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# Applied Social Sciences: Psychology, Physical Education and Social Medicine

Edited by

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# TABLE OF CONTENTS

## Chapter Two: Physical Education & Sport

## Chapter Three: Social Medicine

# LIST OF TABLES

# List of Illustrations

# FOREWORD

With an interdisciplinary approach, this volume combines the contributions of researches preoccupied with clarifying some of the most relevant changes in Romanian social realities.

The chapters included in *Applied Social Sciences: Psychology, Physical Education and Social Medicine* were presented at the first ISSA Conference held in Timişoara in June 18–20, 2012 organized by the Faculty of Sociology and Psychology (Department of Social Work) of the West University of Timişoara (Romania), together with the Faculty of Political Sciences, Philosophy and Communication Sciences.

The ISSA Conference and this book give an example of how we can get together on the field of social sciences, in a constructive way, through a genuine interdisciplinary model, refusing the "ownership of land." This forum has tried to build a "union bridge" in a necessary field of debate from different perspectives.

The book is structured in three chapters, each of them belonging to a specific area of discipline, combining qualitative with quantitative approaches and theoretical synthesis with field studies. The most important research fields include developmental psychology, methodology of applied psychology, educational psychology, physical education and social medicine.

In the chapter dedicated to Psychology, various topics are investigated with a significant methodological and conceptual impact on understanding contemporary personality changes, such as deviant behaviours of adolescents, clinical implications of psychotherapeutic approaches, a cross-cultural presentation of the educational field, validation of specific psychological scales, cross-cultural approaches in education, the intergenerational backgrounds of societies that have experimented totalitarian trauma, and personality dynamics in the virtual networks.

In the chapter dealing with issues in the field of Physical Education and Sport, different aspects of sport performance optimization in individual and group conditions, inside of different sport disciplines (athletics, gymnastics, volley, swimming and so on) are presented, together with the particularities of interpersonal interaction from sport environments.

The chapter associated with Social Medicine deals with a series of topics operating with a consistent repertoire of techniques and methods of analysis such as workplace health, risk factors for different diseases, discrimination against HIV patients, interrelation between different types of pathologies and relational patterns in which are inserted subjects, the impact of structural factors (like the economic crisis) toward public health, the efficacy of community health assistance for elderly people, and so on.

This book offers a theoretical and practical support for many types of professionals involved in clarifying the forms of social and individual pathology, but also interested in increasing the potential of the social actors, providing through the network of social and behavioural sciences some relevant key lectures for better understanding post-communist Romanian realities.

*The Editors*

# CHAPTER ONE

# PSYCHOLOGY

# Acute and Transient Psychotic Disorder: Social Functioning After Five Years of Evolution

Cristina Bredicean, Ion Papavă, Radu-Ştefan Romoşan and Mădălina Cristanovici

## Introduction

Acute psychotic disorder represents one of the controversial pathologies of contemporary psychiatry, especially when regarded from a longitudinal perspective of evolution. There are currently very few studies on this pathology, but one of the most important is the HASBAB study (Marneros & Pillman 2002), which has made a prospective and comparative assessment of schizophrenia and schizoaffective disorder. The question is whether acute psychotic disorder is an independent nosological entity.

According to ICD-10, acute and transient psychotic disorder is a condition with an acute onset with clinical symptoms (delusions, hallucinations, mood disorders), is polymorphic (rapidly changing), with a time limited evolution (one to three months), with a complete remission accompanied with the return of the patient to their previous level of functioning (ICD-10 1992). Generally, when discussing the longitudinal evolution both from clinical and social functioning perspectives, we observe that there are no references made to a possible differentiation between subjects who experienced a single episode of psychosis and those with multiple episodes.

Social functioning is one of the most assessed parameters when discussing the longitudinal evolution of a psychotic episode. There are many described approaches of social functioning that aim to explain what social functioning is, what role it plays in the longitudinal evolution of psychosis and the factors that can influence social functioning. Overall, social functioning represents the way a person carries out their social roles,

meaning an individual succeeds in going to work, having a family and a group of friends to which they can relate.

Most research studies have been conducted on subjects diagnosed with schizophrenia, while others compare social functioning of subjects diagnosed with schizophrenia to those with affective disorders or with schizoaffective disorders. These studies have shown that social functioning is the most affected in schizophrenia, followed by schizoaffective disorder and affective disorder. In the study mentioned above, a comparison between acute and transient psychotic disorder, schizophrenia and schizoaffective disorder was made, showing that subjects diagnosed with acute psychotic disorder have the highest social functioning.

The current study is a prospective study that is part of a project which assesses the first episode of psychosis. It has been conducted in the Timisoara Psychiatric Clinic since 2005. We have selected, from the First Episode of Psychosis Project, only the cases with acute psychotic symptoms and diagnosis. These cases have been examined on social functioning (educational, marital, professional status) after five years of evolution. We also examined the factors that could influence the social functioning of these cases. The hypothesis was that social functioning in a sample of subjects with acute and transient psychotic disorder is reduced after five years of evolution.

## Material and Method

### Subjects and Sample Features

Subjects in the current study were recruited from the Psychiatric Clinic of Timisoara and hospitalized between 2006 and 2007 for a first psychotic episode—an acute and transient psychotic disorder. Because of the low number of subjects, the selection was based on inclusion/exclusion criteria without the use of statistical methods.

Inclusion criteria—First psychotic episode between 2006–2007, hospitalized in the Psychiatric Clinic of Timisoara; Age of onset between eighteen to sixty-five; Current diagnosis is acute and transient psychotic disorder, according to ICD 10; registered as outpatients of the Clinical Ambulatory Timisoara; Subjects agree to participate in the study.

Exclusion criteria—Presence of personality disorders or mental retardation; Presence of a disease caused by drug use or an organic disorder.

### Assessment

To assess subjects during their first admission, we used the SCAN interview (WHO 1994). This is a semi-structured clinical diagnosis interview that consists of multiple parts: the SCAN manual, the SCAN glossary, computer software and training and learning materials. With the subjects in this study we have used the SCAN manual and glossary only.

We used the expanded version of the Brief Psychiatric Rating Scale (BPRS) to assess the current level of symptomatology of the subjects (Bech 1992). The BPRS contains 24 items covering a wide-range of psychiatric symptoms. The BPRS is rated on a 1 to 7 Likert scale, where 1 indicates no pathology and 7 indicates severe pathology. For this study, the BPRS total score for each group was examined.

We have assessed the social functioning of the subjects by using the GAF Scale (Global Assessment of Functioning). This is a widely used scale that helps psychiatrists to appreciate the global functioning of a subject. GAF is a numerical scale (0–100) that correlates the functioning level of the subject with the severity of their clinical symptoms (DSM-IV-TR 2000).

Analyzed parameters were—Socio-demographic data: gender, the onset age and the existence of psychotic pathology in the family; Clinical data: present score of BPRS; Social functioning: GAF Scale, educational, marital, professional status at onset/present.

### Data Analysis

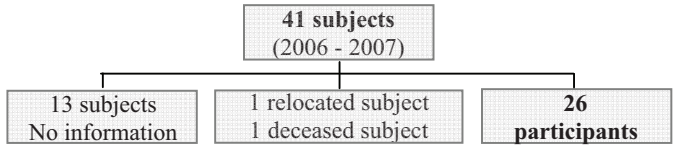
Subjects were analyzed prospectively from onset to present. We have analyzed multiple data, but we have selected for this study only those listed above. We used the following tests for statistical processing—Kolmogorov-Smirnov non-parametric test and Spearman R non-parametric correlation test ($p<0.001$).

## Results

### Study Sample

This study included only the subjects that after five years of evolution are still registered as outpatients in ambulatory (N=26) (see Figure 1-1 below).

**Figure 1-1. Study group**




## Demographic Characteristics

Demographic characteristics include gender (more males than females), onset age (minimum eighteen, maximum forty-three) and family history (nine subjects have a first-degree relative with a psychotic pathology) (see Table 1-1 below).

**Table 1-1. Socio-demographic characteristics**

| Acute and transient psychotic disorder | Number | Percentage (%) |
|---|---|---|
| **1. Gender** | | |
| male | 14 | 54 |
| female | 12 | 46 |
| **2. Age** (average =27.69, standard deviation=7.12) | | |
| 18–20 | 1 | 3.84 |
| 21–30 | 18 | 69.23 |
| 31–40 | 5 | 19.23 |
| > 40 | 2 | 7.70 |
| **3. Family history** | | |
| 26 | 9 | 34.61 |

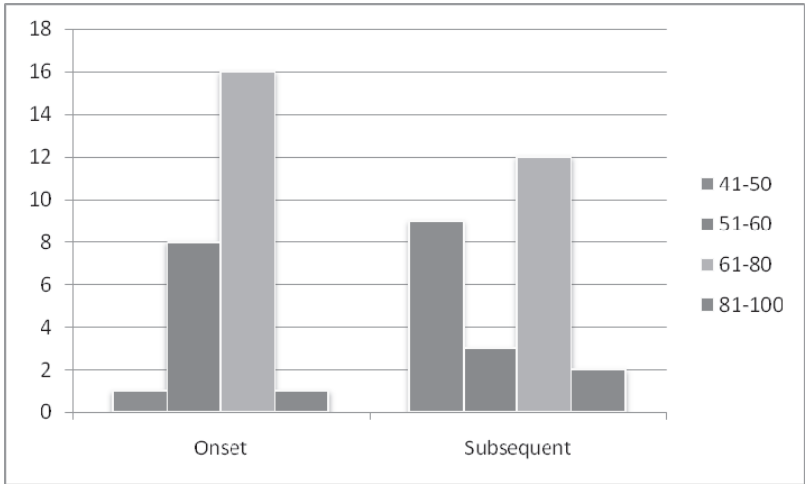
## Clinical Characteristics

The scores of the BPRS Scale at onset and after five years of evolution showed statistically significant differences between the average scores ($Z=4.90$, $p=0.00$).

## Social Functioning

The analysis of this parameter was performed using the GAF scale represented in Figure 1-2 below.

**Figure 1-2. GAF-scale records**




Starting from the idea that social functioning consists of the initial acquisition of an education level, followed by the fulfilment of a familial and professional role, we have analyzed all of these parameters (onset/present) (see Table 1-2 below).

**Table 1-2. Onset/Present parameters**

| **1. Education level** | **Onset** | **Subsequent** |
|---|---|---|
| Primary | 1 | 1 |
| Secondary | 10 | 10 |
| Post Secondary | 2 | 2 |
| University | 13 | 13 |
| **2. Professional status** | **Onset** | **Subsequent** |
| Employed | 16 | 14 |
| Unemployed | 4 | 0 |
| Student | 6 | 0 |
| Retired | 0 | 12 |
| **3. Marital status** | **Onset** | **Subsequent** |
| Married | 6 | 7 |
| Unmarried | 20 | 19 |

In addition to this, we also tried to assess some possible factors that may influence social functioning, i.e. educational, marital and professional statuses. The results analysis shows there is a correlation between

educational (see Figure 1-3 below), professional status (see Figure 1-4 below) and social functioning. We have also found that marital status does not influence the overall social functioning.

**Figure 1-3. Correlations between GAF-scale records and Educational level (subsequent evaluation)**

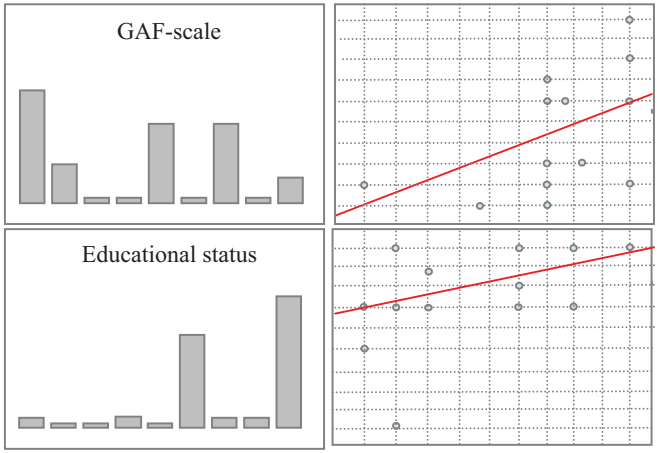



**Figure 1-4. Correlations between GAF-scale records and Professional status at subsequent evaluations**

## Discussions

This study's aim was to assess if acute and transient psychotic disorders cause a decline in social functioning when considered from a longitudinal perspective of its evolution. If we consider the diagnosis systems and criteria (ICD 10), social functioning should return to the level anterior to the psychotic episode. We can notice, however, that there is a difference in clinical practice and that social functioning decreases as time passes. We have also tried to find out if there are any factors we can correlate with social functioning. The socio-demographic profile of the sample shows no statistically significant differences regarding the gender of the subjects. Average age of onset is 27.69 years and only 34.6% have a family history of psychosis. These results are similar to those we find in the international literature, mentioning that epidemiological studies state that acute and transient psychotic disorder is more frequent among women than men (Sajith et al. 2002). We have also found statistically significant differences ($Z=4.90$, $p=0.00$) between the mean scores of the BPRS at onset and present evaluation, indicating that treatment showed a reduction of the severity of the disease. The current assessment with the BPRS Scale was made when the subject was outside the episode of the disease, and the onset evaluation was made within the episode, which explains the statistical difference.

