en los tres sectores de la cuenca según la cercanía de los residentes al borde ripario (Brody et al. 2004; Guida Johnson et al. 2014) y también por el género. Hubo mas preocupación femenina por el problema ambiental en coincidencia con Hunter *et al.*, (2004) y Zelezny *et al.*, (2000); especialmente en la cuenca media y alta. Estas diferencias no se observaron en la cuenca baja. Como señalan Adams *et al.*, (2005) y Carter y Howe (2006), a la hora de diseñar políticas de actuación se torna imprescindible entender estos intrincados mecanismos.

References:

Acumar. (2009). "Plan integral de saneamiento ambiental de la cuenca Matanza Riachuelo", ACUMAR, Buenos Aires, Argentina.

- Adams, W. M., Perrow, M. R., y Carpenter, A. (2005). Perceptions of river managers
369 of institutional constraints on floodplain restoration in the UK. *J. Environ. Plann.*
370 Manage., 48(6), 877-889.
- Aronson, J., Renison, D., Rangel, J., Levy-Tacher, S., Ovale, C. y A.del Pozo. (2007). Restauración del capital natural: sin reservas no hay bienes ni Servicios. *Ecosistemas* 16 (3):15-24.
- Barbour, M. T., Gerritsen, J., Snyder, B. D. y J. B. Stribling. (1999). “Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and Fish”, EPA 841-B-99-002. US EPA, Office of Water, Washington D.C., USA.
- Boll, J. (2006). Se requiere una solución integral para resolver los problemas de contaminación de la Cuenca hídrica Matanza-Riachuelo. *Ingeniería Sanitaria y Ambiental* 87.
- Brody, S. D., Highfield, W., y Alston, L. (2004). Does location matter? Measuring
375 environmental perceptions of Creeks in two San Antonio watersheds. *Environ.*
376 Behav., 36(2), 229-250.
- Carter, J. y Howe, J. (2006). Stakeholder participation and the water framework
381 directive: the case of the Ribble Pilot. *Local Environ.*, 11(2), 217-231.
- Costa, C.S. y Mathey, J. (2007). Grünflächenentwicklung als Beitrag zur Stadterneuerung, Ein interdisziplinärer Ansatz zu Grünflächenbewertung. In: Altrock, U. et al. (eds.); *Jahrbuch Stadterneuerung 2006/2007 – Stadterneuerung und Landschaft*; Berlin.
- Davies, P.E. (2000). Development of a national river bioassessment system (AUSRIVAS) in Australia. In: Wright, J.F., Sutcliffe, D.W. and Furse, M.T. (eds.) *Assessing the Biological Quality of Freshwaters: RIVPACS and other techniques*. Freshwater Biological Association, Ambleside. pp. 113-124.
- Faggi, A. y J. Breuste (eds). 2015. “La Cuenca Matanza Riachuelo. Una Mirada ambiental para recuperar sus riberas”. UFLO Buenos Aires, Argentina. <http://img.uflo.edu.ar/a/cuencamatanza.pdf>
- Fundación Ciudad (2002). “Foro desarrollo sostenible de la cuenca Matanza-Riachuelo”. Guía de trabajo, Buenos Aires, Argentina.
- Guida Johnson, B., Faggi, A., Voigt, A., Schnellinger J. y Breuste, J. (2014). Environmental perception among residents of a polluted watershed in Buenos Aires *Journal of Urban Planning and Development* (doi 10.1061/(ASCE) UP 1943-5444.0000250).
- Hunter, L. M., Hatch, A., y Johnson, A. (2004). Cross-national gender variation in

environmental behaviors. *Soc. Sci. Q.*, 85(3), 677-694.

Jáimez-Cuéllar, P., Vivas, S. Núria Bonada, N., Robles, S., Mellado, A., Álvarez M., Avilés, J., Casas, J., Ortega, M., Pardo, I., Prat, N., Rieradevall, M., Sáinz-Cantero, E., Kutscher, A., Brabd, C. y Miserendino, M.L. (2009). Evaluación de la calidad de los bosques de ribera en ríos del NO del Chubut sometidos a distintos usos de la tierra. *Ecología Austral* 19:19-34.

Malpartida, A.R. (2002). "La cuenca del río Matanza Riachuelo". Universidad Tecnológica Nacional, Buenos Aires, Argentina.

Marchant, R., Hirst, A., Norris, R. y Metzeling, L. (1999). Classification of macroinvertebrate communities across drainage basins in Victoria; consequences of sampling on a broad spatial scale for predictive modelling. *Freshwater Biology*, 41: 253-268

Plafkin J. L., Barbour, M.T., Porter, K.D., Gross, S.K y Hughes, R.M. (1989). "Rapid Bioassessment protocols for use in streams and rivers: benthic macroinvertebrates and fish". EPA/444/4-89-001. United States Environmental Protection Agency, Washington D. C., USA.

Profé B. et al. (2009). Das grüne Berlin; Berlin; available at: http://www.stadtentwicklung.berlin.de/service/veroeffentlichungen/de/kostenlos/das_gruene_berlin.shtml, visited on December 1, 2010.

Sánchez-Ortega, A., Suárez, M^a L., Toro, M., Vidal-Abarca, M. R., Zamora-Muñoz, C. y Alba-Tercedor, J. (2002). Protocolo GUADALMED (PRECE). *Limnetica* 21(3-4): 187-204

Simpson, J.C. y Norris, R.H. (2000). Biological assessment of river quality: development of AUSRIVAS models and outputs. In: Wright, J.F., Sutcliffe, D.W. and Furse, M.T. (eds.) *Assessing the Biological Quality of Freshwaters: RIVPACS and other techniques*. Freshwater Biological Association, Ambleside. pp. 125-142.

Smith, M.J.; Kay, W.R.; Edward, D.H.D.; Papas, P.J.; Richardson, K.S., Simpson, J.C., Pinder, A.M., Cale, D. J., Horwitz, P.H.J., Davis, J.A., Yung, F.H., Norris, R.H. y Halse, S.A. (1999). AusRivAS: using macroinvertebrates to assess ecological condition of rivers in Western Australia. *Freshwater Biology*, 41: 269-282.

SER 2004. www.ser.org.

Turak, E., Flack, L.K., Norris, R.H., Simpson, J. y Waddell, N. (1999). Assessment of river condition at a large spatial scale using predictive models. *Freshwater Biology*, 41: 283-298.

UNFPA (2005). Environmental Sustainability: Population, Poverty and the Environment; New York; available at: <http://www.unfpa.org/pds/sustainability.htm>, visited on December 1, 2010.

Wright, J. F., D. Moss, P. D. Armitage. y Furse, M. T.. (1984). A preliminary classification of running water sites in Great Britain based on macroinvertebrate species and the prediction of community type using

environmental data. *Freshwat. Biol.*, 14:221-256.

Wright, J.F. (2000). An introduction to RIVPACS. In: Wright, J.F., Sutcliffe, D.W. and Furse, M.T. (eds.) *Assessing the Biological Quality of Freshwaters: RIVPACS and other techniques*. Freshwater Biological Association, Ambleside. pp. 1-24.

Wyant, J.G., Richard, A.M. y Sam, S.H.(1995). A planning and decision-making framework for ecological restoration. *Environmental Management* 19:789-796.

Zelezny, L. C., Chua, P.-P., y Aldrich, C. (2000). Elaborating on gender differences in environmentalism. *J. Soc. Iss.*, 56(3), 443-457.

DEVELOPMENT OF NEUTRON INTERROGATION TECHNIQUES TO DETECT DANGEROUS SUBSTANCES

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Abstract

The transboundary movement of dangerous substances is being internationally regulated because of the environmental consequences caused by the incorrect management of these chemicals. The international community is committed with a multitude of agreements to control and detect the illicit traffic of such substances in port containers using non-intrusive techniques. Basel and Rotterdam Agreements, Programme 21 are some of the international agreements signed. After initial trials with an accelerator based neutron source, this work reports the following effort to build a reliable experimental data set of the gamma emissions that can, in practise, be effectively recorded from the chemical substances of interest as: mercury, chlorine, cadmium and chromium. When gamma emissions of each chemical element are identified at laboratory scale, the technique will be carried one step forward to test realistic cargo arrangements. Neutron techniques are expected to be used as confirmation tools according as the results of the Coordinated Research Programme (CRP) of the International Atomic Energy Agency (Mayer a et al., 2009).

Keywords: Substances, dangerous, traffic, scanner, neutrons

Introduction

The transboundary movement of dangerous chemicals causes a great worldwide concern. Illegal substances downloaded in not authorized places produce a negative impact on the environment and in human health. As an example, the Minamata Case could be mentioned.

Some relevant substances that are used in the international market are mentioned below.

- Mercury. Liquid metal that rapidly evaporates at room temperature. Methylate mercury presents highly toxicity and characteristics of bioaccumulation and biomagnification in the trophic chain.
- Chlorinated compounds. High toxicity, frequently used as pesticides.
- Chromium. The hexavalent form presents enough scientific studies that confirm its capacity to produce cancer and chromates are toxic to plants.
- Cadmium. Metal that can be accumulated in the trophic chain, cannot be metabolized and is transmitted without changes in the food chain and is a carcinogenic element.

In regard with the internationally signed agreements, it can be mentioned: the Basel Agreement which states that: “the Parties shall cooperate in monitoring the effects of the management of dangerous wastes on human health and the environment”. The lines of wastes that shall be monitored are mentioned in its Appendix 1; chlorinated compounds correspond to lines Y10, Y43 and Y44; chromium VI corresponds to line Y21; cadmium corresponds to Y26 and mercury corresponds to Y29; and in Programme 21, chapter 35, mentions the utilization of sciences in support of the prudent use of the environment and the development in support of the daily survival and future development of humanity.

Experimental Method

In order to complement the non-intrusive inspection of goods with X or gamma photons irradiation, neutron techniques could be applied to identify the chemical substances of interest in containers. During the application of this method, different experiments were done in order to identify the prompt and early decay gammas obtained from a (n,γ) reaction induced by an isotopic neutron source and visualize the future application of particle accelerators as a technological feasible neutron source. Different international efforts have been done irradiating with fast neutrons (Buffer, 2004 and Sowerby & Tickner, 2007).

In the first instance, a 25 MeV linear electron accelerator has been employed (Fig. 1) as a pulsed neutron source with a detector array suitable for the detection of the gamma response induced by neutrons incident upon the substances of restricted or dangerous transport. This was initially presented within the frame of Coordinated Research Project of the International Atomic Energy Agency (Position sensitive detection of concealed substances employing pulsed slow neutrons. Second Research Coordination Meeting on Neutron Based Techniques for the Detection of Illicit Materials and Explosives, UN Internat. Atomic Energy Agency Coordinated Research Project) (Mayer b et al., 2007).

Through this means, contents of chlorine were identified and, with an array of fast neutron detectors, samples in the order of tens of grams of uranium-235 were detected (Tartaglione, Di Lorenzo & Mayer, 2009). At a later stage, isotopic neutron sources (^{252}Cf and Am-Be) were employed in order to review the observable gamma responses from the substances of interest. Although the available ^{252}Cf (10^4 n/sec approximately) neutron source is accompanied by a much cleaner gamma environment, its low emission rate resulted in the adoption of the higher intensity 1Ci alpha Am-Be source.

Several tests were carried out in order to optimize shielding and maximize signal to noise ratio (Fig. 2). Under these conditions, gammas induced by the neutron source in the surrounding environment partially obscure the signal from the sample.

As a result of this experimental review implemented with a semiconductor detector, regions of interest for each set of recorded gamma spectra were established as an identification of each tested sample. This has been a necessary step prior to the implementation in a pilot scale scanner with batteries of lower costs gamma detectors.

The irradiated samples were:

- Liquid Hg: prismatic sample 50 mm thick in a glass container.
- Analytical HgO: three 100 g commercial cylindrical containers.
- Analytical Cr: prismatic 400 g sample, 20 mm thick in a glass container.
- Cd: 0,9 mm thick sheet, 35 x 11 cm² area.
- Cl: prismatic 1000 g sample, 40 mm thick of sodium chloride.

For the purpose of these measurements, the original fast neutrons were moderated (slowed down) in paraffin and source gammas were shielded with lead. The semiconductor detector employed was a Ge(Li) with moderately high energy resolution.

Although irradiations with fast and epithermal neutrons were also made, in this work only the main results obtained with thermal incident neutrons are presented. The object of irradiation with neutrons of other energy ranges is to distinguish other useful signals that may help characterize each element.

Results

The identified gamma signals were checked with libraries (Reus & Westmeier, 1983) of typical emissions for each isotope.

In the graphs that follow gamma spectra are shown under two conditions, with the sample present in front of the neutron beam and without the sample. This second case constitutes the background signal (Bg) to be compared with the sample signal.

For the liquid mercury case (Fig. 3), two relevant low energy signals are visible, while the mercury oxide sample (Fig. 4) evinced only the 300 keV signal. This yields confidence to the fact that this last signal arises from the sample and not from any other spurious source, thus coinciding with previous results obtained with the electron linear accelerator as the intense neutron source.

Chlorine is an easily identifiable element due to the important number of different gamma energies it emits when exposed to a thermal neutron beam. Figures 5, 6 and 7 correspond to different energy ranges of a same measurement. There, the energies of the most relevant emissions are shown.

Neutron capture cross sections of chlorine and cadmium are very high for low energy neutrons.

In the particular case of cadmium (Fig. 8) a significant 450 keV emission appears, according to the approximate calibration implemented.

Characteristic signals from chromium have not yet been identified and arsenic has also not given conclusive results to this date.



Fig. 1. Experimental simulated cargo array irradiated with an accelerator neutron source. The neutron beam impinges from the right. The neutron panel detectors appear in each side of the image and on the left, a natural uranium fuel element is visible.



Fig. 2. Experimental set up for semiconductor gamma detector and isotopic neutron source. On the right, the Am-Be source contained in its paraffin moderator. On the left, the Ge(Li) detector surrounded by lead shielding.

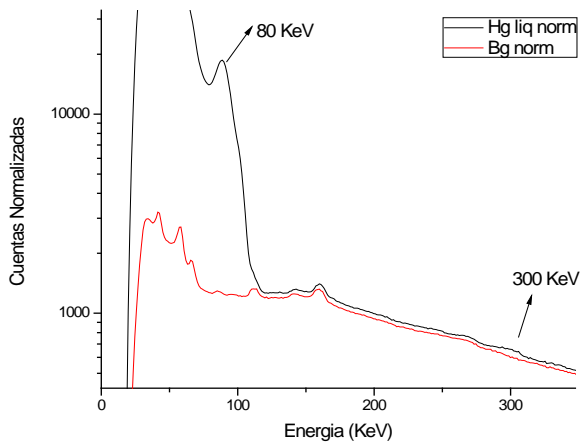


Fig. 3. Gamma spectrum. Sample: liquid mercury.

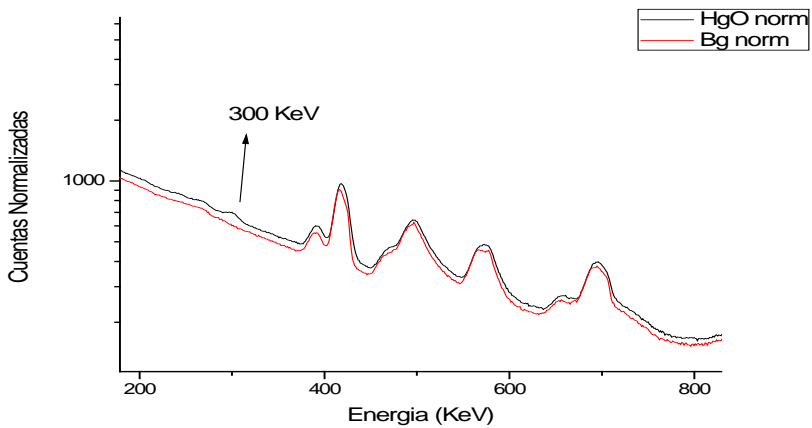


Fig. 4. Gamma spectrum. Sample: mercury oxide.

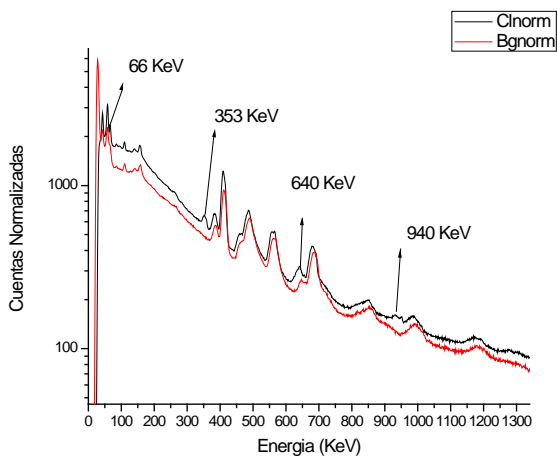


Fig. 5. Gamma spectrum. Sample: chlorine. Low energy.

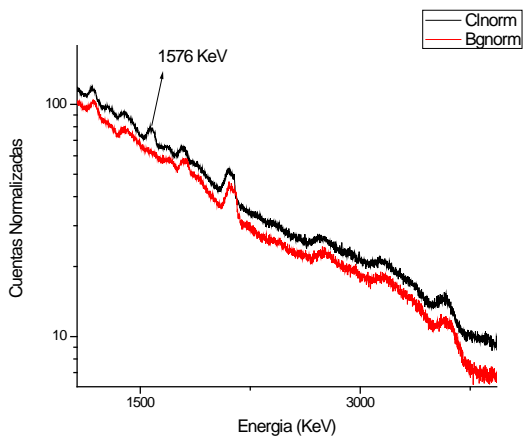


Fig. 6. Gamma spectrum. Sample: chlorine. Intermediate energy.

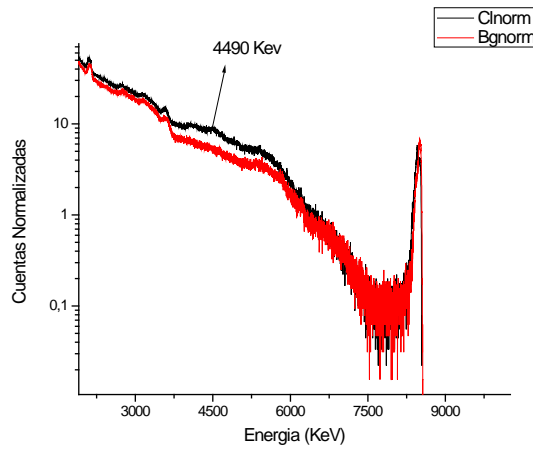


Fig. 7. Gamma spectrum. Sample: chlorine. High energy.

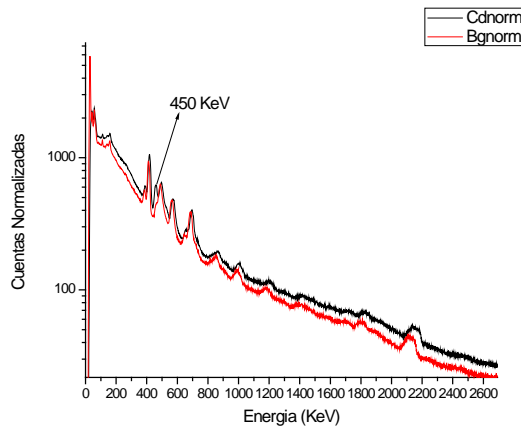


Fig. 8. Gamma spectrum. Sample: cadmium.

Final Remarks

The detection system employed in the preliminary measurements does possess a moderately high energy resolution, but its cost and operative conditions preclude its application in a real scale scanner. In the latter case, a battery of gamma detectors covering a wide solid angle would be mandatory and, thus, lower cost instruments operated at room temperature would become the choice.

Chlorine showed to be an easily identifiable element while mercury and cadmium could be detected with more difficulty in real cargo.

For the purpose of perfecting detection through neutronic tools, measurements with incident neutrons of different energy ranges continue to be done and thus, it is expected to produce a more complete experimental database to help identify substances of interest in the midst of a complex cargo array.

References:

Mayer, R. E., A. Tartaglione, J. J. Blostein, C. Sepúlveda Soza, M. Schneeбели, P. D'Avanzo, L. Capararo. Slow neutron interrogation for detection of concealed substances. Third Research Coordination Meeting on Neutron Based Techniques for the Detection of Illicit Materials and Explosives, United Nations Internat. Atomic Energy Agency (IAEA) Coordinated Research Project. Johannesburg, South Africa, 16-20 November 2009.

Buffer, A. (2004). Contraband detection with fast neutrons. *Radiation Physics and Chemistry*, 71, 853-861.

Sowerby, B. D., & Tickner, J. R. (2007). Recent advances in fast neutron radiography for cargo inspection. *Nuclear Instruments and Methods in Physics Research*, A 580, 799-802.

Mayer, R. E., A. Tartaglione, J. J. Blostein, M. Schneeбели, P. D'Avanzo, L. Capararo. Position sensitive detection of concealed substances employing pulsed slow neutrons. Second Research Coordination Meeting on Neutron Based Techniques for the Detection of Illicit Materials and Explosives, UN Internat. Atomic Energy Agency (IAEA) Coordinated Research Project. Mumbai, India, 12-16 November 2007.

Tartaglione A., Di Lorenzo, F., & Mayer, R. E. (2009). Detection of Thermal-Induced Prompt Fission Neutrons of Highly-Enriched Uranium: A Position Sensitive Technique. *Nucl. Inst. and Meth. in Physics Research*, B 267 (2009) 2453-2456, PACS 25.85.Ec 89.20.Dd

Reus U., & Westmeier, W. (1983). Catalog of gamma rays from radioactive decay. Part II. Atomic data and nuclear data tables. Volume 29, Number 2. Academic Press Inc.

<http://www-naweb.iaea.org/napc/physics/meetings/2nd-RCM-Working-Material/datasets/summary.html>

TECHNOLOGY TRANSFER: AN INTERDISCIPLINARY PROCESS

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Abstract

This article describes the importance of technology transfer process (TT) for public research institutions and its necessity to be planned from a research project design. It also presents a comparative analysis of technology transfer process between the Brazilian Agricultural Research Enterprise (Embrapa) and the Agricultural Research Service (ARS). Therefore, a descriptive study was conducted with the use of printed and electronic documents. Interviews were also developed with employees associated to this process in strategic and operational levels for both institutions. Results demonstrate that both institutions rely on a structured TT process. However, this process is more effective in ARS than at Embrapa. One of the most probable causes supports that the research model used in ARS is the reverse linear model (demand pull), which considers market demands in the development of research projects, while Embrapa works with the research linear model, where TT process begins only after obtaining the research result. The papers suggests, in order to make the TT process more effective, Embrapa could consider the demands of its targets audience and planning the TT actions where elaborating its projects conjoint.

Keywords: Technology transfer; Embrapa; ARS; Interdisciplinarity

Introduction

Agricultural technologies, according to Atkinson et al., (2003) present a special challenge for public institutions technology transfer

programs which must balance the technology commercialization objectives with humanitarian goals or applications for specialty cultures.

According to Pineiro (2007), agricultural activities have been developed, mostly by public institutions and universities, taking into consideration that many of the agricultural technologies and a great part of knowledge created had little market value. However, since the late 1970s, this scenario has changed. Agricultural technologies have become physical products, such as agricultural machines or pesticides. The exponential growth industries led to a fast expansion of private enterprises that create, manufacture and sell technology (Rubensteinand & Heisey, 2005; Pineiro, 2007).

These changes further complicated the mission of public research institutions, forcing the public sector to change and still keeping a main role in agricultural research. National research institutions are slowly trying to adapt to these new circumstances, redefining their positions and priorities.