Social functioning shows that 14 (53.8%) subjects out of 26 have GAF scores between 61 and 100, which represent a good social functioning. Given that we discuss acute and transient psychotic disorders we can state that social functioning is affected. Several factors that can influence social functioning are described: gender, onset age, educational level, professional and family status. In this study, we have analyzed the correlations between educational level, professional and family status. Our findings show that social functioning is not influenced by family status (marital status) as we had expected. We have observed that there is very little and insignificant difference of social functioning between married and single people. There is a statistically significant correlation (Spearman $R = 0.395$) between the educational level and the GAF scores—the higher the educational level of the subjects, the better their social functioning.

These results are confirmed by literature with the mention that studies have been conducted on schizophrenic spectrum pathology. The results of the Kolmogorov-Smirnov nonparametric test indicate that professional status influences social functioning ($p<0.001$). This indicates, on the one hand, that the subjects who were able to maintain employment during the evolution of the disease have had a significantly better social functioning

than subjects who retired. Psychosocial interventions on these factors are highly important for the longitudinal evolution, managing to increase the social functioning of psychotic patients. When talking about social functioning, we should also take into account the number of hospital admissions and the further evolution of the diagnosis. This aspect has been left aside from this study. Clinical experience shows that this is an unstable diagnosis that can transfer to another psychotic pathology.

## Conclusions

From a longitudinal perspective, acute and transient psychotic disorder affects social functioning in the sense of deterioration. The factors that correlate with a better social functioning are professional status (employee) and educational level (high number of years of schooling). For a better characterization of acute and transient psychotic disorder, we need prospective longitudinal studies and a larger number of subjects.

## References

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders DSM-IV TR*. Washington, DC: American Psychiatric Publishing.

Bech, P. (1992). *Rating Scales for Psychopathology, Health Status and Quality of Life: A Compendium on Documentation in Accordance with the DSM-III-R and Who Systems*. Berlin: Springer-Verlag.

Marneros, A. & Pillmann, P. (2002). "Acute and Transient Psychosis Disorders." *Psychiatry* 13: 276–286.

Sajith, S. G., Chandrasekaran, R., Sadanandan Unni, K. E. & Sahai, A. (2002). "Acute Polymorphic Psychotic Disorder: Diagnostic Stability over 3 Years." *Acta Psychiatrica Scandinavica* 105 (2): 104–109.

World Health Organization. (1992). *ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines*. Geneva: World Health Organization.

—. (1994). *Schedules for Clinical Assessment in Neuropsychiatry (SCAN)*. Washington, DC: American Psychiatric Press.

# DEFENCE AND COPING MECHANISMS IN DEPRESSIVE DISORDERS

DĂNUȚ-IOAN CRAȘOVAN

## Introduction

Over recent decades there has been growing interest in the various mechanisms of psychological defence in both personality assessment and psychopathology, as numerous and diverse theoretical scales illustrate (Cramer 1998, 2006). The introduction to the latest edition of the D.S.M. - IV- R of an assessment instrument for psychological defence, the Defence Operational Scale (American Psychology Association 2000), shows that any approach of psychopathology is impossible without the analysis of psychological defence mechanisms. Thus, the monitoring of defensive functioning becomes a potent instrument of progress assessment and treatment results evaluation (Bond 2004).

The focus of the study on the role of defence and coping mechanisms in depressive disorders was determined by the prevalence of the different types of depression related to contemporary life, affecting all age groups and social environments, and becoming the disease of the contemporary age (David 2006 a). Clinical studies (Kneepkens & Oakly 1996; DeFife & Hilsenroth 2005) indicate that, in the case of depressive disorders, patients use defence mechanisms with absent or extremely low adaptability so that the recovery process needs the identification and improvement of the psychological defence mechanisms of the human subject. In this context, a series of recent researches suggest the predictive value the defensive styles and levels may have in the planning and successful outcomes of therapeutic strategies (Van et al. 2009).

## Objectives

The objectives of the current study have an exploratory, global character, related firstly to the analysis of the particularities displayed by the thirty

psychological defence mechanisms and the fifteen coping mechanisms operationalized by the DSQ 60 and COPE instruments.

Secondly, the connection between defence mechanisms and coping mechanisms in depressive disorders is considered. Therefore, the following five objectives were set:

- Identification of psychological defence mechanisms and gender-specific character of these mechanisms in depressive disorders.
- Identification of coping mechanisms and gender particularities of these mechanisms in depressive disorders.
- Identification of the connection between psychological defence mechanisms and coping mechanisms peculiar to depressive disorders.
- Identification of the connection between psychological defence mechanisms and dysfunctional attitudes in depressive disorders.
- Identification of the connection between coping mechanisms and dysfunctional attitudes in depressive disorders.

## Methodology

### Participants

The clinical sample used included 103 adult patients diagnosed with depressive disorders (a number of 124 participants were approached out of which 5 refused to participate after being informed of the purpose of the research, 2 subsequently gave up after completing only some of the six questionnaires of the group, and 1 submitted an incomplete questionnaire). The subjects were hospitalized in the Gătaia Psychiatry Hospital, the Timișoara Psychiatry Clinics, the Psychiatry Department of the Lugoj Municipal Hospital, the Timișoara Psychiatry Stationary, the Arad Psychiatry Clinics, and some private practice medical offices of psychotherapy and psychiatry in Timișoara (all in Western Romania). The participation in the study relied on free will and informed consent.

The nonclinical sample included 770 participants (the general population without depressive disorders).

The inclusion criteria were: persons diagnosed with depressive disorders (American Psychology Association 2000) without psychological comorbidity; persons aged eighteen to seventy-five; persons diagnosed with depressive disorders as a first form of psychopathology identified in the medical history of the participant; no gender related restriction (both men and women were accepted).

The development of the study assumed the administration of DSQ 60, COPE, DAS form A, Beck and Zung questionnaires and of the demographic questionnaire for 124 subjects. Of the 124 administered questionnaires, 103 sets of answers were filled in and introduced into subsequent analyses (n=103). Regarding the demographic features of the tested sample related to the number of scores selected for analysis, the questionnaires were administered to a number of 42 men (40.8%) and 61 women (59.2%), the average age of the respondents being 51.16 (aged twenty-one to seventy-three) and the education level between level 1 and level 7, where 1 corresponds to the high school level (27 subjects, 26.2%), 2 postsecondary school (1 subject, 1%), 3 college for three years (1 subject, 1%), 4 faculty for four, five or six years (9 subjects, 8.7%), 5 master courses (3 subjects, 2.9%), 6 doctoral studies (0 subjects, 0%) and 7 other cases at or below 10 grades (60 subjects, 60.2 %).

In this case, we administered the DSQ 60, COPE questionnaires and the demographic questionnaire to eight hundred subjects. Of the eight hundred applied questionnaires, 770 sets of answers were completed and entered subsequent analyses (n=770). Regarding the demographic features of the sample from the general population related to the number of scores preserved in the analysis, the mentioned questionnaires were applied to 330 men (42.86%), and 440 women (57.14%), the average age of the respondents being 31.16 (aged between eighteen to sixty-six) and the graduated study level between level 1 and level 7, where 1 corresponds to high school (337 subjects, 43.7%), 2 postsecondary school (20 subjects, 2.6%), 3 college for three years (167 subjects, 21.7%), 4 faculty for four, five or six years (175 subjects, 22.8%), 5 master courses (56 subjects, 7.3%), 6 doctoral studies (12 subjects, 1.6%) and 7 for other cases at or below 10 grades (3 subjects, 0.4%).

## Methods

The Demographic questionnaires used for the recording of demographic data and details of the participants in the research were the Defence Style Questionnaire 60 drafted by Thygesen et al. (2008); the COPE Questionnaire drafted by Carver, Scheier & Weintraub (1989); the Beck Questionnaire (Beck, Ward & Mendelson 1981) drafted in 1967 for the assessment of depression intensity according to 21 symptoms; the Zung Scale (Biggs, Wylie & Ziegler 1978) used for the assessment of depressive processing, and; the Dysfunctional Attitude Scale, type A (Beck, in David 2006 b).

### Design

The study had a non-experimental design, where independent variables are not manipulated, being of a descriptive nature, and the relationship between independent variables and the dependent variable is only potentially causal (David 2006 a). Independent variables are: (1) group type—clinical and nonclinical; (2) gender—men and women. Dependent variables are: psychological defence mechanisms, coping mechanisms, and level of dysfunctional attitudes.

### Procedure and Instruments

As regards the administration procedure on clinical population, eligible participants were informed of the purpose of the research, and their informed consent was requested, while the following questionnaires were subsequently applied in the presence of a research assistant, and the Demographic Questionnaire, Beck and Zung Scales, COPE Questionnaire, Defensive Style Questionnaire 60/ DSQ 60 and the DAS Questionnaire (type A) for assessing dysfunctional attitudes. The Romanian DSQ 60 Questionnaire (30 psychological defence mechanisms) was validated in Romania on a general sample N=1011 subjects (Crașovan & Maricuțoiu 2012), and the Romanian COPE Questionnaire with 60 items (15 coping strategies) version was validated for a general sample N=1009 subjects (Crașovan & Sava 2012). Data analysis was run using the factorial Anova method (bifactorial) (Howitt & Cramer 2010) and the correlation method (linear correlation coefficient Pearson, r) under the statistic program of data analysis Statistical Package for the Social Sciences version 19.

## Results

As far as the first objective is concerned, the final results confirm the following 18 psychological defence mechanisms specific to depressive disorders: passive-aggressive, splitting of other, projection, denial, project identification, dissociation, acting-out, devaluation of self, fantasy, withdrawal, intellectualization, splitting of self, displacement, repression, idealization, isolation, help-rejecting complaining and undoing, with some reserves due to the value of the effect size for intellectualization (partial $\eta^2$=.006, β=.65), displacement (partial $\eta^2$=.005, β=.58) and isolation (partial $\eta^2$=.008, β=.77). Under such conditions, by establishing a minimum value of the measure of the average effect of .05 as a criterion for the delimitation of the psychological defence mechanisms identified, of

the 18 defence mechanisms, only 5 remain specific to depressive disorders at the level of the group effect: passive-aggressive (partial $\eta^2$=.07, β=1, p<.001), projection (partial $\eta^2$=.06, β=1, p<.001), dissociation (partial $\eta^2$=.05, β=1, p<.001), withdrawal (partial $\eta^2$=.06, β=1, p<.001) and help-rejecting complaining (partial $\eta^2$=.08, β=1, p<.001). As for gender differences, the statistical analysis showed statistically significant differences between men and women in the clinical group diagnosed with depressive disorders for the following 7 psychological defence mechanisms in the 30 operationalized by DSQ 60 with the reserves related to the measure of the effect: altruism (partial $\eta^2$=.02, β.=.95, p<.001), passive-aggressive (partial $\eta^2$=.01, β.=.69, p<.05), projection (partial $\eta^2$=.01, β=.76, p<.01), reaction-formation (partial $\eta^2$=.01, β=.69, p<.05), self-observation (partial $\eta^2$=.01, β=.69, p<.05), withdrawal (partial $\eta^2$=.01, β=.78, p<.01) and displacement (partial $\eta^2$=.01, β=.82, p<.05).

Regarding the second objective set, the obtained results confirm a number of 5 coping mechanisms as specific to depressive disorders: focusing on expressing emotions, religious approach, behavioural deactivation, substance consumption and acceptance. Statistically, significant differences may be noted only for the 5 coping mechanisms previously mentioned, with a notable reservation that, establishing as a criterion for the delimitation of the psychic defence mechanisms identified as value of the size of the effect of minimum .04 out of the 5 coping mechanisms previously mentioned, only behavioural deactivation proves valid (partial $\eta^2$=.04, β=.99, p<.001). Regarding the gender differences at the level of the coping mechanisms, the statistical analysis showed statistically significant differences between men and women in the clinical group for the following 5 coping mechanisms out of the 15 operationalized by COPE and brought for analysis: expressing emotions (partial $\eta^2$=.01, β=.76, p<.01), religious approach (partial $\eta^2$=.01, β=.93, p<.01), behavioural deactivation (partial $\eta^2$=.01, β=.86, p<.01) use of social-emotional support (partial $\eta^2$=.01, β=.78, p<.01) and substance consumption (partial $\eta^2$=.05, β=.99, p<.001).

Moving further to objective number three, we have identified the following types of correlations between psychological defence mechanisms and coping mechanisms considered to be specific to depressive disorders under the condition of the existence of a value for the size indicators of the effect and statistic power (having as checkpoint the values given by Popa 2008 and Sava 2011), average to low for the size of the effect and average to best for the statistical power: positive correlations between the reaction-formation and the religious approach at the level of the entire clinical group (r=0.24, df=101, p=0.011, p<.05, $r^2$=.05, β=.76 for

the alpha of .05, but also at the level of the clinical group of men (r=0.30, df=40, p=0.048, p<.05, $r^2$=.09, β=.62, for the alpha of .05, bilateral), and the existence of a positive correlation between denial and mental deactivation at the level of the entire clinical group (r=0,20, df=101, p=0.038, p<.05, $r^2$=.04, β=.65 for the alpha of .05, bilateral).