For Rubensteinand & Heisey (2005), the agricultural technology transfer in public research system to the private system, represents, in theory, a way to do more with less. The transfer of public sector technology has several goals: to bring public R&D benefits to potential users, find ways for public institutions to pursue their mission in a scarce resources time, influencing the direction of technology development and increase research funds through licensing proclamations.

The Brazilian Agricultural Research Enterprise (Embrapa) is the main public institution of Brazilian agricultural research. Embrapa acts as a network, with 47 research units distributed in Brazil. In addition, coordinates the National Agricultural Research System (NARS).

The Agricultural Research Service (ARS) constitutes the leading agricultural research institution in the United States. ARS acts as a network with 4 regional research centers and 6 major centers of human nutrition research. Geographically, ARS operates in 8 regions in the country. Considering the importance of these institutions and the responsibility to find solutions for world agriculture, using public resources, it is extremely important they be supported on an efficient process to transfer their research results. Thus, the objective of this study is consists of to describe and analyze comparatively the technology transfer processes used by them. The paper is structured in five parts: the first one devoted to introduction, the second one for the importance of technology transfer process in public institutions. The third part presents a characterization of Embrapa and its technology transfer process. The fourth brings the same information to the Agricultural Research Service and the fifth part ends with papers conclusions.

The importance of technology transfer process in Public Research Institutions

According to Pallone & Wanda (2006) and Mello (2000), Public Research Institutions (PRIs) are designed to meet specific demands, becoming technological tools for socio-economic countries development, associated to government programs, which its social legitimacy occurs based on the efficient implementations of their public duties and the public perception for activities by means of society.

This point of view is supported by Muscio, Quaglioneb & Vallanti (2013), which consider there is growing awareness in industrialized countries about the importance of scientific research in the theoretical framework for a technological change and an economic competitiveness. Since the late 1970s, there was increasing pressure for universities and research institutes to develop industry research and establish closer links with the enterprise community (Muscio, Quaglioneb & Vallanti, 2013).

Chaimovic (2000) explains that science does not plan to, but that investment in science should be planned. The way that relates the discovery to invention is large, demand creation of new technology and requires huge investments. It is the production chain, and not knowledge, what determines the public investment option in technology and innovation. The limits of public investment research in PRIs - and therefore the separation of public knowledge to innovation - establish challenges which, will depends on the supply chain and need to be agreed with the strong participation of PRIs in the definition of investment policies.

Rapini et al., (2006) state that research carried out in PRIs and contribute to increased absorption capacity, establish links with international sources of technology, contributing to evaluate which technological developments are available and establish which industrial sectors entry is difficult. Furthermore, scientific research serves as a support for domestic industry, allowing entering in relevant industries for development.

The public research institutions develop their research following the standards of established research model. The most widely used model is the linear model and interactive model. In linear model, the development, production and commercialization of new technologies are seen as a well-defined time sequence, which originates in the research, involved in the product development phase and leads to the production and eventually marketing (Campos, 2006). In interactive model the linear sequence between research, development, production and marketing is just one of the innovation possibilities. The relationship between scientific and technological research follows several ways, and, unlike the linear model, innovations rarely start the search.

According to Schaun (1981), technology transfer is the consecration of all the energy used for the knowledge generation and the security of research validity, via technology adoption; hence why it is believed that among factors limiting the adoption of technologies generated, there is how to transfer them. Understanding this problem arguably is the need to consider the technology transfer process as an interdisciplinary process involving the relationship between the various actors in this process.

The possibility of the technology generated is not in agreement with the social system reality desired to be modified, it can be attributed mainly to the lack of integration between research-user (Wildner, Nadal & Silvestro, 1993). In addition, Fujisaka (1994) points as one of reasons, the fact that technology is a result of a poorly formulated research problem, that is, users do not face the problem that researchers assumed. This finding leads to the need of establishing a strong integration between the different actors involved in the process of technological innovation, aiming to make possible the technology adjustment to the conditions in production units (Tagliari, 1984).

In this context, Schwartzmann (2002) describes that we are facing an important paradox: Brazil spends most of its research resources in applied activities, but the results are not used or appear as they should appear. For Schwartzmann, this situation stems from a condition known as shelf research, where the search result never gets to turn into a marketable product or a practical operating procedure (Schwartzmann, 2002).

According to Rosa Neto (2006) the process of technological development, should be viewed as a whole, observing the adaptability conditions of access and interest of your target audience in order to identify the demands to facilitate the decision by research in relation to the generation/adaptation of new technologies.

Rosa Neto (2006) states that technological development the process, should be viewed as a whole, observing the adaptability conditions of access and interest of your target audience in order to identify demands to facilitate the decision by the research in relation to the generation / adaptation of new technologies. That's why; Dereti (2009) suggests the inclusion of technology transfer action plans, from the design of R&D projects to increase the transfer effectiveness, considering the participation of potential users and the identification of transfer opportunities for technologies developed.

The process of technology transfer at Embrapa

Technology transfer at Embrapa aims to provide the knowledge and technologies generated by research units to different society segments. The Department of Technology Transfer (DTT) was created with the aim of systematizing the TT strategies along the units. However, due to the

existence of other administrative units that coordinate some sub-TT this process does not have a central coordination.

The TT strategies at the institution are developed in a decentralized way by the research units, which develop them according to what they consider is the most appropriate.

The research at Embrapa is developed by its 46 decentralized units of research. Each unit researches a topic or product. The portfolio of each decentralized unit designs are created according to the rules and guidelines of the Central Unit. But the form and results of transfer methods are not centralized. Each unit has its own TT process.

The more shapes used by Embrapa for technology transfer are: Farm days, observation units, courses, conferences, technical and scientific publications, electronic media and partnership contracts.

The main forms of contract are: Use of licensing; Direct sale; Technical Cooperation; Service assessment; Consulting and Transfer Research Material.

For a better understanding of the process of technology transfer at Embrapa, semi-structured interviews were conducted with two crowded managers from the Department of Technology Transfer (DTT), unit responsible for part of the institution's technology transfer process.

According to respondents, the transfer can occur in both contractual way through publications, licensing, patenting, technical courses, conferences, demonstration and observation units, technology showcases, business plans, radio and TV programs and little libraries. These activities are developed in research units that generated the technologies or processes.

The technologies are licensed for production and marketing for interested partners, the private sector. Each research unit manages its own TT process.

All the research projects should be developed to meet the edicts of institution. Projects can be developed only by Embrapa or in partnership, but always in accordance with the topic research proposed by the institution. This procedure suggests the use of the linear model research, which can often result in technologies that do not meet demands of users. Normally, the future users are only consulted at the validation stage of technology.

The TT process is mostly directed to basic research. The Institution has encouraged the development of applied research, however, still has not reverse this reality. The reverse model of TT, search the market needs, which serves as idea generator to direct R & D. From an identified need in the market, a new process or product is developed, in order to meet the identified needs. Develop technologies to meet demands identified facilitates the transfer process of these technology and maximizes public resources for research.

The TT process was not considered effective by respondents, because it is done in a decentralized way and use of policy guidance or standardized rules. According to the interviewees, only a few units have technical and strategy to carry out this process efficiently. As stated before, although research units have a better understanding of its target audience, the lack of standardization for actions can lead to disjointed them among units professionals and headquarters, affecting the exchange of information and experience, and at the same time, provokes that Embrapa can be seen in a fragmented way for society.

In perception, no need to deploy some improvements in this process, in order to make it more efficient. The suggested improvements were: Development of a TT guiding policy; Definition of process governance; Redefinition of job profiles; Optimization of integration between R&D and TT; Identification of network demands for technologies and TT shares; Qualification and organization of knowledge and technologies by demands; Identifying best practices and strategies for TT and impacts evaluation for technologies, strategies, R&D program and technological developments in regions and territories.

For these improvements suggestions, it is noticed that the TT process is still in its initial phase at Embrapa Headquarters, which confirms the perception of Heberlê & Sapper (2007) that at Embrapa, it is not clear the relationship that involves the steps generation and technology transfer. This deficiency, combined with the lack of actors in rural areas in Brazil, can become a vulnerable spot for the institution.

On this basis, it is important for Embrapa to have an effective TT process so to reduce the time between the knowledge production and technologies and their availability to users. Based on the concepts of Eldred & McGrath (1997); Garnica & Torkomian (2009) and Schaun (1981), the transfer process success depends in a great way on clearly defined and managed TT methodologies. Thus, it is important that Embrapa could have a structured TT management process, with a clear definition of roles and responsibilities for all employees involved.

The technology transfer process in ARS

The transfer activity in ARS is coordinated and implemented by the Technology Transfer Office (TTO), which has the responsibility to obtain patent protection for the intellectual property, developing strategic partnerships with external organizations, and performing other results transfer activities research and technologies to market (ARS, 2013).

The TT program is centered on approval policies and procedures, and provides service to researchers through their coordinators of technology transfer, which make the link between researchers, managers, ARS, TTO,

partner universities and the private sector, and negotiate technology transfer agreements.

The technology transfer is performed by: technical publications, scientific papers and reports; plant germplasm liberation to the public; transfer of research materials for external researchers; formal partnership agreements; licensing, patents, plant variety certificates and biological materials protections; meetings with industry organizations and universities, workshops and farm days; and Personal Information.

Agreements with external, public or private organizations are made by contract. The main TT arrangements are used:

Confidentiality Agreement: It enables the exchange of confidential information and data between parts in order to verify the interest of a future research agreement or license.

Material Transfer Agreement: Guides the transfer of research materials between two organizations, without transferring ownership - the materials are only loaned to the scientist.

Cooperative Agreement R&D (CRADAs): Conjoint research with at least one non-federal partner with research capacity and availability of financial resources for research. Aims to create or improve a commercial product and includes the creation, protection and licensing of intellectual property related to the research effort.

Transfer Research Material Agreement: Allows materials transfer, without involvement of joint research between parts. It could take a deep study, to be conducted with a cooperative agreement of R&D.

For a better understanding of ARS technology transfer process, were conducted semi-structured interviews with 7 employees of the institution - 3 managers TTO and 4 researchers from different areas and locations.

According to respondents, the research results transfer, can occur either through a formal agreement or scientific activities, such as the presentation of papers in technical meetings, scientific publications, patenting, licensing, led by TTO.

Technologies developed by ARS are licensed for production and marketing to interested private sector partners. The TT process is managed through annual metrics that include formal agreements, publications and other technology transfer means.

Also according to the respondents, the majority of researches are done to meet the user's demands, which suggests that there will be difficulties in the TT process, since the technology was developed to meet an existing demand. In the case of research developed to meet the Government demand, users are consulted throughout the process, from start marketing in annual scientific meetings, formal and informal presentations, and through informal communication.

The TT process is directed to applied research. Basic research is carried out to a lower proportion. Leaders of the National Program constantly monitor the market needs and it has been taken into account for formulating research plans.

Respondents have different perceptions about the internal characteristics of the institution, contributing a good performance in R&D and Transfer. Taking into account the answers presented, we note that transparency, clear definition in objectives and the role of the institution, the structure and employees expertise are important elements to the good institutional performance

By means of answers presented, we can conclude that the process of technology transfer in ARS is well structured and has a strong central coordination. The technology transfer process begins with the research project, which projects are developed to meet user demands, a fact that facilitates the results transfer.

Conclusion

Although when Brazil and United States are two countries with different levels of economic, social and technological development, there is an evidence of some similar postures adopted by Embrapa and the ARS, the technology transfer process. Instruments used, both, formal (contracts) and informal (publications, conference, etc) are very similar. According to Araújo (1979), these instruments are more efficient in the communication process, because luring the citizen interest for technological advances, but do not lead to effective transfer and technology.

Technology transfer process begins at the time a project is developed. In this case, we conclude that this process is more effective in ARS, as it develops its projects to meet specific user's demands, while Embrapa serves primarily the guidelines of the institution or the Federal Government.