Regarding the forth objective of the study, we identified the following types of correlations, under the conditions of the existence of values for the measure indicators of the effect and statistical power (Popa 2008; Sava 2011), average to large for the measure of the effect (the only exception being the case of the correlation between withdrawal and the dysfunctional attitudes where the value of the effect size is low) and best to large for the statistical power. At the level of the entire clinical group, men and women (r=0.35, df=101, p=0,000, p<.001, $r^2$=.12, β=.87 for the alpha of .01 bilateral) but also at the level of the clinical group of men (r=0.56, df=40, p=0.000, p<.001, $r^2$=.31, β=.93 for the alpha of .01, bilateral) the identification of a positive correlation between denial and dysfunctional attitudes; at the level of the entire clinical group, men and women (r=0.37, df=101, p=0.000, p<.001, $r^2$=.13, β=.91 for the alpha of .01, bilateral) but also at the level of the clinical group of women (r=0.53, df=59, p=0,000, p<.001, $r^2$=.28, β=.90 for the alpha of .01, bilateral), the identification of a positive correlation is statistically significant between devaluation of self and dysfunctional attitudes; at the level of the entire clinical group, men and women (r=0.24, df=101, p=0.015, p<.05, $r^2$=.05, β=.76 for the alpha of .05, bilateral), the identification of the positive correlation between withdrawal and dysfunctional attitudes; at the level of the clinical group of men (r=0.42, df=40, p=0.005, p<.01, $r^2$=.17, β=.67 for the alpha of .01, bilateral) the identification of the positive correlation between repression and dysfunctional attitudes.

Finally, in the case of the last objective, we have identified, under the conditions of the existence of a value for the average size indicators of effect and statistic power (Popa 2008; Sava 2011), both for the size of the effect and for the statistical power, a positive correlation between religious approach and dysfunctional attitudes (r=0.33, df=40, p=0.033, p<.05, $r^2$=.10, β=.68 for the alpha of .05, bilateral) at the level of the clinical group of men.

## Conclusion

The present study identified the defence and coping mechanisms specific to depressive disorders involving the use of specific instruments translated, adapted and validated for the Romanian population. It has also

documented the positive correlations between some of the psychological defence mechanisms and some of the coping mechanisms specific to depressive disorders.

We have also established the existing connections between psychological defence mechanisms specific to depressive disorders and dysfunctional attitudes, on the one hand, and the relations between the coping mechanisms specific to depressive disorders and dysfunctional attitudes respectively, on the other.

Finally, we can state that psychological defence mechanisms and coping mechanisms identified as specific to depressive disorders, the relations between the two categories of adaptive mechanisms and, at the same time, the dysfunctional attitudes these attitudes generate, besides the relations existing between dysfunctional attitudes and psychological defence mechanisms and coping mechanisms, "keep" depressive disorders.

## References

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders*. Washington, DC: American Psychiatric Association.

Beck, A. T., Ward, C. H. & Mendelson, M. (1981). "An Inventory for Measuring Depression." *Archives of General Psychiatry* 4: 561–571.

Biggs, J. T., Wylie, L. T. & Ziegler, V. E. (1978). "Validity of the Zung Self-rating Depression Scale." *British of the Journal of Psychiatry* 132: 381–385.

Bond, M. (2004). "Empirical Studies of Defence Style: Relationships with Psychopathology and Change." *Harvard Review of Psychiatry* 12: 263–278.

Carver, C. S., Scheier, M. F. & Weintraub, J. K. (1989). "Assessing Coping Strategies: A Theoretically Based Approach." *Journal of Personality and Social Psychology* 56: 267–283.

Cramer, P. (1998). "Defensiveness and Defence Mechanisms." *Journal of Personality* 66: 879–894.

—. (2006). *Protecting the Self: Defence Mechanisms in Action*. New York, NY: The Guilford Press.

Crașovan, D. I. & Maricuțoiu, L. P. (2012). *Adaptation of the Defensive Style Questionnaire (DSQ-60) to a Romanian Sample*. Manuscript submitted for publication.

Crașovan, D. I. & Sava, A. F. (2012). *Adaptation of the COPE Questionnaire to a Romanian Sample.* Manuscript submitted for publication.

David, D. (2006a). *Metodologia cercetării clinice* [Methodology of the Clinical Research]. Iaşi: Polirom.

—. (2006b). *Tratat de psihoterapii cognitive şi comportamentale* [Treatise of Cognitive and Behavioural Psychotherapies]. Iaşi: Polirom.

DeFife, J. A. & Hilsenroth, M. J. (2005). "Clinical Utility of the Defensive Functioning Scale in the Assessment of Depression." *Journal of Nervous and Mental Disease* 193: 176–182.

Howitt, D. & Cramer, H. (2010). *Introducere în SPSS pentru psihologie* [Introduction to SPSS for Psychology]. Iaşi: Polirom.

Kneepkens, R. G. & Oakly, L. D. (1996). "Rapid Improvement in the Defense Style of Depressed Women and Men." *Journal of Nervous and Mental Disease* 184: 358–361.

Popa, M. (2008). *Statistică pentru psihologie. Teorie şi aplicaţii SPSS* [Statistics for Psychology. Theory and SPSS Applications]. Iaşi: Polirom.

Sava, F. A. (2011). *Analiza datelor în cercetarea psihologica* [Data Analysis in Psychological Research]. Cluj-Napoca: ASCR.

Thygesen, K. L., Drapeau, M., Trijsburg, R. W., Lecours, S. & de Roten, Y. (2008). "Assessing Defence Styles: Factor Structure and Psychometric Properties of the New Defence Style Questionnaire 60 (DSQ-60)." *The International Journal of Psychology and Psychological Therapy* 8: 171−181.

Van, H. L., Dekker, J., Penn, J., Abraham, R. E. & Schoevers, R. E. (2009). "Predictive Value of Self-Reported and Observer-Rated Defence Style in Depression Treatment." *American Journal of Psychotherapy* 63: 42–64.

# Intelligence Studies Curriculum in the Romanian Civil Higher Education: Context, Design, Challenges and Prospects

Claudia Cristescu

## Introduction

This chapter summarizes the main findings of a doctoral research carried out in order to investigate the "Knowledge Partnerships" between Intelligence Community (IC) and Academia by arguing: (1) the benefits of the academic outreach of the intelligence analysis; (2) the necessity for the institutionalisation of the intelligence curriculum within the Romanian civil universities towards the valorisation of intelligence agencies as a defining component of the democratic state construction.

The problem of the research is represented by the identification of the theoretical, methodological and applicative fundamentals of intelligence education. The purpose of the research is to conceptualize and draft the intelligence curriculum to implement it in the Romanian civil universities. The premise of our research is represented mainly by the implications of twenty-first century intelligence for public policy and national security decision-making process, given the extensive use of intelligence in support of homeland security at present, law enforcement, and the impact of intelligence services on the conduct of international relations (IR).

## Education as a National Security Issue

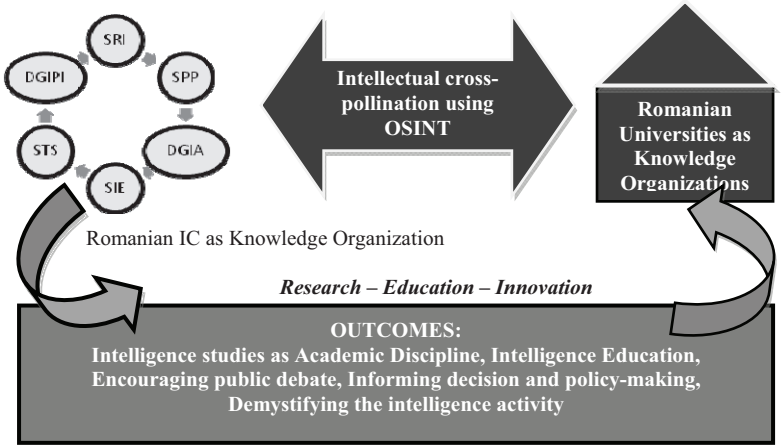
The major assumption underlying this research is that education can be regarded as a national security issue. Moreover, according to a recent report of the US Council on Foreign Relations, "human capital will determine power in the current century, and the failure to produce that capital will undermine national security" (Klein & Rice 2012, 7). Thus, in the conceptual register of the research, we examine education as a national

competitiveness factor (*Strategia Naţională de Apărare* 7) generating "government effectiveness" (Kaufmann 2003, 5) by consolidating: (a) the civil society through informed citizens (i.e. promoting an active and informed citizenship, bringing the information regarding decisional resorts closer to the public opinion), and; (b) the civil democratic control over the intelligence structures (*Strategia Naţională de Securitate* 48). In contrast, we argue the lack of intelligence education as a potential vulnerability to national security, to the extent that it generates deviations such as the politicisation of the intelligence activity (Johnson & Wirtz 2004) or the political autonomisation of the intelligence structures by manifesting praetorian and dictatorship tendencies, according to the Informative Bonapartism theory (Giannulli 2009, 326). The debate regarding the interventionism of the intelligence authorities on the sphere of politics can lead to the problem regarding the "deviation of intelligence services" (De Lutiis 2010, 324) or "deviated secret services" (Cipriani 2002, XXI).

## IC—Academia Knowledge Partnership

In order to avoid similar slippages, and considering the benefits of the exploitation of social scientific knowledge in the intelligence analysis as stated by US National Research Council (2011), we drafted a coherent strategy in this regard, substantiated as institutionalisation of the "knowledge partnerships" (see Figure 1-5 below) between Academia and IC.

**Figure 1-5. IC—Academia Partnership to Enhance Knowledge**



Related to the context of knowledge partnership institutionalisation, using the curriculum benchmarking technique, we have assessed the status of intelligence studies, on the one hand, as an academic subject—by revealing the institutionalisation of the intelligence education in the Euro-Atlantic area—and, on the other, as a scientific investigation field typical to a distinct epistemic community.

## Conceptual stages of Intelligence Studies

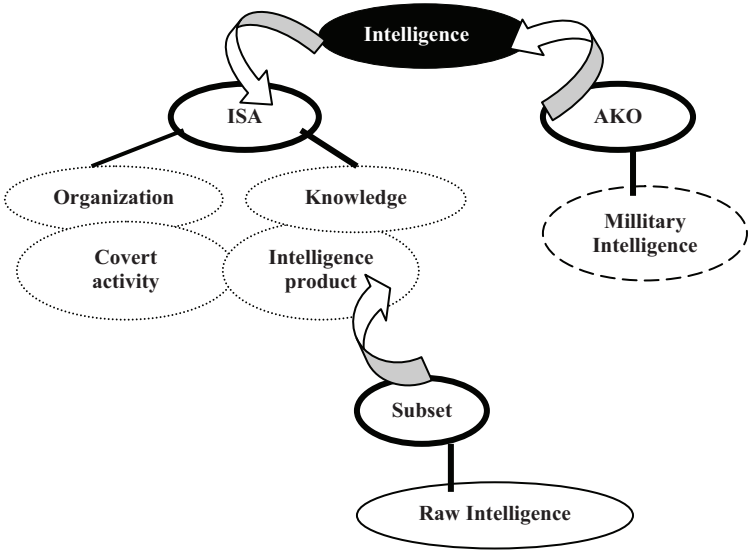
Intelligence education, essential in the development of a security and intelligence culture, can be raised as a problem through the praxeological function of scientific knowledge (Connolly 1993, 203; Koertge 2005, 4; Fisichella 2007, 41) related to the internalisation of the knowledge disseminated by means of scientific research as a foundation for institutional performance, as well as by defining the intelligence taxonomy by using the language theory, the theory of conceptual history or William Gallie's "essentially contested concepts" (Connolly 1993, 10). The conceptual stages of a discipline or field guide their scientific investigation and, as Thomas points out, "An indicator of maturity in any field of investigation is the transition from disputes over conceptual definitions to the use of concepts that explain cause and effect relationships" (Stafford 1988, 236). In this regard, a Romanian intelligence theory should consider the national empirical (praxis) and linguistic context (see Figures 1-6 and 1-7 below). The implications of such a prescriptive approach impact intelligence studies teaching methodology at civil academic level as well as intelligence academic curriculum.

## Academic Institutionalisation Framework of Intelligence Studies—Opportunities and Difficulties

Using a mixed methodological research design and the triangulation technique, the following have been successively assessed: (a) Perceptions and attitudes of the university students (158 respondents) regarding the role and activity of the national security structures in Romania; (b) Opinions and perceptions of the Timişoara journalists (10 respondents) regarding the participation of mass-media to the exercising of democratic control on the intelligence services; (c) Intelligence studies in the Romanian civil higher education, a qualitative study regarding the university specialists and experts (11 respondents); (d) Degree of academic institutionalisation of the intelligence matter by analyzing the frequency of the graduation theses and master's theses; (e) Current reading

trends concerning the specific users of local public and university libraries (BCUT, BCUPT, BJT) by analyzing the document circulation and the lending transactions of documents with thematic content relating to espionage, secret services, national security, terrorism (circulation studies). The necessity for academic institutionalisation of intelligence studies was also argued by performing a SWOT analysis with respect to the benefits of imposing the intelligence studies in the Romanian academia and the implications regarding the exclusion of the intelligence curriculum from the educational program of universities.