In this aspect, Croxton (1999), states that users need to be involved at all stages of technology development. Conventional approaches have focused very heavily on researchers and technical experts identifying problems and possible solutions and then trying to transfer them to agricultural environments. Croxton (1999) states that when there is the participation of users and local knowledge are used as a starting point, the probability of research result in technologies meet the needs prioritized by the users is much higher.

Siegel, Waldman & Link (1999) define that, as well as in Brazil, also in the United States public institutions have been criticized for being more adept at developing new technologies than transfer them to the private sector. According to authors, this can be a critical factor in maintaining global competitiveness of US enterprises. The private sector has expressed

frustration with the obstacles that prevent the marketing process, especially with disputes over intellectual property rights.

The technology transfer process is challenging and critical in public research institutions. It has been the focus to ensure that results of its R&D are available and accepted in the market. That reasons, suggests Embrapa, following the example of ARS, for strongly considering the user's demands in their research planning and includes TT actions when defining their projects, recognizing, with any doubt, that transfer technology process is an interdisciplinary process.

Having a structured process TT is important to Embrapa, which can identify more effectively the demands of the chain and thus develop projects aimed at meeting these demands and thereby legitimize itself increasingly in society.

References:

- Agricultural Research Service. (2013, March, 24). Plans & Reports, 2012-2017 ARS Strategic Plan. Retrieved from <http://www.ars.usda.gov/Aboutus/docs.htm?docid=1415>.
- Araújo, V.M. (1979). Estudo dos canais informais de comunicação técnica: seu papel na transferência de tecnologia e na inovação tecnológica. *Ciência da Informação*, 8(2): 79- 10.
- Atkinson, R., Beachy, R., Conway, G., Cordova, F., Fox, M., Holbrook, K., ...Young, Ch. (2003). Public Sector Collaboration for Agricultural IP Management. *Science*, 301 (5630): 174-175. doi: 10.1126/science.1085553
- Campos, A. (2006). Ciência, tecnologia e economia. In: Pelaez, V., & Szmrecsányi, T. (Eds.), *Economia da inovação tecnológica* (pp. 201-243). São Paulo, Brasil: Hucitec, Ordem dos Economistas do Brasil.
- Chaimovich, H. () Brasil, ciência, tecnologia: alguns dilemas e desafios. *Estud. Av., São Paulo*, 14(40): 134-143. doi:10.1590/S0103-40142000000300014.
- Croxton, S. (1999). Users in control: farmer participation in technology research and development. In: Starkey P., & Kaumbutho P. (Eds), *Meeting the challenges of animal traction. A resource book of the Animal Traction Network for Eastern and Southern Africa (ATNESA)* (pp. 45-50). Harare, Zimbabwe: Intermediate Technology Publications.
- Dereti, R. (2009). Transferência e validação de tecnologias agropecuárias a partir de instituições de pesquisa. *Desenvolvimento e Meio Ambiente*, n. 19, 29-40.
- Eldred, W., & McGrath, M.E. (1997). Commercializing new technology I. *Research Technology Management* 40(1): 41-47.
- Fujisaka, S. (1994). Learning from six reasons why farmers do not adopt innovations intended to improve sustainability of upland agriculture.

Agricultural Systems, Barking, 46(4): 409-425. doi:10.1016/0308-521X(94)90104-N

Garnica, L.A., & Torkomian, A.L. (2009). Gestão de tecnologia em universidades: uma análise do patenteamento e dos fatores de dificuldade e de apoio à transferência de tecnologia no Estado de São Paulo. *Gest. Prod., São Carlos*, 16(4): 624-638.

Heberlê, A.L., & Sapper., S. (2007, April, 24). Impasses entre mediação e intercâmbio tecnológico na Embrapa. Retrieved from http://www.jornalismocientifico.com.br/revista/05/artigos/artigo_antonio-heberle_e_sadi-sapper.pdf

Mello, D. (2000, February, 3). Análise de processos de reorganização de institutos públicos de pesquisa do estado de São Paulo. Tese (Doutorado em política científica e tecnológica) - Instituto de Geociências. Campinas, Universidade Estadual de Campinas, SP. Retrieved from http://www.ige.unicamp.br/geopi/documentos/tese_debora.pdf

Muscio, A., Quaglione, D., & Vallanti, G. (2013). Does government funding complement or substitute private research funding to universities? *Research Policy*, 42(1): 63-75. doi:10.1016/j.respol.2012.04.010

Pallone, S., & Wanda, J. (2006). Futuro das Instituições de Ciência e Tecnologia é incerto. *Inovação Uniemp*, 2(2): 6-9.

Pineiro, M. (2007, January, 1). Agricultural technology transfer to developing countries and the public sector. Retrieved from <http://www.scidev.net/global/policy-brief/agricultural-technology-transfer-to-developing-cou.html>

Rapini, M., Albuquerque, E.M., Silva, L., Souza, S., Righi, H., & Cruz, W. (2006). Spots of interaction: an investigation on the relationship between firms and universities in Minas Gerais, Belo Horizonte: UFMG/Cedeplar, 47 p.

Rosa Neto, C. (2006). Principais demandas dos técnicos da extensão e de produtores rurais acerca do processo de inovação tecnológica de uma instituição de pesquisa agropecuária. Série Documentos. Porto Velho: Embrapa Rondônia, 20 p.

Rubenstein, K.D., & Heisey, P.W. (2005). Can Technology Transfer Help Public-Sector Researchers do More with Less? The Case of the USDA's. *Agricultural Research Service. AgBioForum*, 8(2e3): 134-142.

Schaun, N. (1981). *Difusão de tecnologia no Centro Nacional de Milho e Sorgo*. Sete Lagoas: EMBRAPA/CNPMS.

Schwartzman, S. (2002). A pesquisa científica e o interesse público. *Revista Brasileira de Inovação*, 1(2): 361-395.

Siegel, D., Waldman, D., & Link, A. (1999). Assessing the impact of organizational practices on the productivity of university technology transfer

offices: an exploratory study. *National Bureau of Economic Research Working Paper No. 7256*: 1-46. doi: 10.3386/w7256

Tagliari, P.S. (1984). Analysis of the communication linkages between the research and extensions agencies and evaluation of the research publications in the State of Santa Catarina, Brazil, M.Sc. thesis (Master of Science Agricultural Journalism). University of Wisconsin, Madison, 207 p.

Wildner, L.P., Nadal, R., & Silvestro, M. (1993). Metodologia para integrar a pesquisa, a extensão rural e o agricultor. *Agropecuária Catarinense*, 6(3):37-47.

USES AND PERCEIVED BENEFITS OF GREEN SPACES IN BUENOS AIRES

USOS Y BENEFICIOS PERCIBIDOS EN ESPACIOS VERDES EN BUENOS AIRES

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Abstract

Urban green spaces provide a full range of community benefits (physical, environmental, psychological and social) but some parks types appear differentially important in providing certain benefit types. In this study we analyzed quality and perception of two parks and two plazas in Caballito and Flores neighbourhood (Buenos Aires city). We used the green flag index for green spaces' quality and interviews (n:232) to explore people's perception asking 10 questions, four referred to public spaces in general and six referred to the selected green spaces in both neighbourhoods. Results showed that parks and plazas are valued spaces, different visited by residents or by people coming elsewhere attracted by high-quality green spaces. Our findings showed that size and the offer of activities/infrastructure play a role in how a green space is used and how different benefits are recognised and perceived.

Keywords: Parks, plazas, quality, benefits

Resumen

Los espacios verdes urbanos proveen de un amplio rango de beneficios (físicos, ambientales, psicológicos y sociales) pero algunos tipos de parques son aparentemente más importantes en la provisión de ciertos beneficios. En este estudio se analizó la calidad y la percepción en dos parques y dos plazas de los barrios de Caballito y Flores en la ciudad de Buenos Aires. Se aplicó el índice de Bandera Verde para estimar la calidad y encuestas (n:232) para explorar la percepción de los usuarios por medio de

10 preguntas. Cuatro de ellas indagaban sobre el espacio público en general, seis sobre los espacios verdes seleccionados en particular. Los resultados indican que las áreas verdes son sitios valorizados, utilizados de diferente manera por los residentes o gente proveniente de otros lugares, atraída por la calidad de los espacios. Se observó que el tamaño y la oferta de actividades/infraestructura jugaba un rol importante en cómo se usa y en cuáles beneficios se reconocen y perciben.

Palabras claves: Parques, plazas, calidad, beneficios

Introduction

Latin-America is the most urbanized region of the world. More than 80 % of the population in Latin America lives in cities, and by 2050 the number is expected to reach 90 % (ONU-HABITAT 2012). The majority of the planning systems in this region has been inherited from the previous colonial time or adopted from Northern contexts (Watson 2008). The resulted design with uneven service provision has often been retained (Buchler 2003) and coupled with rapid urbanization, which has led to the fragmentation of public spaces. Carr et al. (1992) defined public space as “open, publicly accessible places” that facilitate the popular activities necessary for community building. Public space – streets, squares, plazas and parks- are under immense pressure and are often inadequate, a reason why city councils in these times are concerned to create inclusive, healthy and functional public spaces.

One of the most conspicuous characteristics of Latin America cities exhibit great social and economic differences (ONU-HABITAT 2012). The structures of inequity go beyond differences in income and housing standards, to also include an uneven distribution of green space availability and quality (Pauchard and Barbosa 2013).

Parks have been significant sources of open space in urban history, ranging from private, even sacred spaces to fully public spaces serving as central points of social interaction and recreation (Stanley et al. 2012). On any day or weekend many thousands of people spend several hours outdoors in their local park simply living their lives. As well as the explicit ‘reasons’ why people visit parks (take children, walk, play, or practice some sport), they are also places for solitude, places to think or talk things out, or where people go just to change the pace of life and relax (Greenhalgh and Parsons 2004).

Public green spaces (GS) across Latin America (LA) have traditionally been favourite meeting places for people from all walks of life and all ages, as places associated with air, light and nature, as well as culture and multiculturalism. Today, more than ever before and in common with the

rest of the world, they cater to a wide range of needs and provide society with social, environmental and economic benefits (Faggi et al 2015).

In Buenos Aires, as in many cities around the world, parks and plazas have been designed as sites of aesthetic reflection or for specific social practices following a “top-down” planning (Stanley et al. 2012). While parks while are large and contain a multifaceted green infrastructure, plazas are open space framed by buildings on most sides and usually hard surfaced. Both can host a diversity of civic activities and tend to be multi-purpose (Stanley et al. 2012). In Buenos Aires, by the late nineteenth century, green spaces began to be relevant urban areas in social life. Large public parks arose under the influence of French and English landscaping models coinciding with the hygienist movement in its attempts to relieve the burden of urban living. These transformations in the urban matrix produced large changes in Latin American cities that gradually departed from their colonial past, with tiny dry plazas between blocks, to striking landscaped big parks playing a central role as places for social integration (Faggi and Ignatieva, 2009).

This study explored the benefits perception in green spaces in two representative neighbourhoods of Buenos Aires city. Our aim was to explore how green spaces users in the Caballito and Flores neighbourhoods perceived their present condition and envisaged the potential improvement.

In particular, the authors wanted to examine (1) which benefits were provided by parks and plazas, and (2) if the uses were influenced by the size of the green spaces and the place of residence of the users.

This research constitutes a step forward in the better understanding of public perceptions of green spaces to provide useful information for advice as to whether there is sufficient choice and mix of provision to satisfy the target users.

Methodology

Study area

Caballito and Flores are middle class densely populated neighbourhoods, centrally located in the federal city (Table 1). Parts of the neighbourhoods are quiet, leafy residential areas, while others are bustling commercial hubs. Both neighbourhoods are crisscrossed by avenues and a railway. In Caballito there are three major public parks and five small plazas; in Flores there are only nine plazas. In both cases fragmentation disconnect these public spaces, which results in the isolation of the available tracts of green space.

Table 1 Characteristics of Caballito and Flores Neighbourhoods and the studied green spaces

Neighbourhood	Caballito	Flores
size	6.8 km ²	7.8 km ²
population	170.309	142.695
density	25.045	18.294
Nr. Parks	3	0
Nr. Plazas	5	9
Studied area	Parks	Plazas
Area	Centenario: 12 ha	Pueyrredón (1ha)
	Rivadavia: 6 ha	Misericordia (1ha)
Green Flag Value	Average score:	Pueyrredón: 5.6 (fair)
	Centenario Park: 7 (good) Rivadavia Park: 6.3 (fair)	Misericordia: 3.3 (poor)

Data collection and analyse

This exploratory study was conducted during 2013 and 2014 in two parks: Centenario and Rivadavia, in Caballito and two plazas: Pueyrredón, Misericordia in Flores. (fig.1)

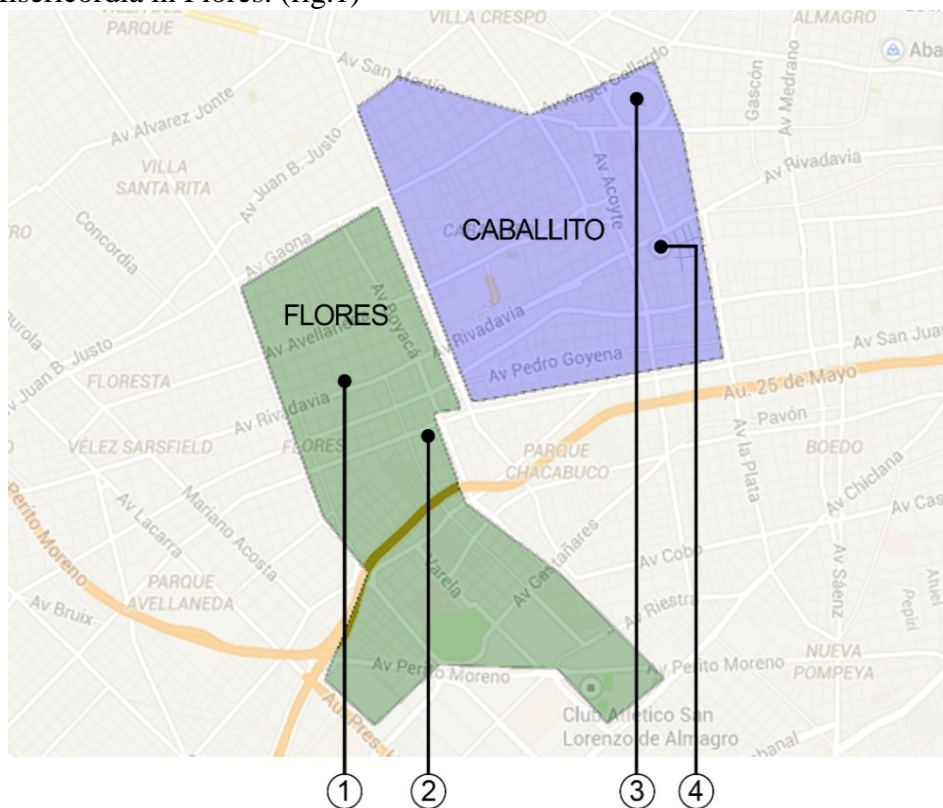


Fig.1. plazas: (1) Pueyrredón, (2) Misericordia in Flores; parks: (3) Centenario and (4) Rivadavia, in Caballito

Plazas in Flores are neighbourhood green spaces as they are smaller areas (1 ha) which tend to serve only local residents. Parks in Caballito are larger areas, between 2 and more hectares which people travel to visit (district green spaces) attracted by their scenic qualities and activities taking place.

Quality of the green spaces was estimated by using the Green Flag Index (Greenhalgh and Parsons 2004). This Green Flag Value is a measure of quality relating to the management, operation and improvement. It incorporates what is currently considered good practice over the range of the eight main criteria against which every green space will be judged.

These criteria which are valued along a scale out of 10 are: 1) A welcoming place, 2) Healthy, safe and secure, 3) Well maintained and clean, 4) Sustainable, 5) Conservation and heritage, 6) Community involvement, 7) Marketing. The scoring line is as follows: 0-1 very poor; 2-4: poor; 5-6: fair; 7: good, 8: very good, 9: excellent, 10: exceptional. In our study we estimated the average score.

To explore people's perception in total 232 surveys were randomly administered by intercepting people randomly in the green spaces, and asking them to take part in the survey. Face to face interviews by means of questionnaires were carried out over a three month period from the end of summer through autumn in two parks in Caballito (n: 100) and two plazas (n: 132) in Flores neighbourhood. Interviews were conducted on both weekdays and weekends between during the day. The data they provided was collected and analysed regardless of they lived in the case study area or not. Respondents were asked 10 questions, four referred to public spaces in general and six referred to the selected green spaces in Caballito and Flores. In addition, basic socio-demographic data was collected (age, gender, working status, place of residence).

Results

As the Green Flag values showed parks in Caballito had a better infrastructure than the plazas. Facilities were well maintained and there was a better management of natural features (Parks: 6-7; Plazas: 3,3-5,6) (Fig 2.)





(Fig.2 – Park Centenario; Plaza Misericordia; Plaza Pueyrredón; Park Rivadavia)

The respondents were nearly evenly divided, while females making up 55% and males the remaining 45%. In Caballito, those aged 26-35 years made the largest group of all respondents, unlike in Flores plazas' visitors were evenly distributed (16- 25 years:19%, 26-35 years: 24%, 36-50 years:17 %, 51-60 years:19.7% , 51-60 years: 17%). Of the respondents interviewed in Caballito only 20% live in the case study neighbourhood, while in Flores local residents account to 71% of respondents.

Of those interviewed, the majority (Caballito:70%, Flores 85%) have outdoor space in their homes. Balconies made up the largest proportion of domestic outdoor spaces (38%) in Caballito followed by patios (32%). In Flores patios were more important (29%) followed by balconies (25%) and terraces (16%). Roughly half (54%) in Caballito and 34% in Flores used daily the outdoor space in their homes.

Interestingly, the majority (58%) of respondents believed there are enough neighbourhood green spaces in Caballito, demonstrating ignorance of what happens there. On the contrary in Flores 66% considered that green spaces are insufficient.

When asked about the benefits of green spaces in general (Fig. 3), most respondents in Caballito opted for social interaction (39%), followed by physical activity (32%) In Flores psychological benefits (36.5%) scored first, followed by social interaction (31.7%). Strikingly in Flores, 10 % of the people believed green spaces offer no benefits; 77% of them were men and almost the half young (16-25 years).

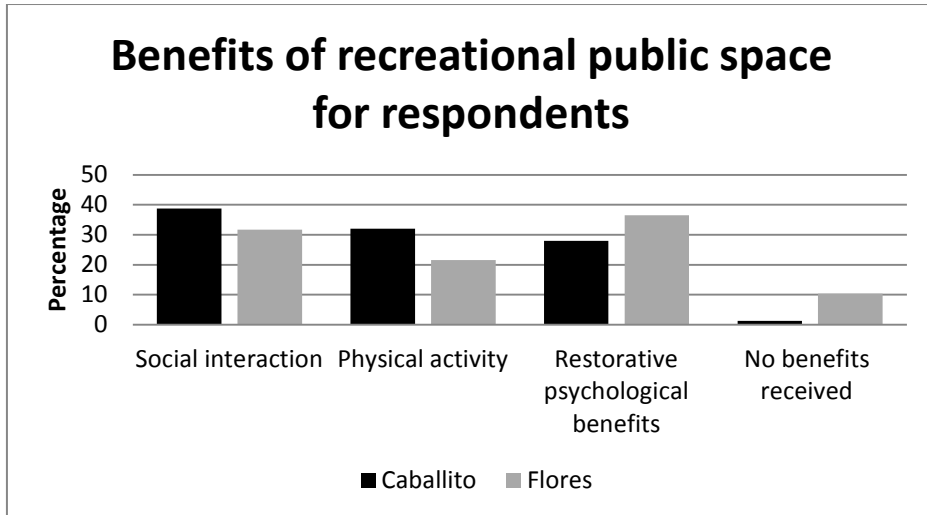


Fig. 3. Benefits of recreational public space for respondents interviewed in Caballito and Flores neighbourhood

Respondents' top three uses of public green spaces (Fig.4) confirmed their answers to questions on important elements in parks and plazas and the benefits perceived. As Fig 3. shows in Caballito there are some significant differences in preferred uses of the compared neighbourhoods. Parks in Caballito are preferred for the practice of sports (run, yoga, aerobics, ride a bike) and recreational activities, while plazas in Flores are devoted to relaxation, to walk or stroll and for other psychological benefits. We found no differences between parks and plazas by benefits like social interaction or to breath frish air.

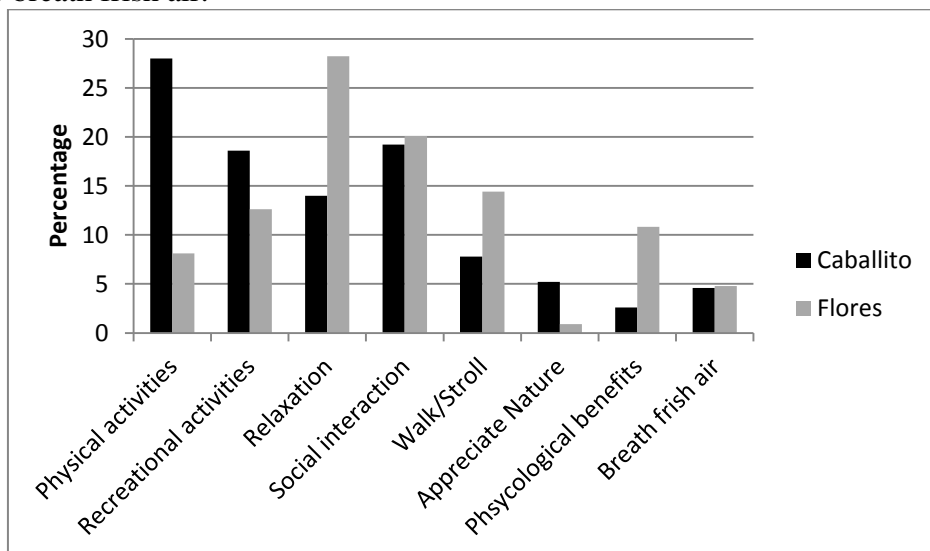


Fig 4. Respondents' top three uses of public green space in Caballito and Flores neighbourhoods

Antisocial behaviour like broken glass, vandalism leads (P:56%, PZ:65%) as one of the threats and weakness respondents considered to be the major in parks (P) and plazas (PZ), together with incivilities (dog mess, drug/alcohol abuse) (P:51%, PZ:67%) lack of amenities (P:42%, PZ:26%), poor maintenance (P:40%, PZ:45%) and a lack of recreational facilities (P:27%, PZ:23%).

Discussion

Results showed that parks and plazas are valued spaces, although many of the respondents have the possibility to use daily the outdoor space in their homes. What is it that makes someone feel attracted to a park or a plaza? As stated by Greenhalgh and Parsons (2004) people have many reasons for visiting them. Parents want somewhere to take children to play in spaces closed to their homes (plazas) or to those parks more distant but well equipped with games infrastructure. As the results showed, in the Caballito parks, the majority of those using green areas are not being residents within the neighbourhood itself, but people coming elsewhere attracted by high-quality and safe green spaces. The prominence of outsiders was also confirmed by interviewed locals, who generally expressed a dislike of the influx of those from further afield, also associated with antisocial behaviour and incivilities. Caballito neighbours complained that the many activities, which are taking place attempt against the calmness wished by them especially in the weekends.

In Buenos Aires for the last 10 years, municipal authorities have set up a green spaces revitalization programme and established a multi-faceted strategy to make the green spaces more attractive. These actions aim at guaranteeing good, easily accessible places for social interaction, for walk or sports, or simply to come close to nature. They also intend to promote a healthier life through the practice of sport and the prevention of illnesses. Outdoor gyms free to use have been set up in several parks in order to increase the number of people getting physically active. They contain high quality fitness equipment suitable for people of all ages. In addition, professional instructors give a wide range of aerobic, yoga classes and different recreational activities (Faggi et al. 2015). These new activities were added to the traditional existing ones such as street markets, music and various shows.