**Figure 1-6. Intelligence—Taxonomic relations**




## Interpretation of Research Results

The conclusions of the applied sociological research contributed to the orientation of the curricular design approach of the intelligence studies at the Romanian civil university level, to the extent to which they revealed: (a) Information and basic knowledge deficit of the student population concerning the role and activities developed by the intelligence services; the scientific and cognitive deficit is doubled by the prevalence of using the media as a source of information in this field, to the detriment of scientific and academic sources; (b) Insufficiency or non-existence of

academic debate with respect to intelligence, claimed by 65.0%, respectively 17.8% of the investigated subjects; (c) the image and the institutional representation defined amongst the students within the university centre in Timişoara are that of intelligence structures capable to a limited extent to guarantee the national security of Romania, characterized by lack of transparency and objectivity, which would not operate based on the principles of legality, professionalism, political independence and would display non-democratic deviations. Seventy-seven percent of the respondents have little confidence or no confidence at all in the capacity of the Romanian secret services to ensure national security, or they would rather trust the army. Moreover, 71% of the respondents believe that in Romania at present, there are situations where citizens are being monitored by secret services for political reasons; (d) the regressive trend regarding the interest in information and reading intelligence and security studies, proven by the dynamic of the loan transactions with respect to bibliographical documents with thematic content related to espionage, secret services, national security, terrorism; (e) the perception of local journalists that the mass media can only guarantee limited correct information regarding public opinion, as far as national safety and security are concerned, from considerations related to the insufficient quality and volume of the information provided by the media relations offices of the intelligence services, the unfavourable appreciation of the existing relations between the media and the intelligence services, classified as "inappropriate," the insufficiency of legislative instruments allowing the journalists to remain informed about the activity of the intelligence services, and the low level of institutional transparency of the intelligence services; (f) the opportunity—indicated by the interviewed university specialists and experts—for academic institutionalisation of the intelligence studies following the trajectory of a master's program within the field of International Relations and European Studies.

## Implications of the Study—Prototype of the "Intelligence Studies" MA program

Based on the results of the sociological research, the curricular design of the intelligence studies as Masters educational program has been performed, taking into consideration the following dimensions: Description of qualification, qualification identification elements, summary of the qualification referential, and an educational plan structured on seventeen study disciplines (units), with specific contents (see Table 1-3 below). In

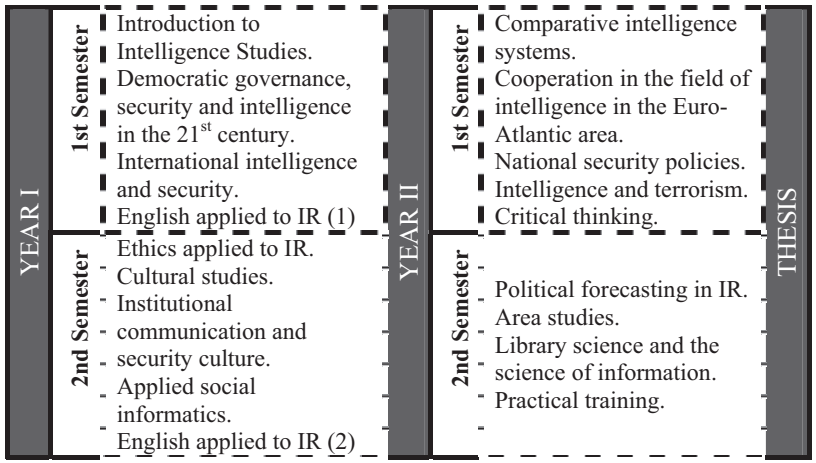
compliance with the requirements stipulated in the "Methodology for the Drafting of the National Qualifications Framework for Higher Education" (Zaharia 2009, 39), the description of the qualification also included: (a) the principles that guided the organisation of the curriculum and methodological suggestions; (b) the prerequisites for accessing the qualification, the admittance method and selection for the MA program and the occupational opportunities associated with the qualification; (c) the educational ideal, educational purpose, addressability and mission of the qualification; (d) general objectives, intermediate objectives (the purposes of the study disciplines), operational educational objectives (Cognitive objectives, Emotional objectives, Psychomotor objectives).

**Figure 1-7. "Intelligence": Conceptual system**

| Host concept **INTELLIGENCE** | | | | |
|---|---|---|---|---|
| **Cluster concept** | Domestic intel Foreign intel ↓ | Osint, humint sigint, imint ↓ | Raw intel Finished intel ↓ | Military Intel Criminal intel ↓ |
| **Defining criteria** | Geographic origin of the collected Intel | Information sources (collection disciplines) | Level of information processing | Intelligence producer |
| **Empirical standards (praxis)/Particular set of practices/ Range of application/Features of actions & situations: Part of the operational or campaign planning activity: combat operations, optimising political decision-making and policy making etc.** | | | | |

Now, more than ever, intelligence studies find their opportunity on the academic research agenda as an instrument of scientific investigation regarding the functions and activities of the intelligence services and relations with political decision makers, as well as a means of disseminating the security culture among citizens. The development of intelligence studies as a legitimate field of study and research materializes only through the willingness and contribution of the IC members to establish the coordinates of a mutually beneficial partnership with academia, following the encouragement of our transatlantic partners, addressed through the voice of the Director of CIA's Centre for the Study of Intelligence (Salvetti 1999, 16) to the universities' representatives: "Let us be your guide. We want to be a resource to you. We can form a very successful partnership to advance the study of intelligence in universities."

**Table 1-3. Intelligence studies: Educational program**




## References

Cipriani, G. (2002). *Lo stato invisibile* [The Invisible State]. Milano: Sperling & Kupfer.

Connolly, W. (1993). *The Terms of Political Discourse*. Oxford: Blakwell Publishers.

De Lutiis, G. (2010). *I servizi segreti in Italia* [The Intelligence Services in Italy]. Milano: Sperling & Kupfer.

Fisichella, D. (2007). *Ştiinţa politică. Probleme, concepte, teorii* [Political Science. Concepts, Theories and Problems]. Iaşi: Polirom.

Giannulli, A. (2009). *Come funzionano i servizi segreti* [How Intelligence Works]. Milano: Ponte ale Grazie.

Johnson, L. & Wirtz, J. (2004). *Strategic Intelligence. Windows into a Secret World*. Los Angeles, CA: Roxbury Publishing Company.

Kaufmann, D. (2003). *Rethinking Governance: Empirical Lessons Challenge Orthodoxy*. World Bank.

Klein, J. I. & Rice, C. (2012). *U.S. Education Reform and National Security*. New York, NY: Council of Foreign Relations.

Koertge, N. (2005). *Scientific Values and Civic Virtues*. Oxford: Oxford University Press.

National Research Council. (2011). *Intelligence Analysis for Tomorrow: Advances from the Behavioural and Social Sciences*. Washington, DC: National Academies Press.

Salvetti, L. D. (1999). *Teaching Intelligence: Working Together To Build a Discipline*. Washington, DC: Joint Military Intelligence College.

Stafford, T. (1988). "Assessing Current Intelligence Studies." *International Journal of Intelligence and Counter Intelligence* 2 (2): 217–244.

*Strategia Naţională de Apărare* [Romanian National Defence Strategy]. (2010). http://www.presidency.ro/static/ordine/SNAp/SNAp.pdf.

*Strategia Naţională de Securitate a României* [Romanian National Security Strategy]. (2007). http://www.presidency.ro/static/ordine/SSNR/SSNR.pdf.

Zaharia, S. E. (2009). *Methodology for the Drafting of the National Qualifications Framework for Higher Education*. Bucureşti: ACPART.

# FAMILY IN THE THERAPEUTIC ADHERENCE OF PSYCHOTIC PATIENTS

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AND ELENA-DANIELA ŞTEFAN

## Introduction

The aim of this chapter is to assess the role played by families of psychotic patients in obtaining therapeutic adherence. Adherence to treatment refers to the situation in which patients are willingly and actively involved in their treatment. Compliance, on the other hand, describes a treatment setting that is compulsory and passive to patients. We use adherence to emphasize the therapeutic alliance established between patients and physicians. Adherence is expressed by the percentage of prescribed doses of the medication actually taken by the patient over a specified period (Osterberg & Blaschke 2005). Non-adherence is defined in various ways, from stopping the medication for at least one week (Zygmunt et al. 2002) to nonattendance at predefined control visits (Nosé et al. 2003). Among schizophrenic patients, the rate of non-adherence is between 70 and 80% (Breen & Thornhill 1998). Forty percent of patients with bipolar disorder partially adhere to treatment (Colom et al. 2000), which means patients are taking less than 30% of their medication (Scott & Pope 2002). The mean adherence rate for patients receiving antipsychotics was 58%, ranging within 24 to 90%, while in the case of patients with physical disorders, the mean adherence rate was 76%, ranging within 60 to 92% (Cramer & Rosenheck 1998). Non-adherence to therapy may result in a high rate of recurrences. Fenton, citing seven studies, states that non-adherent patients have a 3.7 times higher risk of recurrence than adherent patients (Fenton et al. 1997). Recurrences may result in a gradual loss of cortical grey matter and a lesser response to pharmacological treatment (Penn et al. 2005). Schizophrenia and bipolar disorder are characterized by recurring episodes separated by asymptomatic or less symptomatic intervals of variable

duration. This may result in adherence to treatment decreases or is lost over time. In patients with first episode of schizophrenia, non-adherence to treatment ranged between 48 to 50% at a one-year follow up, increasing to 74% at a two-year follow up (Babiker 1986). There is evidence that family psychoeducation and/or family therapy are effective as adjunctive treatment to medication in reducing recurrences, both in schizophrenic (McFarlane et al. 2003) and in bipolar patients (Miklowitz et al. 2003). According to Zygmunt, concrete problem-solving strategies and motivational approaches are more likely to help increase treatment adherence, while more ineffective were psychoeducation and family therapy (Zygmunt et al. 2002). These negative conclusions are the result of several inclusion biases, such as studies in which adherence was not the primary goal, studies performed only on schizophrenic patients, studies focusing only on adherence to medication and not to scheduled appointments (Nosé et al. 2003). The stress-vulnerability model states that the risk of relapses or recurrences depends on the ratio between stress and vulnerability levels. Stress refers to negative life events significant to the patient, or conflicts within the family. Vulnerability is the result of a certain genetic diathesis, or of the lack of resiliency factors such as family or social support (emotional and/or instrumental). Discontinuing medication may circumstantially increase vulnerability. Schizophrenic patients with high emotional-expressivity families are more prone to recurrences. High EE families are over-involved (minimal affective distance between family members), or excessively critical towards the patient (Brown et al. 1962). Family may show high EE levels if patients' recurrences are frequent, despite treatment (Leff et al. 1962). In schizophrenic patients, there is a relationship between neurocognition and social functioning, which remains consistent over time (Addington & Addington 1999). As a consequence, when assessing patient-family interactions, it is essential to understand that cognitive dysfunctions in psychotic patients may lead to disturbed processing of verbal and nonverbal messages expressed by other people. Schizophrenic patients establishing a therapeutic alliance with their therapists in the first six months also have a better adherence to treatment, either therapy or medication (Frank & Gunderson 1990). In addition, a low treatment involvement of families of schizophrenic patients associates with non-adherence (Olfson et al. 2000).

## Method

Treatment adherence is difficult to assess. While attending scheduled visits is easy to objectivise, this is not the case for medication intake. Non-

adherence can be measured more accurately than adherence because it reflects in the number of recurrences. Since recurrences reflect the balance between stress and vulnerability, we considered other factors such as high stress levels (high EE) and vulnerability due to lack of support. We included thirty patients (twelve men and eighteen women) in the study according to the following inclusion criteria: subjects upon first admission (and onset of the disorder) in the Timisoara Psychiatric Clinic, Department II, during 2006–2009; subjects monitored in ambulatory by the same physicians who managed the case during hospitalization; subjects with one of the following diagnoses according to ICD 10-WHO—schizophrenia, schizoaffective disorder, bipolar disorder, acute and transient psychotic disorders; subjects receiving psychoeducation and family therapy as adjunctive treatment (as inpatients and outpatients); voluntary subjects without any motivations from the researchers. We excluded patients with drug or alcohol harmful use or dependence. We assessed the following data: the number of recurrences during a two-year follow-up period, the duration of untreated psychosis (DUP), the way patients have entered the psychiatric circuit, the patients' family type, the total duration of treatment (as inpatients and outpatients), the number of outpatients attending appointments at 6-, 12- and 24-month follow ups. The authors have classified the patients' families into three categories: supportive or non-supportive, treatment involved or non-involved and with or without high EE. We assessed supportive families according to the following criteria: promptness to accompany the patient at hospital admission or discharge, at scheduled outpatient visits or the pharmacy, promptness to visit the patient and fulfil their needs during hospitalization. We assessed treatment-involved families according to the following criteria: manifesting interest for diagnosis and treatment (reflected in questioning the physician and reading psychoeducational materials), attending psychoeducation and family therapy, accompanying the patient at outpatient's visits when needed. We assessed families with or without high EE according to the presence of overt conflicts in the family (verbal and/or physical violence) recorded by the patient and family, or observed by the physicians and medical staff.