As stated by Brown et al. (2014) urban green spaces provide a full range of community benefits (physical, environmental, psychological and social) but some parks types appear differentially important in providing certain benefit types. To meet friends, experience an organized and entertaining scene or to get out of the house to breath fresh air did not seem to be linked to the size of the green spaces, as these services were same

mentioned for parks and plazas. On the contrary, physical and recreational activities which are place demanding, can best be set up in larger parks, as our findings showed (Physical activities in parks: 28 %, in Plazas: 8 %).

To appreciate Nature could also be linked to larger sizes. In some countries people may want to enjoy plants, flowers, trees and much is invested by the city council to satisfy these demands. Our results showed that in both cases, green infrastructure was not so much mentioned in the interviews. It seems that in Buenos Aires green spaces are more perceived for recreational and social services than as places to conserve or appreciate biodiversity. However, we believe that “appreciating Nature” was masked in the concept of “relaxation”, which occupied an important place in the scale of benefits. Recent studies (Hartig and Staats 2006, Van den Berg et al. 2007) have shown that to “see green” can reduce domestic violence, quicken healing times, reduce stress, bringing psychological benefits in individuals (Ulrich 1984, Kaplan and Kaplan 1989). As stated by Tidball (2012) “seeing green” (plant- people –interactions) implications for human health and well-being appear to be well documented.

Regarding size, on the contrary to parks, plazas were mentioned as ideal places somewhere to go for a relaxing walk, to read and rest (psychological benefits). This is in coincidence with Nordh and Østby (2013), who found that in Oslo small parks best fit for relax and philosophize, to read, or eat/drink. This statement can be related with the fact that plazas are calmer places best to experience an undisturbed peacefulness, to be on one' own, as there do not exist the multiple activities that are frequently offered in the parks especially at weekends.

Conclusion

Our findings showed that size and the offer of activities/infrastructure play a role in how a green space is used and how different benefits are recognised and perceived.

As around the world there are now many different pressures and conflicting demands on parks and green spaces from environmental demands to sports, leisure and general recreational uses. Similarly, it is common to find a wide range of interdisciplinary work which include interdisciplinary professional expertise, from landscape designers, ecologists, foresters, grounds maintenance staff, to play workers and health workers, all wishing to adapt and use a green space for different purposes (Greenhalgh and Parsons 2004). A management plan which takes into account in first line the needs and desires of the people can play the best role to the benefit of the site and the people it serves.

References:

- Brown, G., Schebella, M.F., Weber, D.(2014). Using participatory GIS to measure physical activity and urban parks benefits. *Landscape and Urban Planning*, 121, 34-44.
- Buchler, R. (2003). Urban development in Mega-Cities in Developing Countries Potentials of Citizen Participation in Planning and Managing Urban Development. Universität Konstanz, Germany.
- Carr, S., Francis, M., Rivlin, L. G., and Stone, A. M., (1992). Public Space. Cambridge, UK: Cambridge University Press.
- DGESC, EN BASE A DATOS CENSALES, AÑO 2001. <http://www.buenosaires.gob.ar/laciudad/barrios>
- Faggi, A. And Ignatieva, M. (2009). Urban green spaces in Buenos Aires and Christchurch. *Municipal Engineer*, 162 (4), 241-250.
- Faggi, A., Nail, S., Ceres Sgobaro Zanette, C. and Tovar Corzo, G. (2015). Latin America and the environmental health movement. In: Bird, W. and Van den Bosch, M. (eds), "Nature and Public Health: The Role of Nature in Improving the Health of a Population". Oxford University Press (In press).
- Greenhalgh, L and Parsons, A. (2004). Raising the Standard The Green Flag Award Guidance Manual 2009. Cabe.
- Hartig, T. and Staats, H (2006).The need for psychological restoration as a determinant of environmental preferences. *Journal of Environmental Psychology* 26(3):215-226.
- Kaplan, R. and Kaplan. S. (1989). The experience of Nature: a psychological perspective. Cambridge University Press, Cambridge, UK.
- Nordh, H. and Østby, K. (2013). Pocket parks for people – a study of park design and use. *Urban Forestry and Urban Greening* 12(1):12-17.
- ONU-Habitat (2012). Estado de las ciudades de América Latina y el Caribe, 2012. Rumbo a una nueva transición urbana. www.onuhabitat.org
- Pauchard, A. and Barbosa, O. (2013). Regional Assessment of Latin America: Rapid Urban Development and Social Economic Inequity Threaten Biodiversity Hotspots. Chapter 18 In : T. Elmqvist et al. (eds.), Urbanization, Biodiversity and Ecosystem Services: Challenges and Opportunities: A Global Assessment, DOI 10.1007/978-94-007-7088-1_28.
- Stanley, B. W., Stark, B. L. Johnston, K. L., Smith M.E. (2012). Urban open spaces in historical perspective: a transdisciplinary typology and analysis. *Arizona State University Urban Geography*, 33(8),1089–1117. <http://dx.doi.org/10.2747/0272-3638.33.8.1089>
- Tidball, K.G. (2012). Urgent Biophilia: Human-Nature interactions and biological attractions in disaster resilience. *Ecology and Society* 17(2):5.
- Ulrich, R.S. (1984). View through a window may influence recovery from surgery. *Science* 224:420-421.

Van den Berg, A.E., Hartig, T. and Staats, H (2007), Preference for nature in urbanized societies: stress. Restoration and the pursuit of sustainability. *Journal of Social Issues* 63(1):79-96.

Watson, V. (2009). Seeing from the South. Refocusing urban planning in the globe' s central urban issue. *Urban Studies* 46, 2259-2275.

COMMON PERCEPTION OF CHINESE COOPERATION IN AFGHANISTAN

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Abstract

In the article I will try to define Chinese macro-strategy in investing in Afghanistan. Then, analyzing data collected on the field with an interview, I will try to examine Afghan perception of Chinese presence. After data analysis I will try to establish if Chinese strategy is useful to the picture that China wants to show of its presence in Afghanistan and what are the possible correction for making it much efficient.

Keywords: Afghanistan, China, reconstruction, post-NATO intervention

Introduction:

China is strongly present in Afghanistan from 2002, just after the fall of *taleban*. China, without any military involvement either in ISAF or “Enduring Freedom “, took immediately part in a team of nation to rebuild Afghanistan. China participated to all the International meetings on Afghanistan (Bonn 2001, London 2006, Paris 2008, The Hague 2009, Bonn December 2011). China also hosted in Tianjin the Istanbul Ministerial Process, the major regional meeting between Afghanistan and its neighbors in 2014, assuming an higher profile in shaping the future of Afghanistan (Zhao, 2015).

China motivation in staying in Afghanistan can be considered through two possible interpretations. The first is the realistic interpretation (based on the assumption that China is attracted just by the Afghan resources), the second is security-leaded interpretation (improve Afghanistan security and disrupt terroristic groups linked with extremist groups operating in China to create a solid economic cooperation).

During my last mission in Afghanistan (March-October 2011) and thank to two of my collaborator that collected interviews for me (between September 2012 to December 2014) I realized a collection of Afghan perception of China intervention at various level (population, regional government, Kabul governmental). The interview submitted is composed by three simple and direct questions: What do you know about China presence

and initiatives in Afghanistan, do you think they are useful to Afghanistan too or just for China? What you think about Chinese presence: is it going to enrich Afghan and its population (in any way) or not? Do you think China presence in your country is it going to increase in future and you think is this a positive or negative factor? We submitted interview to a number (4873 subjects) of population in the provinces of: Herat, Kabul, Helmand, Badghis and Kandahar.

In the article I will try to explain the main motivations of China permanence in the Islamic Republic of Afghanistan and, analyzing the data collected on the field, asses if there is correspondence of analysis and what perceived from population. I will try to demonstrate if China joined its objectives with a positive perception of its soft power or a negative one and to delineate what could be the better adjustments to do to its staying in the area for better achieving its goal to maintain its soft-power picture. Afghan perception of China presence is fundamental for three main reasons. First of all Afghanistan is facing an intensive democratization process based also on ethnic integration. A negative perception of China presence could feed tension among ethnic groups, some of them more opened to integration with Chinese people, some of them are more narrow. A second motivation for which a positive image of China it's really important in country's future is that a negative picture could be used by extremist groups to strengthen their positions. Looking to China point of view we find the third reason for considering common Afghan perception of Chinese presence so important. China is basing its international policy on the soft-power concept of peaceful rise and to be seen as an hegemonic/imperialist power in a first impact scenario for international public opinion (as it is Afghanistan of post-NATO intervention) could have a really negative impact on its image. In some areas (as emerging from interview) China interest in resources exploitation and economy in general find the direct concurrence of Iran (strongly present in Herat and Farah provinces with FDI in particular) (Zonis, 2015). Soft-power field will probably where there will be major competition between Iran and China to obtain particular relations with Afghan economy of post-war period.

In my analysis I will try to assess if China presence in Afghanistan is really based on soft-power, and explain in which cases this is successful and in which not. I will try as well to define what could be better improvements for this strategy and so what we should expect from PRC on the next years.

I.:

At the end of military intervention in Afghanistan China has become the third country for volume of investments. Since 2010 China started to increase investment in Afghanistan. In 2013 China presence in Afghanistan

can be assessed in a total of: 2,9 billion of USD invested in mineral sources extraction and 400 million of USD invested in energy production (mainly exported to China)ⁱ China's most notable efforts include a \$3.5 billion project for the development of the Aynak copper mine in Logar Province and all the infrastructures (transport and electricity-generating facilities) (Heritage Foundation, 2015). That is the largest foreign direct investment in Afghanistan's history. Investments in mines have been realized under the aegis of Afghan Ministry of Mines Wahidullah Shaharani. China's biggest part of investments are concentrated in mines and facilities regarding them.

By the 2015 NATO withdraw from Afghanistan it has almost completed but Afghanistan is still not self-sufficient and, as reminded by Afghan officials in various occasions as President Ashraf Ghani did on 18 September 2014. Afghanistan also signed on 30 September 2014 for the permanence of 9800 US soldiers and 2000 NATO soldiers.

China presence can be considered essentially through two factors: realistic, and based on security motivation.

The first factor is motivated by the China needs of power and natural resources. This factor is especially highlighted by China investments in mines and oil plant. Afghanistan has abundant non-fuel mineral resources, including a wide variety of minerals ranging from copper, iron, and sulfur to bauxite, lithium and gold. China invested in copper mines like Mes Aynak in Logar Province and Aybak in Samangan and is looking for new, available resources sites (Downs 2013).

The second factor of PRC presence in the Islamic Republic of Afghanistan is to create economic and political conditions to avoid a future reborn of an extremist government (like *Taliban*) in Afghanistan. Political stability will be required for economic stability of Afghanistan and would give to China a more reliable partner in economic relationships. In effect China and Afghanistan border for few kilometers but that border has been a chokepoint for passage of Islamic extremists (Ramannullah, 2010). China presence in Afghanistan is largely motivated by Chinese Communist Party concern over the stability of Xinjiang Region. That region, in Turkic definition named "East Turkestan" is the biggest threat to the stability of China coming from inside, while Afghanistan can be considered as the most impellent threat from outside. During *taleban* regime Afghanistan became a reliable safe haven for extremist coming from Xinjiang and a base for "East Turkestan" organizations. The *Taliban* were the spiritual agitator and material supplier for "East Turkestan" extremists. There are not yet certain indicators on how many extremist fled from China to Afghanistan to find a safe haven or to be trained and to fight in Afghanistan from 1996 to 2001 and from 2001 to current day but they seems to be around thousands. So, as natural, any kind of interpretation has to take in consideration economic

motivations: first one as just resources exploitation or (second one) as the try to build a stable and reliable economy to cooperate with. The last interpretation is also the broader one and provide a more complete view of Chinese policy. In fact, in this vision China considers primarily the importance of its presence in Afghanistan as a stabilizing element to keep on exploit afghan mineral sources and, at the same time, is aware that giving chances for an economic development to a friendly government is going to reduce extremist fall-out in the country.