## Results

According to ICD 10-WHO criteria, the subject sample comprised 11 subjects with schizophrenia (36.7%), 11 with bipolar disorder (36.7%), 6 with schizoaffective disorder (20%) and 2 subjects with acute and transient psychotic disorders (6.6%). We admitted most patients (26 cases, 86.7%)

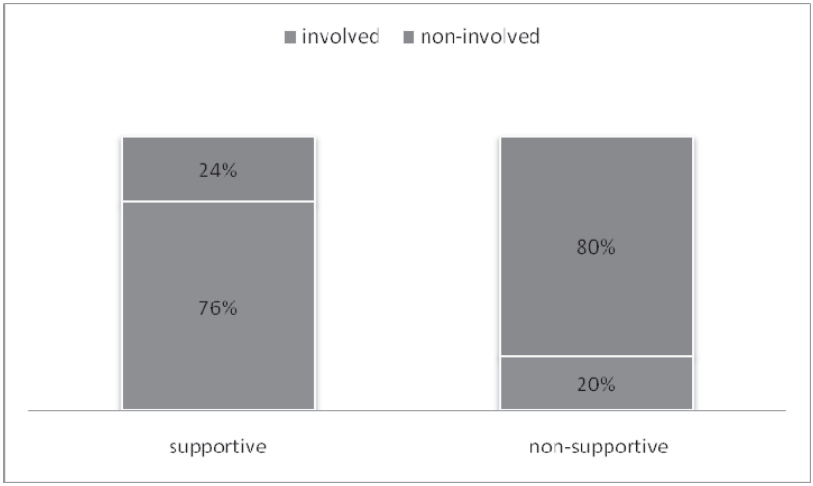
through the emergency service. Regarding the period between the presumed onset of psychosis and the first hospital admission and treatment (DUP), the patients fell into three categories: with DUP under 1 month (50%), with DUP between 1 and 6 months (40%), with DUP between 6 months and 1 year (6.7%) and DUP over 1 year (3.3%). We observed that a short DUP (one month or less) prevails in patients with schizoaffective disorder (83.3% of schizoaffective patients) and also in patients with bipolar disorder (63.6% of the bipolar patients). Most of the schizophrenic patients had a DUP ranging between 1 to 6 months (45.4%). $\chi^2$ test shows no significant statistical differences ($\chi^2$=11.79, p=0.225) which was probably due to the small number of cases. Eighteen (60.0%) of the 30 patients included in the study had no recurrence since their first hospitalization, 8 (26.7%) had one single recurrence (two hospital admissions including the initial onset), 3 patients (10.0%) had two recurrences (three admissions including the initial onset), and only one patient (3.3%) had more than two recurrences. The highest number of recurrences recorded in a subject was three.

Out of the 30 patients included in the study, 24 patients (80.0%) have discontinued dispensarization in the first two years after the onset of the disorder. The discontinuation of therapy occurred in 6 patients only (20%). The patients who discontinued the therapy have an average period without treatment of 54.83 weeks (standard deviation=28.3 weeks). The longest period a patient has spent without treatment was 92 weeks and the shortest 20 weeks. For these patients, the time spent under treatment during the first two years since the onset represents an average of 49.2 week (standard deviation=28.3 weeks), with the longest period of therapy at 84 weeks and the shortest at 12 weeks. Patients stopped to attend the psychiatry ambulatory after an average of 24.2 weeks after the first admission (standard deviation=20.04 weeks), with the longest period at 52.3 weeks and the shortest at 4 weeks.

At six-month assessment, 27 patients (90.0%) appeared for evaluation, while at one year we assessed 26 patients (86.7%) and two years 26 patients (86.7%). Regarding patients' families, we observed that 25 patients (83.3%) come from supportive families, and 20 patients have families involved in their treatment. Only 7 patients (23.3%) have high EE families. A total of 19 subjects (63.3%) have families that are both supportive and involved in treatment. Only 4 (13.3%) of the remaining 11 patients come from families that are at the same time non-supportive and not involved, which gives 80% of patients with non-supportive families (see Figure 1-8 below). The differences are statistically significant

($\chi^2$=5.88, p=0.015) indicating that non-supportive families are more frequently not involved in treatment.

**Figure 1-8. Family supportiveness and treatment involvement**




Out of the 5 subjects with non-supportive families, only 1 patient (20.0%) has a family with high EE (see Figure 1-9 below). There are no statistically significant differences ($\chi^2$=0.037, p=0.84) indicating that non-supportive families are not more frequent among those with high EE. Out of the 10 subjects with non-involved families, only 1 patient (10%) belongs to a family with high EE (figure 1-10). There are no statistically significant differences ($\chi^2$=1.49, p=0.22) indicating that non-involved families are not more frequent among those with high EE. The family's involvement in treatment or being supportive/non-supportive with the patient does not have a direct influence on the number of recurrences the patient has, as shown by the results of the Kolmogorov Smirnov nonparametric test for the equality of continuous. Emotional expressivity within the family influences the number of recurrences—patients with high EE families have significantly more hospital admissions during the first two years from the onset than those without high EE, as shown by the results of the Kolmogorov Smirnov nonparametric test. Statistical analysis of aspects followed in this study shows that:

- There are no statistically significant correlations between the DUP and the number of recurrences (Spearman R=0.054, p>0.05).

- There are no statistically significant correlations between the DUP and the duration of the first hospital admission (Spearman R=0.185, p>0.05).
- There is no statistical relation between the number of relapses and the diagnosis (ANOVA analysis).

**Figure 1-9. Family emotional expressivity and supportiveness**

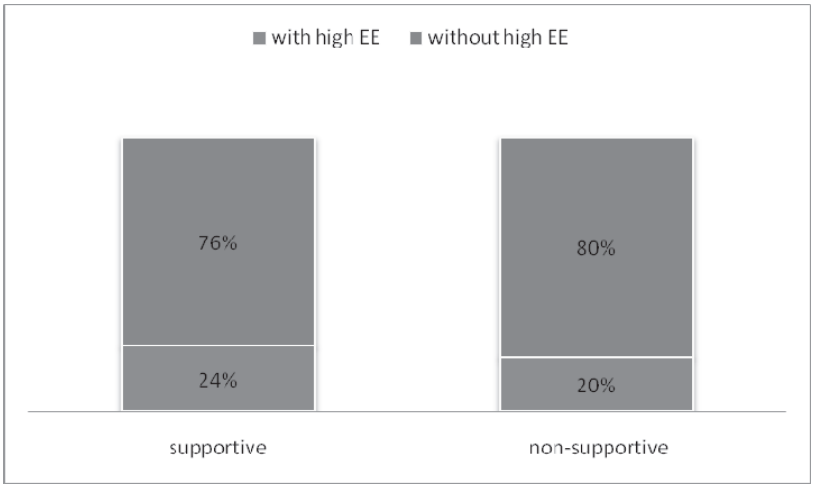
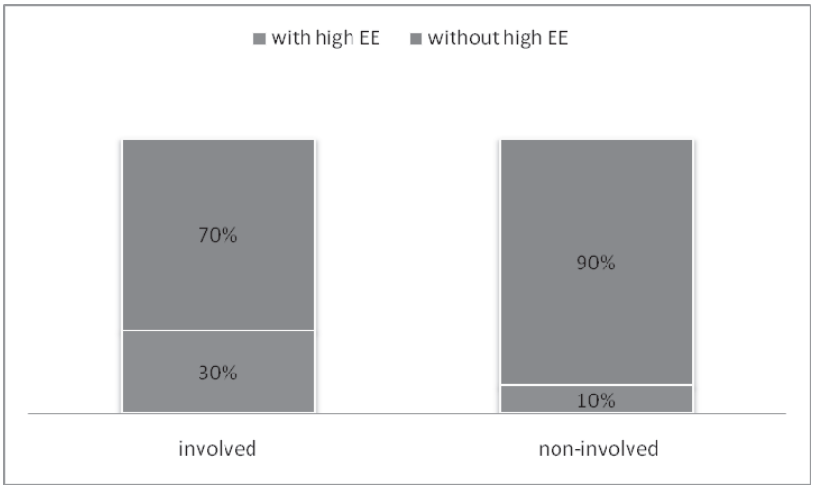



**Figure 1-10. Family emotional expressivity and treatment involvement**



- There is no statistically significant relation between the duration of treatment, the no-treatment period, and the diagnosis (ANOVA analysis).
- There are no statistical differences amongst family attitudes and the period after which patients stop dispensarization and treatment, or amongst family attitudes and periods spent on treatment or without it (Kolmogorov Smirnov nonparametric test).

## Conclusions

An increased rate of admissions through emergency services may indicate that patients and their families are often reluctant and delay asking for help for several reasons until the intensity of the psychotic symptoms requires emergency hospitalization. In addition, family doctors may be circumspect in referring their patients for specialized treatment for reasons such as previous negative experiences with mental health services, lack of information about mental health services and how to access them, fear of offending the families by referring the patient to a mental health service. The non-involvement of families in treatment is quite frequent (10 subjects, 33.3%) and more common than patient's lack of family support (5 subjects, 16.7%). Non-supporting families tend to be also not involved in treatment. Family's EE influences the number of recurrences.P atients with high EE families interrupt dispensarization sooner but spend less time without treatment. Patients with non-involved families tend to have a longer period without treatment then with treatment.

## References

Addington, J. & Addington, D. (1999) "Neurocognitive and Social Functioning in Schizophrenia." *Schizophrenia Bulletin* 25 (1):173–182.

Babiker, I. E. (1986) "Noncompliance in Schizophrenia." *Psychiatric Developments* 4: 329–337.

Breen, R. & Thornhill, J. T. (1998) "Noncompliance with Medication for Psychiatric Disorders. Reasons and Remedies." *CNS Drugs* 9: 457–471.

Brown, G. W., Monk, E. M., Carstairs, G. M. & Wing, J. K. (1962). "Influence of Family Life on the Course of Schizophrenic Illness." *British Journal of Preventive & Social Medicine* 16: 55.

Colom, F., Vieta, E., Martínez-Arán, A., Reinares, M., Benabarre, A. & Gastó, C. (2000). "Clinical Factors Associated with Treatment

Noncompliance in Euthymic Bipolar Patients." *Journal of Clinical Psychiatry* 61 (8): 549–55.

Cramer, J. A. & Rosenheck, R. (1998) "Compliance with Medication Regimens for Mental and Physical Disorders." *Psychiatric Services* 49: 196–201.

Fenton, W. S., Blyler, C. & Heinssen, R. K. (1997) "Determinants of Medication Compliance in Schizophrenia: Empirical and Clinical Findings." *Schizophrenia Bulletin* 23: 637–651.

Frank, A. F. & Gunderson, J. G. (1990). "The Role of the Therapeutic Alliance in the Treatment of Schizophrenia." *Archives of General Psychiatry* 47: 228–236.

Leff, J., Kuipers, L., Berkowitz, R., Eberlein-Vries, R. & Sturgeon, D. (1982). "A Controlled Trial of Social Intervention in the Families of Schizophrenic Patients." *The British Journal of Psychiatry* 141: 121–134.

McFarlane, W. R., Dixon, L., Lukens, E. & Lucksted, A. (2003). "Family Psychoeducation and Schizophrenia: A Review of the Literature." *Journal of Marital and Family Therapy* 29 (2): 223–245.

Miklowitz, D. J., Richards, J. A., George, E. L., Frank, E., Suddath, R. L., Powell, K. B. & Sacher, J. A. (2003). "Integrated Family and Individual Therapy for Bipolar Disorder: Results of a Treatment Development Study." *Journal of Clinical Psychiatry* 64: 182–191.

Nosé, M., Barbui, C., Gray, R. & Tansella, M. (2003). "Clinical Interventions for Treatment Non-Adherence in Psychosis: Meta-Analysis." *British Journal of Psychiatry* 183: 197–206.

Olfson, M., Mechanic, D., Hansell, S., Boyer, C. A., Walkup, J. & Weiden, P. J. (2000). "Predicting Medication Noncompliance After Hospital Discharge Among Patients With Schizophrenia." *Psychiatric Services* 51: 216–222.

Osterberg, L. & Blaschke, T. (2005). "Adherence to Medication." *The New England Journal of Medicine* 353: 487-97.

Penn, D. L., Waldheter, E. J., Perkins, D. O., Mueser, K. T. & Lieberman, J. A. (2005). "Psychosocial Treatment for First-Episode Psychosis: A Research Update." *The American Journal of Psychiatry* 162: 2220–2220.

Scott, J. & Pope, M. (2002). "Self-reported Adherence to Treatment with Mood Stabilizers, Plasma Levels, and Psychiatric Hospitalization." *The American Journal of Psychiatry* 159: 1927–1929.

Zygmunt, A., Olfson, M., Boyer, C. A. & Mechanic, D. (2002). "Interventions to Improve Medication Adherence in Schizophrenia." *The American Journal of Psychiatry* 159: 1653–1664.

# DEPRESSIVE PATIENTS WITH CHRONIC MEDICAL COMORBIDITY: PSYCHOSOCIAL CHARACTERISTICS

VIRGIL-RADU ENĂTESCU
AND ILEANA ENĂTESCU

## Introduction

In this chapter, the main purpose was to find the specific profiles of psychosocial and socio-demographical factors that could be related to the increased risk of developing chronic medical comorbidities in subjects with unipolar depression. The importance of these concerns has been argued by several pieces of evidence. First, according to OMS researches in 2020, unipolar depression will be the second cause of disability, taking into account all human diseases (Lopez and Murray 1996, 1997). The aforementioned authors have also established a much-desired balance between physical diseases and psychiatric disorders in terms of negative socio-economic outcome and degradation in well-being status. Until then, figures related to morbidity and mortality were taken into consideration. Second, according to the National Comorbidity Survey Replication (NCS-R), they found that more than 68% of adults with a mental disorder have reported at least one general medical disease. Therefor adults with severe mental disorders are more likely to develop a general medical condition than those without mental illnesses (Alegria et al. 2003). Finally, a prominent epidemiological study has found unipolar depression the most prevalent psychiatric disorder in the general population, if it is considered a distinct nosologic entity (Kessler et al. 2005). On the other hand, there were several studies that had evidenced the contribution of some psychological and social factors that are involved in the emergence of chronic medical comorbid diseases in mentally ill patients (Stansfeld & Rasul 2007).

## Method

**Study Design and Procedure**. The study concerned the longitudinal research of 248 subjects with Recurrent Depressive Disorder (RDD) admitted to the Psychiatry Clinic of Timisoara during 2001 to 2005. The method relied on consulting medical data records, sheet data collection including all socio-demographical data, anamnesis, clinical and pattern of development data. There were two key moments in this analysis: the onset of psychiatric disorder and the previous or current admission in the Psychiatric Clinic. We made two control samples: (1) 44 subjects with Bipolar Affective Disorder (BAD); (2) 59 subjects with Persistent Delusional Disorder (PDD). We assigned all diagnostics according to ICD-10 (WHO, 1992). The cross-sectional research regarded the coexistence of medical comorbidities along with personality traits as well as attached coping attitudes in depressive subjects. The method consisted of sheet data collection and direct interview survey using a number of scales such as PAS-I (Personality Assessment Schedule–PAS I [Tyrer et al. 2007]), KSP (Karolinska Sjukhusets Personlighetsinventoriurn [Schalling et al. 1987]) and COPE (Coping Orientations to Problem Experience [Carver et al. 1989]). The cross-sectional study has included just one group that consisted of 45 subjects with Recurrent Depressive Disorder (RDD), according to ICD-10. We grouped chronic medical comorbidities in 12 clusters for both studies. For reasons of statistical analysis, we generated a new item called general medical comorbidity (that included all previous clusters taken together) and the personality disorders and traits were regrouped as DSM-IV clusters of personality (APA 1994). The statistical analysis processed only the items referring to general medical comorbidity and cardiovascular comorbidity (because it was the most frequent type of medical comorbidity) due to the small size of the cross-sectional sample.

**Inclusion/Exclusion Criteria**.The inclusion criteria were subjects aged eighteen to sixty-five with recurrent depression. Exclusion criteria were other comorbid psychiatric disorders.

**Statistical Analysis**.For data statistical analysis, we used SPSS for Windows version 8.0.0 and EPI INFO. We used parametric and nonparametric tests, odd ratio, and we accepted as statistical significant if $p < 0.05$ and minim interval of confidence $OR > 1$.

## Results and Discussion

### Retrospective Research

Group descriptions: Studied sample—Recurrent Depressive Disorder (RDD): 24.6% males; average age = 49.43; S.D. = 8.54; Control sample 1—Bipolar Affective Disorder (BAD); 31.8% males; average age = 41.88; S.D. = 10.88; Control sample 2 – PDD. 28.8% males; average age = 48.22; S.D. = 8.15. Comparative analysis regarding homogeneity of demographical variables indicates:

- Age at current admission. In all three samples, we tested the differences between the age means with Levene test resulting in no significant differences between depressives and delusionals ($F=0.036$, $p=0.85$). We found significant differences between the bipolar group, persistent delusional and depressive groups regarding the age of onset ($F=5.77$, $p=0.017$) and total duration of disorders.
- Gender distribution. There were no significant differences in gender distribution in either group ($\chi^2=1.26$; $p=0.53$). There was a higher prevalence of depression in females. This could be related to socio-cultural considerations.
- Residence. The patients in the three groups were more often from urban areas and showed no significant differences ($\chi^2=2.10$; $p=0.35$).

### Analysis of Cumulated Group (All Three Samples):

- Magnitude of medical comorbidity in the studied sample compared with control samples. In the search for a relationship between depression and medical disorders, we found that depression was a risk factor and depressives had a four times higher probability of developing medical comorbidity at the time of evaluation [$X^2 = 28.63$; $p<0.001$; OR = 3.96 ($2.27<OR<6.91$)]. Conversely, bipolar affective disorder and persistent delusional disorder did not prove to be a risk factor for medical comorbidity [$X^2 = 28.63$; $p<0.001$; OR = 0.25 ($0.14<OR<0.44$)]. During the studied period, the figures for high blood pressure, coronary artery disease, diabetes mellitus, malignant tumours and cerebro-vascular diseases were significant higher in depressives than their prevalence in the general population of Timiş County in the same time.
- The specific socio-demographical characteristics in the depressive group that determines the incidence of medical diseases. The socio-

demographical characteristics that influence the occurrence of some chronic medical diseases were: higher current age and age of onset, and the decreased level of education (see Table 1-4 below). We consider that, along with residency (differences between urban versus rural areas), in Romania, the educational level is a true factor that influences the identification of most important health issues and the rapid referral to specialists.

**Table 1-4. Socio-demographical characteristics influencing physical health (medical comorbidity)**

| Inducing factors | Statistical Test | Significance |
|---|---|---|
| **Age of onset** | Pearson | 0.419; p<0.001* |
| **Current age** | Pearson | 0.351; p<0.001* |
| **Total duration of disorder** | Pearson | 0.087; p=0.10 |
| **Educational level** | Kendall | -0.151; p=0.001* |
| | Spearman | -0.179; p=0.001* |
| **Primary versus middle studies** | Test T | 1.91; p=0.58 |
| **Primary versus university studies** | Test T | 4.162; p<0.001* |
| **Middle versus university studies** | Test T | 3.175; p<0.001* |

** Statistically significant*

- The influence of personality structure profile on medical comorbidity in depression. We analyzed the personality structure depending on personality clusters existing in the DSM-IV diagnostic manual. We found that cluster C personality traits were significantly more correlated (p=0.024) with cardiovascular disease incidence. A dimensional approach of personality could be better in studying medical comorbidity in depressives. Thus, several articles indicate that there are high levels of neuroticism in those who developed medical comorbidities (Lyness et al. 1998). It is quite possible that cluster C traits of personality highly correlate with neuroticism from the dimensional approach of personality structure.

**Cross-sectional Research**

Group descriptions: Studied subjects with recurrent depressive disorder were more frequently females living in urban areas. This could be explained by socio-cultural factors according to which they have expectations from careerist women, demands that are more frequent and complex, such as to be a good mother and housewife, and earn as much money as is possible (see Table 1-5 below).

**Table 1-5. Socio-demographic distribution in the cross-sectional sample**

| Socio-demographic variables | Cross-sectional studied sample |
|---|---|
| **Age at onset** | m=41.24; d.s.=10.67 |
| **Current age (years)** | m=51.16; d.s.=7.95 |
| **Gender, n (%)** | |
| **Males** | 13 (28.8) |
| **Females** | 32 (71.2) |
| **Urban residence, n (%)** | 33 (73.33) |

**Personality Factors Correlated with Medical Comorbidity**

- Categorical personality profiles (assessed by the PAS-I scale) depending on the presence of medical comorbidities. We found that the general level of comorbidity has significant correlations with high scores in the schizoid subscale (p=0.049) and especially in borderline subscales (p=0.046) that could be explained by abnormal behaviours associated with these types of personality traits. Schizoid individuals could be detached by their own state of health and ignore it, while borderline subjects are more likely to use psychoactive substance or could have other unhealthy habits. In the particular cases of depressives who developed cardiovascular diseases, we found significantly higher scores in borderline (p=0.023) and the anxious (p=0.030) subscale. Thus, unlike borderline personality traits that could be associated with abnormal behaviours and habits, anxious personality traits could mediate their negative effects on physical health through the autonomic nervous system (primarily through its sympathetic component). After we regrouped the personalities traits according to DSM-IV clusters, we remarked on the high frequencies of general and cardiovascular diseases in patients with personality disorders from clusters A and B, differences confirmed by statistical analysis (the Kruskal Wallis test) (for cardiovascular diseases $\chi^2$=7.799, p=0.02; for general comorbidities $\chi^2$=11.60, p=0.003).
- Dimensional personality profiles according to the Karolinska Personality Scale depending on the presence of medical comorbidity. We associated the presence of general comorbidity with a high level of irritability-aggression in Karolinska scores. The difference was statistically significant (p=0.03) in comparison with no or other types of comorbidity. We thought these findings to be related to the presence

of cardiovascular pathology. From the dimensional perspective of personality, it is possible that traits such as irritability and aggression could be associated with severe negative emotions that can affect physical health through neuroendocrine mechanisms. Those who had cardiovascular comorbidities showed statistically significant higher levels in monotony avoidance score (p=0.021) that was correlated with a tendency for decreased levels of psychastenia (p=0.083) and a tendency for increased levels of indirect aggression (p=0.065). The revealed KSP profile of scores indicates that those who come to develop cardiovascular diseases have a higher level of mental energy, and also a significantly increased need to avoid monotony, which can lead to the behaviour of "sensation seeking" (Zuckerman 1971), often associated with addictive behaviours.

**Coping styles correlated to general medical comorbidity in depression.**

Regarding coping attitudes, those with general comorbidity show a significantly lower score in mental disengagement (p=0.048) and significantly higher levels for psychoactive substance use (p=0.009) in comparison with those without any comorbidity. Depressive subjects with cardiovascular comorbidity had statistically significant higher levels of psychoactive substance abuse (p=0.038) and statistically significant lower levels of acceptance (p=0.034) compared to subjects without this type of comorbidity. Beside the dysfunctional aspect of the coping style consisting in substance consumption, subjects with a higher level of cardiovascular comorbidities have expressed lower levels of acceptance. Hence, these subjects could experience more negative emotions mediated by psychosomatic mechanisms and thus converted in cardiovascular sufferance.

## Conclusions and Proposals

Recurrent depressive disorder should be considered a risk factor, at least for the appearance of some chronic medical diseases. In this retrospective research, the estimated risk caused by depression was significantly higher than that of the other two control diagnostics. Socio-demographic factors such as advanced onset age of depression and the last admission to psychiatric hospital, together with a lower level of education, could be considered as predisposing factors for medical comorbidities development in individuals with recurrent depression. In the retrospective research, those who have had cluster C personality traits were more exposed to developing somatic comorbidity. Inversely, cross-sectional research found

that individuals with clusters A and B pathological personality traits were more likely to develop this type of comorbidity. We believe that direct and standardized assessment of personality needs to be performed accurately in this type of research. From a dimensional perspective, significant personality features as irritability and aggression could result in general comorbidity occurrence. This study revealed that low level of psychastenia correlated with increased levels of indirect aggression increases the risks of cardiovascular comorbidity. Related to coping attitudes, subjects who have increased levels of psychoactive substance use are more predisposed to general comorbidity. In addition, low levels of acceptance significantly correlated with cardiovascular comorbidity occurrences. Despite the importance of clinical features of depression, in many cases coping styles profile and personality traits could be more useful in predicting incidence of medical comorbid diseases in depressive subjects. These factors could represent a significant interface between depression and somatic diseases. For the future, we suggest that more studies on the participation of socio-demographic and psychological factors should be performed. The results of these studies should be harnessed by multidisciplinary investigation teams made up of psychiatrists, psychologists and social workers.

## References

Alegria, M., Jackson, J. S., Kessler, R.C. & Takeuchi, D. (2003). *National Comorbidity Survey Replication (NCS-R), 2001–2003*. Ann Arbor: Inter-university Consortium for Political and Social Research.

American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Health Disorders*. Washington DC: Author.

Carver, C. S. & Scheier, M. F. (1989). "Assessing Coping Strategies: A Theoretically Based Approach." *Journal of Personality and Social Psychology* 56 (2): 267–283.

Frye, M. A., Altshuler, L. L., McElroy, S. L., Suppes, T., Keck, P. E., Denicoff, K., Nolen, W. A., Kupka, R., Leverich, G. S., Pollio, C., Grunze, H., Walden, J. & Post, R. M. (2003). "Gender Differences In Prevalence, Risk, and Clinical Correlates of Alcoholism Comorbidity in Bipolar Disorder." *American Journal of Psychiatry* 160 (5): 883–9.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R. & Walters, E. E. (2005). "Lifetime Prevalence and Age-of-Onset Distributions of DSM-IV Disorders in the National Comorbidity Survey Replication." *Archives of General Psychiatry* 62 (6): 593–602.

Kessler, R. C., Chiu, W. T., Demler, O., Merikangas, K. R. & Walters, E. E. (2005). "Prevalence, Severity, and Comorbidity of 12-Month DSM-

IV Disorders in the National Comorbidity Survey Replication." *Archives of General Psychiatry* 62 (6):617–627.

Lyness, J. M., Duberstein, P. R., King, D. A., Cox, C. & Caine, E. D. (1998). "Medical Illness Burden, Trait Neuroticism, and Depression in Older Primary Care Patients." *American Journal of Psychiatry* 155 (7): 969–971.

Murray C. J. L. & Lopez, A. D. (1997). "Alternative projections of mortality and disability by cause 1990–2020: Global Burden of Disease Study." *Lancet* 349: 1498–504.