So the second explanation, sustained also by an amount of bibliography (Gries, 2015, Keller & Rawsky, 2015, Yuan, 1999, Breslin, 2010, World Bank 2010) is the most complete and probably the best to be taken in account trying to examine the perception of Chinese permanence in the area. Mechanism of increasing the presence and increment investments motivating them with a safety explanation too is important also in the building of Chinese smart power. China is asserting in its international relations to be a power in a 和平 发展 (peaceful development) starting from Hu Jintao Era. All the new Chinese Diplomacy is based on that concept of Peaceful Power and so it's really important for PRC that every kind of Chinese foreign action is justified with peaceful motivations.

Following this interpretation of Chinese behavior in the Islamic Republic is deeply linked to Afghan perception of China presence. In fact, as explained in the introduction, a bad perception of Chinese presence by Afghans could increase the risk of worsening the governance and increase extremism. A negative view of China behavior in a first media impact situation as post-NATO Afghanistan is could also seriously damage the Chinese peaceful power general picture (Wo-Lap Lam, 2010).

I collected data during my last ISAF mission deployment in 2011 and thank to some my colleagues employed in Afghanistan in 2012, 2013 and 2014. We started to interview people from September 2011 (when Chinese presence in Afghanistan was already shaped) until 2015.

We managed to interview three officials from Kabul government, 13 people from Regional Government of Herat and 4873 subjects from population of the following provinces: Herat, Kabul, Helmand, Badghis and Kandahar. For clear cultural reasons around 90% of interviewed people were men. The difficulties that I faced in the field to interview women were bypassed (when it was possible), asking the elder representing the community or to a relative to be means of communication between female interviewed and interpreter. Shortage of women interviewed is mitigated from the not primary role that they have in Afghan political world. Unfortunately in the Islamic Republic of Afghanistan women have still not a substantial equality of rights with men and in terms of policy and public opinion influence men's point of view is much more relevant.

For the officials interviewed (central and regional governments) out of a total of 16, six were from Hizb-ut Tahrir Party (a really strong Islamic party), two represented the Wahadat Islami (another Islamic semi-radical force), four from Jumhuri Afghanistan (a Republican moderate forces) and four (in Herat provincial government), were part of regional movement. I tried to give the larger picture I could of the various movements, taking in account difficulties and obstacles in interviewing people.

Ethnic issue is also a first importance aspect, Afghan ethnic composition is based in two main groups: Pashtun (43% of population) and Tajik (around 16%), five less numerous (Hazara, Uzbek, Aymak, Turkmen, Baloch) and a large number of minorities (Pashai, Nuristani, Arabs, Pamiri ecc.). Traditionally Pashtun, a fierce population based on tribal uses and particular code of behavior (*pashtunwali*), are against ethnic integration and foreign presence is often seen as an interference in their tribal world. From Pashtun we should expect a negative judge on Chinese presence. Instead Tajik are more opened to integration and developed a more inclusive way of life, e.g. percentage of Tajik employed in State administration is higher compared to Pashtun. In my sample for interview I tried to respect ethnic percentage but that was possible just for Herat and Kabul (in the other areas, being already a good result to be able to interview people, I chose to take in consideration all the data collected).

As a general consideration, sample interviewed are not proportionally corresponding to ethnic/genre of Afghan people composition but, considering the particular difficulty of the area I decided to elaborate them in any case.

For all the interviewed people we proposed just three simple questions:

1) What do you know about China presence and initiatives in Afghanistan, do you think they are useful to Afghanistan too or just for China?

2)What you think about Chinese presence: is it going to enrich Afghan and its population (in any way) or not?

3)Do you think China presence in your country is it going to increase in future and you think is this a positive or negative factor?

I will examine first the answers given by officials from Kabul central government.

China presence and initiatives in Afghanistan: do you think they are useful to Afghanistan too or just for China?	Useful for both: 3	Useful just for China: 0	
Chinese presence: is it going to enrich	Enrich, especially economically:	No: 0	

Afghan and its population (in any way) or not?	3		
China presence in your country is it going to increase in future and you think is this a positive or negative factor?	Yes, positive: 2	No: 0	No, negative: 1

Data referred to officials from Central Government of Kabul interviewed on the field in 2011-2015.

In examining first and second part of data we must take in account the political faction and the corruption problems emerged in Afghanistan especially in regional governments. Majority of interviewed are part of Islamic parties this could influence in a negative way the judgement of Chinese presence (as China is formally a communist state), despite of this the officials opinion is strongly positive. We should consider even corruption problem. Corruption, as recognized from Afghan government itself it's one of the biggest problem of Afghan governance. Corruption in the country has really become impressive especially from 2010. In every kind of interpretation of officials declaration we should take in account that people interviewed could be involved in bribery linked to concession to Chinese Companies. Corruption could influence decision of conceding sources exploitation to China and the opinion about Chinese presence in the area. Anyhow the article it is not really interested in motivation of opinion released but in understanding what is the real opinion of Afghan people about Chinese presence (Gombert, Binnendijk and Lin, 2014) .

The officials opinion of Chinese activities in the country is really positive and 2 of them are already thinking that China investments are going to increase in the nearest future and they hope so for Afghan economy. This particular situation could be result of a corrupt regime, but it's anyway a good result for Chinese image and soft-power.

Second part of data concerns regional governments, they are really partial because we were able to collect data just from Herat region (for logistic and security reasons).

China presence and initiatives in Afghanistan: do you think they are useful to Afghanistan too or just for China?	Useful for both: 11	Useful just for China: 2	
Chinese presence: is it going to enrich Afghan and its	Enrich, especially economically: 9	No: 4	

population (in any way) or not?			
China presence in your country is it going to increase in future and you think is this a positive or negative factor?	Yes, positive: 8	No, positive: 1	No, negative: 4

Data referred to officials from Regional Government of Herat interviewed on the field in 2011-2015.

Data shown in the second table start to differentiate the view of Chinese presence, in particular we can notice this from answers to the second question. Four officials out of 13 from Herat Government think that economic investment of PRC in Afghanistan they are not going to enrich their country, at least economically. Some of them think that Chinese presence is a good deterrence for insurgency or a less incumbent to NATO forces, but they don't think is an economical positive factor in this moment. This point is particularly important by the fact that has emerged from officials of a Regional Government. The fact could imply that Regional Governments are less touched by corruption related problems than Central regarding resources allocation and exploitation. This could happen because mines and mineral resources exploitation are generally allocated at Central political level by Ministry of Mines. A second cause for the slightly worse opinion of China presence could be the Iran influence in Herat area. Iran borders Afghanistan for 940 km, touching provinces of Herat, Farah and Nimruz. Iran is really involved in Afghanistan reconstruction and strongly interested in post-war Afghanistan economy, either for economical motivations and for religious/cultural motivations (Zonis, 2015). In fact Shi'a religion watch with a particular attention Afghanistan and will try to influence the new Islamic Republic particularly to avoid dangerous Sunni manifestation like Arab influence and *taleban* phenomenon. Iran invested in realizing an hospital in Herat and a power plant in Farah and both population gather economic advantages from borders exchanges. Iran, after the end of Iran-Pakistan pipeline project in 2013-2014 (for which project invested an huge amount of economic resources), has tried with its influence, to colder the project for TAPI pipeline, a concurrent pipeline supposed to cross Afghanistan starting from Turkestan for proceeding in Pakistan and India.

While Iran is trying to pose obstacles to TAPI project China is strongly sustaining it. In fact China is trying to insert in the project a branch heading to its hub port in Pakistan (Gwadar) and it's also supporting it's special ally Pakistan. Actually Beijing has a special alliance with Islamabad lasting from 1951, renewed through the years and renewed as Nawaz Sharif was elected as Prime Minister in 2013 (Magnani, 2012). So we can't avoid to consider

confrontation of Pakistan (Sunni Islamic Republic) with Iran (Islamic Shi'a Republic and stronghold of Shi'a), and, in doing this consider that China position will probably be always supporting Pakistan (Ebinger, 2015). Pakistan government needs a moderate government in Afghanistan, preferably with a majority of Pashtun in administrative charges. First condition is necessary to have a safe neighbor with a good economy to cooperate with. While second aspect would be best option to create stability and conditions of governance in the Northern territories named Federally Administered Tribal Areas (FATA). These regions (inhabited by fierce Pashtun tribes) are nominally controlled by Pakistan, but ruled through a tribal system (similar to *pashtunwali*) by Pashtun, and frontier line is not a real border but much more a communication area between Pashtun populations. To have a moderate and friendly Pashtun government in Afghanistan would mean for Pakistan to have a better control of its FATA (Shah, Busha, 2015). For these motivations China and Iran are at the present concurrent with their presence in Afghanistan and, again, one of the better strategy to win the game can be convincing Afghan population of their more friendly role (compared to the other).

When we pass to take in exams data collected from population of Herat we have a bigger amount of people interviewed and in these cases I decide to register also the number of people that didn't want to answers to one or more questions.

China presence and initiatives in Afghanistan: do you think they are useful to Afghanistan too or just for China?	Useful for both: 427	Useful just for China: 516		Prefer not to answer: 301
Chinese presence: is it going to enrich Afghan and its population (in any way) or not?	Enrich, especially economically: 329	No: 563		Prefer not to answer: 352
China presence in your country is it going to increase in future and you think is this a positive or negative factor?	Yes, positive: 212	No, positive: 227	No, negative: 124	Yes, negative: 363 Prefer not to answer: 318

Data referred to Herat province population interviewed on the field in 2011-2015.

Total number of Afghans interviewed in Herat province is 1244, a lot of them didn't want to answer to one or more questions giving various motivations. Percentage of people refusing to answer is around 25%, common population is still too influenced by the fear of insurgents to answer freely to the question and in some cases ignore completely the subject. Second case happens in Herat province because Chinese presence is really weak compared to provinces as Kabul or Mazar I Sharif. As shown from various indicators, Herat province there is a stronger presence of Iranian enterprises than Chinese enterprises (Committee on Foreign Relations US Senate, 2013). Anyhow Herat population examined shows a less positive vision of Chinese presence respect to the officials point of view and we can see that more than 50% consider it a negative factor or at least useless from the economic point of view. It should be highlighted in particular the answer on the fifth column of the third question: 363 Afghans out of 1244 interviewed in Herat province believe that Chinese presence is going to increase in future and see this as a negative factor.

After Herat I will examine data collected from population of Kabul: the capital.

China presence and initiatives in Afghanistan: do you think they are useful to Afghanistan too or just for China?	Useful for both: 473	Useful just for China: 299		Prefer not to answer: 155
Chinese presence: is it going to enrich Afghan and its population (in any way) or not?	Enrich, especially economically: 449	No: 237		Prefer not to answer: 241
China presence in your country is it going to increase in future and you think is this a positive or negative factor?	Yes, positive: 374	No, positive: 137	No, negative: 216	Yes, negative: 96 Prefer not to answer: 104

Data referred to Kabul province population interviewed on the field in 2011-2015.

In Kabul province population interviewed is more supportive of China and Chinese initiatives in Afghanistan, in fact we can highlight the positive vision of a future bigger involvement of China in the area for 354 people out

of 927 interviewed. Near the capital population can express more freely their opinions without fearing insurgents threatening and we can deduce this from fact that just 17% of population interviewed in Kabul province prefer not to answer. Better vision of China presence and more supportive attitude to Chinese investments can be assessed as a result of a better knowledge of Chinese presence. In fact Chinese presence in Kabul is one of the biggest in Afghanistan due to the mineral complex of Mes Aynak. Probably we can deduce (without prejudice) that a great part of negative perception of Chinese perception is due to scarce knowledge of their effective actions in Afghanistan.

Then we can examine data coming from Helmand province, one of the most troubled from 2010 to current days.

China presence and initiatives in Afghanistan: do you think they are useful to Afghanistan too or just for China?	Useful for both: 403	Useful just for China: 251		Prefer not to answer: 391
Chinese presence: is it going to enrich Afghan and its population (in any way) or not?	Enrich, especially economically: 417	No: 237		Prefer not to answer: 391
China presence in your country is it going to increase in future and you think is this a positive or negative factor?	Yes, positive: 326	No, positive: 128	No, negative: 137	Yes, negative: 70 Prefer not to answer: 384

Data referred to Helmand province population interviewed on the field in 2011-2015.

In the Helmand province, place of one of the strongest insurgent presence from 2010 to current days, we find a percentage of people refusing to answer running around 37%. Even if population is feared of contact with western people there is a good consideration of Chinese presence, e.g. the answer to the question “Chinese presence: is it going to enrich Afghan and its population (in any way) or not?” for 427 people is “Yes, especially economically”, 391 refuse to answer and just 237 say “No”. Among people interviewed there is a good perception of Chinese investments and investors

especially if compared to Herat province. In particular Chinese presence is seen as a good economical factor for helping the Afghan development.

We can find data similar in Badghis, a poor province located in Northeastern part of Afghanistan (North of Herat).

China presence and initiatives in Afghanistan: do you think they are useful to Afghanistan too or just for China?	Useful for both: 396	Useful just for China: 281		Prefer not to answer: 301
Chinese presence: is it going to enrich Afghan and its population (in any way) or not?	Enrich, especially economically: 403	No: 274		Prefer not to answer: 301
China presence in your country is it going to increase in future and you think is this a positive or negative factor?	Yes, positive: 377	No, positive: 117	No, negative: 133	Yes, negative: 50 Prefer not to answer: 301

Data referred to Badghis province population interviewed on the field in 2011-2015.

Data collected in Badghis are really similar to those of Helmand apart from people refusing to answer (that are less: around 30%). We could interpret this tendency noting that the province is far away Iranian influence (compared to Herat) even if there aren't any mines in the region and Chinese influence is limited to commerce of goods (cars and other). In general in Badghis too there is a good consideration of Chinese presence and for example 403 people out of 978 thinks that Chinese presence is positive and it is going to enrich the country.

At the end we can check data coming from Kandahar province, in the South of the country.

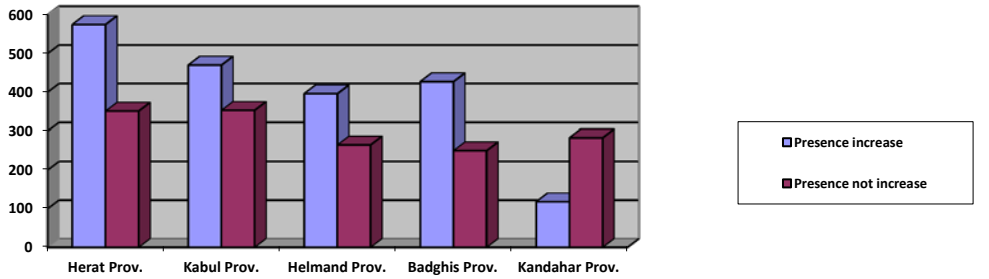
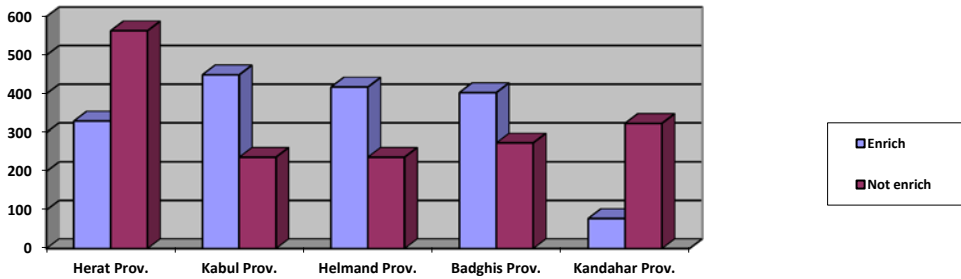
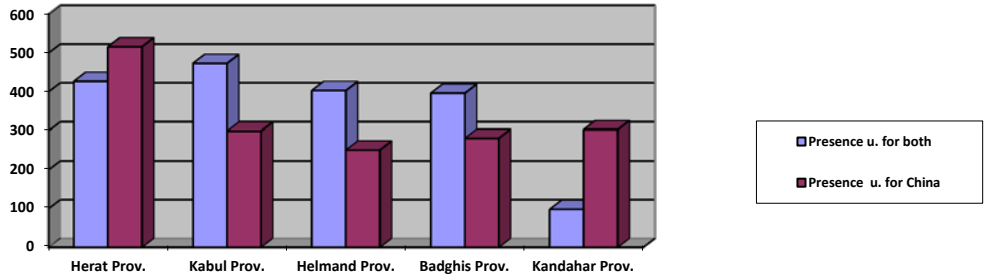
China presence and initiatives in Afghanistan: do you think they are useful to Afghanistan too or just for China?	Useful for both: 98	Useful just for China: 303		Prefer not to answer: 278
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Chinese presence: is it going to enrich Afghan and its population (in any way) or not?	Enrich, especially economically: 78	No: 323		Prefer not to answer: 278
China presence in your country is it going to increase in future and you think is this a positive or negative factor?	Yes, positive: 75	No, positive: 151	No, negative: 132	Yes, negative: 43 Prefer not to answer: 278

Data referred to Kandahar province population interviewed on the field in 2011-2015.

In this case we witness a complete falling of trust in Chinese investments and presence. First of all we have to preface that 40% of people interviewed prefer not to answer: an huge number, huge especially when compared to other provinces. Fear manifested by population is probably caused by the historical role of Kandahar as an insurgency strong point. Mistrust of Chinese influence takes common people interviewed to declare in 323 (out of 679 interviewed and 278 refusing to answer) that China is investing in Afghanistan just for its proper benefit (they are 80% of people answering to the question). There is an enormous diffidence toward China and Chinese policy. In Kandahar province there aren't mines or other particular signs of Chinese presence but we can't explain with just this lack of knowledge the 80% of negative perception. Diffidence and mistrust have probably ethnic origin, in fact Kandahar is principally inhabited by Pashtuns. As explained above, Pashtuns are a fierce tribal population of this country, following Tajiks for percentage in Afghanistan have a really strong and narrow cultural system called *pashtunwali*. *Pashtunwali* code is really strict and probably it causes a scarce integration with foreign people, particularly, in this case, Chinese. In correspondence with Pashtun ethnic group we collected more negative data about Chinese involvement in Afghanistan.

With the same data I produced a series of three graphics (one for each question) which highlight immediately the differences among the five provinces (in term of people accepting to answer and positive/negative answers):



Analyzing data we saw a tendency to consider Chinese presence more positively in the higher classes: officials in Kabul and Herat provinces have a better opinion compared to common people. The scarcity of knowledge of Chinese reality could take less instructed people to the common error of considering China (a formally communist State) as directly linked to old USSR. We shouldn't forget the invasion of Afghanistan by a communist regime that occupied with violence the region from 1979 to 1989 and left it in a Civil War. This can be one of the motivation for the difference of opinions in the different samples.

Assessing common people opinion in various provinces we noticed a vision becoming more and more good starting from provinces with scarce Chinese presence to provinces with a bigger amount of Chinese investments. For example we noticed a worse opinion in Herat (where there is a really low Chinese rate of investments) than in Kabul. This perception has been confirmed also during interviews: people not knowing Chinese initiative treated them with particular diffidence.

Conclusion:

This analysis of Chinese interests, policies, and Afghan perception in regard of the economic exploitation of Afghan sources needs a fundamental preface to better understand Běijīng behaviors. It is what discussed in first part of the article: Chinese motivations of presence in Afghanistan. China knows that its presence in Afghanistan is a stabilizing element to keep on exploit afghan mineral sources and, at the same time, is aware that giving chances for an economic development to a friendly government is going to reduce extremist fall-out in the future (Liu, 2002). Běijīng has positioned itself as supportive of Afghanistan's long-term stability and prosperity though essentially civilian and limited political, economic, and diplomatic assistance. It has also been careful to remain on good terms with the Kabul authorities without offending the Pashtuns.

China's interests and policies toward Afghanistan generally agreed with Islamabad's desire to improve relations with Kabul, and to prevent excessive U.S. pressure and incursions on Pakistani sovereignty. We have also to remind traditional friendship between China and Pakistan to maintain which both countries are always trying to have same policy in Central Asia (especially with Kabul).

To maintain this policy and its general foreign policy Běijīng needs to be seen as a peaceful power and to improve its soft power. So the perception of Chinese presence by Afghan people it is object of primary importance either to avoid future increase of political instability and to increase first Chinese foreign policy leverage: soft power.

Analyzing data on the one hand we have seen that good opinion on Chinese presence largely depends on knowledge that Afghan can have of Chinese investments and (naturally) from economic benefits that they can obtain (in fact in the areas nearer Chinese biggest facilities and installations opinion were more positive than in the others). On the other hand we notice that where there is scant knowledge of Chinese economic activity or a more narrow cultural system (like *pashtunwali*) we find a bad conception of Chinese policy. My main conclusions so is that to improve its influence in stabilizing Afghanistan China needs to diversify its investments in type and

in geographical location. Also could be really useful for China to work in spreading its culture among Afghans like it did in Pakistan.

For same motivations could be interested to conduct a research specifically on this aspect: “How knowledge of Chinese presence can influence positively Afghan perception of Chinese investments?”

References:

Data on Chinese investments taken from:
<http://www.heritage.org/research/projects/china-global-investment-tracker-interactive-map>

Data on declaration of Afghan officials taken from:
<http://securitycouncil.org>

Committee on Foreign Relations US Senate, *Rebalance to Asia*, Washington, US Senate, 2013.

World Bank, *World development Indicators*, 2010, Washington D.C. WB, 2010.

Allen-Ebrahimian, B., (April, 22, 2015), China loves Pakistan, but most Chinese don't, *Foreign Policy*, from:
<https://foreignpolicy.com/2015/04/22/china-startup-nation-from-factory-to-tech-incubator/> .

Breslin, S., *Hanbook of China Internatinal Relations*, London, Routledge, 2010.

Downs, Erica, China buys into Afghanistan, in *SAIS Review*, vol. XXXII no. 2, Summer Fall 2012, Washington, SAIS Review Editions, pp.65-84.

Ebinger, C., *Energy and security in the Industrializing World*, University Press of Kentucky, 2015.

Gombert, D., Binnendijk, H., Lin, B., *Blinders, blunders and Wars*, Washington, Rand 2015.

Gries, L., *Still life with rethoric*, Denver, UCP, 2015.

Keller, W., Rawsky, T., *China's rise*, Pittsburgh, University of Pittsburgh Press, 2015, pp.95-101.

Magnani, F., *L'alleanza Sino-pakistana*, Rome, Momenti Ribera, 2012.

Ramanullah, M., *The battle for Pakistan*, Washington, New America foundation, le 2010.

Shah, A., Busha, A., Pakistan in 2014: Democracy under the Military's Shadow, *Asian Survey*, Vol. 55, No. 1, A Survey of Asia in 2014 (January/February 2015), pp. 48-59

Wo-Lap Lam, ., *The Chinese International Politics in the Hu Jintao era*, London, M. E. Shape 2010.

Liu, Y., *Zhi haiquan yu haijun Zhanshe*, Beijing, Guofang Daxue Chubanshe, 2002.

Yuan, J., Studying Chinese Security Policy toward an Analytic Framework, in *Journal of East Asian Affairs*, vol. 13 del 1999, New York.

Zhao, Huasheng , *China and Afghanistan*, Washington, Center for Strategic & International Studies, 2015, pp. 11-19.

Zonis, M., *Political élite of Iran*, Princeton, PUP, 2015, pp.150-198.