Murray, C. J. L. & Lopez, A. D. (Eds.). (1996). *The global burden of disease: a comprehensive assessment of mortality and disability for diseases, injuries, and risk factors in 1990 and projected to 2020*. Cambridge, MA: Harvard University School of Public Health.

Schalling, D., Åsberg, M., Edman, G. & Oreland, I. (1987). "Markers for vulnerability to psychopathology. Temperament traits associated with platelet MAO activity." *Acta Psychiatrica Scandinavia* 76: 172–182.

Stansfeld, S. & Rasul, F. (2007). Chapter 3. In A. Steptoe (Ed.), *Psychosocial factors, depression and illness in Depression and Physical Illness*, 39–40. New York, NY: Cambridge University Press.

Tyrer, P., Coombs, N., Ibrahimi, F., Mathilakath, A., Bajaj, P., Ranger, M., Rao, B. & Din, R. (2007). "Critical developments in the assessment of personality disorder." *British Journal of Psychiatry* 190: s51–s59.

World Health Organisation. (1992). *ICD-10 Classifications of Mental and Behavioural Disorder: Clinical Descriptions and Diagnostic Guidelines*. Geneva: World Health Organisation.

Zuckerman, M. (1971). "Dimensions of sensation seeking." *Journal of Consulting and Clinical Psychology* 36: 45–52.

# School and Integrating Change: An Analysis of Cultural Dimensions

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## Introduction

The main premises of this analysis underline the considerable influence generated by cultural dimensions upon organizational behaviours, examining the way in which different subscales of social axioms and cultural dimensions from Hofstede's model could be related to personal autonomy, measured through self-esteem, locus of control and self-determination (Gavreliuc & Gavreliuc 2012).

The key challenge for the research is to establish a local diagnostic model based on social axioms. Conducted in the education field, the analysis aimed to identify the role of cultural factors in combination with personality factors in symptomatology with many communitarian pathological accents. Moreover, the examination revealed that the Romanian educational environment was the "causal source" for its failures (both systemic as well as personal), being the register of "mental inertia" of uncommitted rhetorical formulas found in such an "old mentality," "communist" and "conservative land," and the routines that inhabit the school system and its actors. For example, the Presidential Commission for Education report describes the residual nature of behaviour and value patterns of many conservative academic worlds, which are responsible for the "ineffective, irrelevant, unfair and poor quality" character of Romanian education (Miclea 2007, 7). However, when studying the "pathologies" of the system, an analysis is predominantly (inter)individual (strictly psychological) or structural (strictly sociological). Therefore, an approach that brings together individual register (personal), structural (societal), organizational and, especially, cultural appears to be both necessary and urgent. Assembled, therefore, these distinct theoretical and methodological positions, by signalling the observed trends and critical analysis in terms of the methodology it proposes, this study focuses on the relationship

between a number of personality variables (associated with personal autonomy, self-determination, self-esteem, locus of control) and a set of cultural dimensions (social axioms, factors Hofstede model).

## Cultural Dimensions as Key Factors of Identity Profiles

Hofstede's dimensions of culture have become the most widely used model for explaining different effects across cultures, describing it as stable and enduring but also somewhat changeable due to external forces (Hofstede, Hofstede & Minkov 2010). We are interested in this structurally theoretical approach because it is a correlative of Singelis's model of interdependence-independence, which is relevant at the interpersonal level (Singelis et al. 1999). Hofstede's five dimensions include: power distance, uncertainty avoidance, individualism/collectivism, masculinity/femininity and long-term orientation.

The dimension of individualism/collectivism has to do with the relationship the individual has with the group and more generally with society. Hofstede points out that the nature of this relationship determines not only how people think about themselves and their immediate group but the "structure and functioning of many institutions aside from the family." The dimension of individualism-collectivism refers to the relative priority given to individual goals as opposed to group goals. Individualist societies are those in which there is an emphasis on individual rights and where the goals of groups or collectives are subordinate to the goals of the individual. In collectivist societies, there is a greater emphasis placed on others than on the self, which leads to an emphasis on harmony and conformity and subordination of one's personal goals to those of the collective (Hofstede, Hofstede & Minkov 2010).

## Research Description—Cultural Dimensions, Social Axioms and Personal Autonomy in Romanian Education

This study was conducted on a sample of 522 subjects: 253 professors from high schools and 269 teachers from universities, from the humanistic and social sciences areas, and the instruments applied for cultural dimensions were: the Social Axioms Survey (SAS), which belongs to Michael Harris Bond and Kwok Leung; the Values Survey Module 94 (VSM94) for individual autonomy, realized by Geert Hofstede; the Self-Determination Scale (SDS) of K. M. Sheldon, R. M. Ryan and H. Rice, Locus of Control Scale (LCS), performed by J. Rotter, and; the self-esteem (RSE) of Morris Rosenberg.

The results associated with the cultural dimension of Hofstede's model (power distance [PD], individualism-collectivism [I/C], masculinity-feminity [M/F], Uncertainty Avoidance [UA], long / short term perspectives [L/ST P]) differ from other Romanian research, having worked with samples that have a different composition (national representative sample, or regional representative samples or groups of subjects formed by managers), and are described in a comparative analysis in Table 1-6 below. Thus, there is a very high score on power distance (PD=78), which in terms of behavioural descriptors (Hofstede, Hofstede & Minkov 2010) expresses a strong mutual distrust between organizational actors that are placed on different hierarchical positions.

**Table 1-6. Comparative results with other relevant research in Romania / Balkans—cultural dimensions proposed by Geert Hofstede (conventional test scores on VSM94)**

| Landmark research / cultural dimensions | PD | I/C | M/F | UA | L/ST P |
|---|---|---|---|---|---|
| This study, sample formed by teachers (human and social and political sciences) in Romania (Gavreliuc & Gavreliuc 2012) | 78 | 36 | 34 | 85 | 23 |
| Gavreliuc (2011) regional representative sample, Western Region, Romania, 1,058 subjects | 51 | 50 | 25 | 69 | 34 |
| Spector et al. (2001), Romania, 455 subjects, national sample | 26 | 47 | 23 | 50 | 55 |
| Luca (2005), representative national sample, 1,076 subjects | 29 | 49 | 39 | 61 | 42 |
| Romania: Hofstede estimates | 90 | 30 | 42 | 90 | - |
| Bulgaria: Hofstede estimates | 70 | 30 | 40 | 85 | - |
| Balkans: Hofstede estimates | 76 | 27 | 21 | 88 | - |

The specific score on this dimension was closer to the global assessments of Hofstede (Hofstede, Hofstede & Minkov 2010), but in the results obtained from Romanian samples (Spector et al. 2001; Luca 2005; Gavreliuc 2011) the distance from power was significantly lower. If past-cited research evokes "relational modernization" in the sense of taking over an organizational and interpersonal hierarchical model on a Western pattern, the trend in the study illustrates an important return on attitudinal towards a "non-partnership patterns," characterized by aggression, mutual mistrust, frustration and disengagement.

Tables 1-7 and 1-8 below indicate correlations between the variables included in the study. Moreover, the relationship between social cynicism and power distance indicates the fact that, the more cynical we are, the more authoritarian the subject becomes. Therefore, the typical, cynical subject is engaged in manipulative, suspicious and deceptive interactions,

where the significant other is closely monitored, and can be exploited for personal gain. This statement could indicate a faulty, vicious kind of interpersonal relationship where social interactions are perceived as well-constructed "strategies" for personal gain.

Results also suggest a significant relationship between social cynicism and fate control that expresses the personal option for defeated social attitudes. All these trends create a more accurate image of the social actor with behavioural tendencies toward self-promotion, emotional coldness, deceit and aggressiveness. Moreover, results show a positive relationship between collectivism and social cynicism, on the one hand, and between self-determination and uncertainty avoidance on the other. This statement would lead us to ideas of manipulation and deceit. Although the suspicion associated with cynical views may protect people from being deceived (Leung & Bond 2008), more often than not, studies have shown that cynicism can also reduce people's life satisfaction. As described in the studies of Leung and Bond (2004), social cynicism has a survival value because it helps individuals avoid social traps and scams. The second factor, labelled as social complexity, suggests a belief that there are several ways of achieving a given outcome and that a given person's conduct is inconsistent from situation to situation. A belief in the complexity of social life was associated with endorsement of both collaboration and compromise in resolving interpersonal interdependencies.

The worldview that there are several solutions to social issues is a functional cognitive resource in the contemporary social system. However, moderate scores on social complexity associated with higher scores on fate control and religiosity show poor familiarization with implicitly accepted behaviour which indicates a sense of diminished freedom of movement.

Thirdly, reward for application indicates unrealistic expectations concerning personal symbolic reward and shows a tendency of resentment towards the conditions of self-reality. The state of discontent characterizes the individualism of the one who perceives themself differently from what they in fact are.

Reward for application could be considered as a coping strategy that requires grappling with the problem actively. Study results show an identity pattern of inadequate reporting to individual biographic success. As Leung & Bond (2008) observed, if a society constantly faces distress associated with low living standards, social customs, structures, and institutions, subjects are likely to evolve into a configuration that is adaptive in face of such a hardship.

**Table 1-7. Correlations between Hofstede's model factors and the other analyzed variables (social axioms dimensions, personal autonomy)**

| Correlations N=522 | F1.Power distance | F2. individualism-collectivism | F3. Masculinity-feminity | F4.Uncertainty avoidance | F5. Long/short term perspective |
|---|---|---|---|---|---|
| E1. Awareness of self | .103* | .015 | .058 | -.643** | .414** |
| E2. Perceived choice | .035 | .010 | .048 | -.483** | .269** |
| E3. Self-determinations | .099* | .017 | .074 | -.786** | .479** |
| B. Self-esteem | -.048 | .014 | -.677** | .100* | -.085 |
| D. Locus of control | .036 | .029 | .048 | -.204** | .142** |
| F1. Power distance | 1 | .357** | .076 | -.048 | .100* |
| F2. Individualism-collectivism | .357** | 1 | -.005 | -.032 | .030 |
| F3. Masculinity-feminity | .076 | -.005 | 1 | -.058 | .080 |
| F4. Uncertainty avoidance | -.048 | -.032 | -.058 | 1 | -.572** |
| F5. Long/short term perspective | .100* | .030 | .080 | -.572** | 1 |
| C.I. Social cynicism | .392** | .255** | -.018 | -.123** | .139** |
| C.II. Reward for applications | .114** | .112* | -.130** | .086 | -.062 |
| C.III. Social complexity | .148** | .089* | -.084 | -.022 | .032 |
| C.IV. Fate control | .263** | .298** | .043 | -.163** | .134** |
| C.V. Religiosity | .228** | .210** | .006 | -.080 | .020 |

*p< 0.05. **p< 0.01

Religiosity was related to accommodation because of their mutual emphasis on sociality and agreeableness. Religiosity could be seen both as a general response to the spiritual need of humans and a solution to many social problems. As Leung & Bond (2008) point out, religiosity seems to be more concerned with solutions to the challenges of creating social order and encouraging civility than with the satisfaction of spiritual need. Study results indicate a high score on religiosity (only Islamic samples have registered higher scores), and we can relate this to the feeling of subjugating to a higher divine force, hence the inability to take life in our own hands.

Results on fate control indicate a tendency to accept any outcome without resisting. Fate control was related to accommodation because of the passivity in the face of external forces involved in the endorsement of fate's power. The belief that events in one's life are predetermined by fate may incline people towards acceptance of whatever happens. Therefore, passive acceptance and the feeling that all is in vain as the individual has no real control over their personal life suggest a fatalistic attitude. Fate control sharpens an identity pattern of implicit public disengagement. As

results indicate a higher fate control in the university sample, the present study has revealed that, as one climbs higher on the scale of more prestigious institutions, with higher symbolic capital, they are more prone to estimate that "the dice have been thrown."

**Table 1-8. Correlations between social axioms factors and the other analyzed variables (Hofstede's dimensions, personal autonomy)**

| Correlations N=522 | C.I. Social cynicism | C.II. Reward for applications | C.III. Social complexity | C.IV. Fate control | C.V. Religiosity |
|---|---|---|---|---|---|
| E1. Awareness of self | .132** | -.028 | .006 | .163** | .098* |
| E2. Perceived choice | .137** | -.098* | -.004 | .134** | .014 |
| E3. Self-determination | .186** | -.084 | .002 | .207** | .081 |
| B. Self-esteem | .076 | .144** | .125** | -.004 | .031 |
| D. Locus of control | .200** | -.124** | .116** | .180** | -.024 |
| F1. Power distance | .392** | .114** | .148** | .263** | .228** |
| F2. Individualism-collectivism | .255** | .112* | .089* | .298** | .210** |
| F3. Masculinity-feminity | -.018 | -.130** | -.084 | .043 | .006 |
| F4. Uncertainty avoidance | -.123** | .086 | -.022 | -.163** | -.080 |
| F5. Long/short term perspective | .139** | -.062 | .032 | .134** | .020 |
| C.I. Social cynicism | 1 | .170** | .280** | .310** | .223** |
| C.II. Reward for applications | .170** | 1 | .274** | -.129** | .304** |
| C.III. Social complexity | .280** | .274** | 1 | .070 | .136** |
| C.IV. Fate control | .310** | -.129** | .070 | 1 | .250** |
| C.V. Religiosity | .223** | .304** | .136** | .250** | 1 |

*p< 0.05, **p< 0.01

## Conclusions

When statistically-significant differences exist between the lots of subjects of pre-university and university areas, they suggest an attitudinal pattern of disengagement, more duplicitous and manipulative as they "advance" toward a socialized environment involving (quantitatively and quality) "more education," which is both against the intuition, but also different from the results obtained in other research with a similar design. In this respect, the university reveals itself to be a school of weakness and deceit. The factor that best anticipates the identity pattern of disengagement is, of course, the cultural dimension of social cynicism, an obstacle in the reform process. The implicit aspect of social axioms in general, and of social

cynicism in particular, as opposed to explicit and declared, attests the informality and latency of its nature. Therefore, "mental inertia" is implied without the full consciousness of the individual, conferring to the social axioms an unrevealed, internalized character. Despite appearances that would indicate that the university represents prestige, transparent competence, what this study reveals is an identity pattern of vulnerability (low self-determination, high fate control) and the need to compensate for this deficiency by illusory, duplicitous strategies (high social cynicism, low self-esteem and self-determination). The deficit of symbolic resources implicitly assumed is balanced through compensatory relational strategies that lack authenticity. Therefore, the emphasis is on what "they" seem to be, not on what "they" truly are. Despite limitations of the study undertaken, particularly related to data collection by processes which did not allow sampling, the results suggest a trend for schools in general and academics in particular to shape those of the "system" in a more centred way, rather than relational and institutional dependence and deceit.

## References

Gavreliuc, A. (2011). *Românііle din România. Individualism autarhic, tipare valorice transgeneraționale și autism social* [Romanias from Romania. Autarchic Individualism, Transgenerational Value Patterns and Social Autism]. Timișoara: Editura Universității de Vest.

Gavreliuc, Dana-Felicia & Gavreliuc, A. (2012). *Școală și schimbare socială. Axiome sociale, autonomie personală și integrarea schimbării în mediul educațional românesc* [School and Social Change. Social Axioms, Personal Autonomy and Change Integration in the Romanian Educational Environment]. Timișoara: Editura Universității de Vest.

Gavreliuc, Dana-Felicia. (2011). *Social axioms and personal autonomy in Romanian educational field*. http://doctorat.ubbcluj.ro/sustinerea_publica/rezumate/2011/psihologie/Gavreliuc_b.Pop_Dana-Felicia_En.pdf.

Hofstede, G., Hofstede, G. J., Minkov, M. (2010). *Cultures and Organizations: Software for the Mind*. New York: McGraw-Hill.

Leung, K. & Bond, M. H. (2008). Psycho-logic and Eco-logic: Insights from Social Axiom Dimensions. In F. van de Vijver, Dianne van Hemert & Y. P. Poortinga (Eds.), *Multilevel Analysis of Individuals and CulturesI,* 199–222. New York – London: Lawrence Erlbaum Associates.

Leung, K. Bond, M. H. (2004). "Social Axioms: A Model of Social Beliefs in Multi-Cultural Perspective." *Advances in Experimental*

*Social Psychology* 36: 119–197.

Luca, Adina. (2005). *Where Do We Stand? A Study on the Position of Romania on Hofstede's Cultural Dimensions.* http://www.mentality.ro/content_docs/exploring_mentality/research_papers/Adina%20Luca%20-%20WHERE%20DO%20WE%20STAND-%20A%20STUDY%20ON%20THE%20POSITION%20OF%20R.pdf

Miclea, M. (2007). *România educaţiei, România cercetării. Raportul Comisiei Prezidenţiale pentru analiza şi elaborarea politicilor din domeniile educaţiei şi cercetării* [Romania of Education, Romania of Research. The Presidential Comission Rapport for Analysis and Elaboration of Politics in the Field of Education]. Online: http://edu.presidency.ro/upload/raport_edu.pdf.

Singelis, T. M., Bond, M. H., Sharkey, W. F., Lai, C. S. Y. (1999). "Unpackaging Culture's Influence on Self-Esteem and Embarrassability: The Role of Self-Construals." *Journal of Cross-Cultural Psychology* 30 (3): 315–341.

Spector, P. E, Cooper, C. L., Sanchez, J. I., O'Driscoll, M., Sparks, Kate, Büssing, A., Dewe, P., Hart, P., Lu, L., Miller, Karen, Moraes, L. F. R. De., Ostrognay, Gabrielle M., Pagon, M., Pitariu, H., Poelmans, S., Radhakrishnan, P., Rusinova, Vesselina, Salamatov, V., Salgado, J., Shima, S., Siu, O. L., Stora, J. B., Teichmann, M., Theorell, T., Vlerick, P., Westman, Mina, Widerszal-Bazyl, Maria, Wong, P. & Yu, S. (2001). "Do National Levels of Individualism and Internal Locus of Control Relate to Well-Being: An Ecological Level International Study." *Journal of Organizational Behavior* 22 (8): 815–832.

# PERSONALITY AND MOTIVATION TO USE SOCIAL NETWORKING SITES

OANA GIUMANCA AND IRINA MACSINGA

## Introduction

Social networking sites (SNS) have become extremely popular, especially among high school and college students (Raacke & Bonds-Raacke 2008), mainly because they offer a controlled environment for self-presentation and an ideal setting for impression management (Mehdizadeh 2010). Despite increased attention directed towards Facebook in scientific studies from various countries, and the fact that in April 2011 there were 3.1 million accounts in Romania (e.g. 40% of all internet users and 14% of the entire population of Romania [Ulmanu 2011]), there are no scientific studies focusing on the motivation for using Facebook among Romanian users at this time.

## Theoretical Background

Given the popularity of such websites and their impact on the relations of the Romanian youth, it is essential to identify the personality traits and motivation which trigger the use of SNS. From a theoretical point of view, in this study we used the Big Five personality model, the perspective of Wheeless & Grotz regarding self-disclosure, and the approach of Bonds-Raacke & Raacke regarding the motivation for using SNS.

A synthesis of the Five-Factor model and its history (John & Naumann 2008) shows an increased interest in the scientific community in this model of personality. Studies that captured the relation between CMC and personality show a negative correlation between extraversion and agreeableness, on the one hand, and internet use among students, on the other (Landers & Lounsbury 2004). Other studies show that neuroticism and openness are reliable predictors for the time spent online (McElroy et al. 2007).

Online communication allows people to present themselves in a selective manner in front of their audience (Posey & Ellis 2007), and overcome their shyness (Stritzke, Nguyen & Durkin 2004). This study takes into consideration the model of Wheeless & Grotz, with the following dimensions: (a) control of depth (e.g. intimacy); (b) accuracy (e.g. precision and honesty); (c) amount (e.g. quantity); (d) valence (e.g. positive or negative self-image); (e) intent (e.g. purposeful self-disclosure).

Research shows that people create SNS accounts to maximize their pleasantness and to increase their social capital (Urista, Dong & Day 2008). So online "friends" carry a different meaning compared to face-to-face interactions due to the invisible audience. We relied on the theoretical model of Bonds-Raacke & Raacke (2010), which has 3 dimensions: information (use of SNS to collect and share information with several users); friendship (keeping in touch with friends); connection (new encounters with other users).

This study investigates the relationship between Facebook use-motives, the personality traits of users and self-disclosure. Of all the social networking sites, we chose Facebook because it has great popularity among university students (Raacke & Bonds-Raacke 2008) and represents one of the easiest communication methods with friends, acquaintances and even strangers (Christofides, Muise & Desmarais 2009). In this study, we used a sample made of students, because college students are vulnerable to the internet (Pempek, Yermolayeva & Calvert 2009).

Taking into consideration the above theoretical constructs, we intend to investigate (a) the relationships between these variables, and (b) gender differences in terms of motivation for SNS usage. The hypotheses were: H1—The higher the motivation for connection, the more accurately the subjects self-disclose online; H2—There is a significant positive correlation between agreeableness and friendship dimension; H3—The higher the extraversion, the more things individuals will self-disclose on SNS; H4—When it comes to using SNS, women are significantly more motivated on the friendship dimension compared to men.

## Materials and Methods

One hundred and two Facebook owners (50% F) were randomly recruited at the West University of Timişoara (Romania). Their age ranged between 22 and 33 (M = 26.06; SD = 3.13). The main criterion on which the subjects were sampled was that they owned a Facebook account. The questionnaires completed by the participants had three sections: general information about their accounts, psychological measures and demographic

information. Participants were also assured that all identifying information would be kept anonymous.

The questionnaire that investigated the dimensions of Facebook use has 3 dimensions: information, friendship and connection. We used a seven-point Likert scale (1—does not apply to me at all, and 7—definitely applies to me) (Bonds-Raacke & Raacke 2010). The items were translated into Romanian and then back translated; α Cronbach for each component is: .641 (information dimension); .795 (friendship dimension); .736 (connection dimension).

IPIP-50 has 5 dimensions: extraversion, agreeableness, conscientiousness, emotional stability and openness. It contains 50 items (10 items for each dimension). The participants gave their answers on a 5-point Likert scale (1—totally disagree; 5—totally agree). The results of adapting the scale on a sample of Romanian students show that IPIP-50 registered good values of internal consistency (between .73 and .84) (Rusu et al. 2012).

The Revised Self-Disclosure Scale (Mount 2006) has 31 items. They gave the answers on a 7-point Likert scale (1—strongly disagree; 7—strongly agree). The scale measures five dimensions of self-disclosure: control of depth, accuracy, valence, amount and intent. The scale was translated into Romanian and then back translated, and was adapted to capture online self-disclosure, such that each item started with "Online …" Cronbach's alphas were: .633 (control of depth); .627 (accuracy); .691 (valence); .727 (amount of disclosure); .649 (intent of disclosure).

## Results

A Pearson correlation addressed the relationship between self-disclosure accuracy (M 30.9; SD 3.91) and connection dimension (M 8.01; SD 4.31). As predicted, results indicated a significant positive correlation between the connection dimension of Facebook use and self-disclosure accuracy (see Table 1-9 below).

The effect size for this association was $r^2$=.08. Similarly, we used a Pearson correlation to test the relationship between agreeableness (M 40.95 SD 4.03) and friendship dimension of Facebook use (M 16.5; SD 4.35). The effect size for this association was $r^2$=.10. Results indicated a significant, positive correlation between these two dimensions (Table 1-10).

We also used a series of Pearson correlation analyses to assess the relation between personality and self-disclosure. Results showed a significant positive correlation between extraversion (M 33.9; SD 6.93) and amount of self-disclosure (M 29.9; SD 4.13) (see Table 1-11 below).

The effect size for this association was $r^2$=.148. In order to determine the gender differences on the friendship dimension, we applied the t test for the difference of means and the hypothesis is supported by the results (see Table 1-12 below).

**Table 1-9. Connection correlates with self-disclosure accuracy**

| | | Connection | Accuracy |
|---|---|---|---|
| Connection | Pearson Correlation | 1 | .283 |
| | Sig. (1-tailed) | | .002 |
| | N | 102 | 102 |
| Accuracy | Pearson Correlation | .283 | 1 |
| | Sig. (1-tailed) | .002 | |
| | N | 102 | 102 |

**Table 1-10. Friendship correlates with agreeableness**

| | | Agreeableness | Friendship |
|---|---|---|---|
| Agreeableness | Pearson Correlation | 1 | .328 |
| | Sig. (1-tailed) | | .001 |
| | N | 102 | 102 |
| Friendship | Pearson Correlation | .328 | 1 |
| | Sig. (1-tailed) | .001 | |
| | N | 102 | 102 |

## Discussion

As predicted, there was a significant, positive correlation between the connection dimension of Facebook use and self-disclosure accuracy. The people who use Facebook in order to find a romantic partner or to make new friends are honest in what they disclose about themselves. A study (Young, Dutta & Dommety 2009) analyzed 150 Facebook profiles and reached the conclusion that the information provided by users is honest and can be used as a predictor of Facebook-use motivation. The impossibility of making distinctions about the level of closeness towards the persons included in the list of "friends," along with the extended visibility of data posted on the wall, require a certain level of honesty and accuracy of self-disclosure to develop new interpersonal relationships. The effect size is average, so this association does not have a high value for practice.

**Table 1-11. Extraversion correlates with the self-disclosure amount**

| | | Extraversion | Amount |
|---|---|---|---|
| Extraversion | Pearson Correlation | 1 | .373 |
| | Sig. (1-tailed) | | .000 |
| | N | 102 | 102 |
| Amount | Pearson Correlation | .373 | 1 |
| | Sig. (1-tailed) | .000 | |
| | N | 102 | 102 |

**Table 1-12. Gender differences on the friendship dimension**

| | Gender | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Friendship | Men | 51 | 15.63 | 4.404 | .617 |
| | Women | 51 | 17.39 | 4.157 | .582 |

| | | Levene's Test for Equality of Variances | | | | |
|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) |
| Friendship | Equal variances assumed | .265 | .608 | -2.081 | 100 | .040 |
| | Equal variances not assumed | | | -2.081 | 99.669 | .040 |

The effect size for this difference was d Cohen=.20.

This study showed a significant, positive correlation between agreeableness and friendship dimension. The results show that agreeable people use their Facebook accounts to keep in touch with old and current friends. A study (Berry, Willingham & Thayer 2000) showed that agreeableness helps friendships work better, such that agreeable persons involve in friendships with a higher quality and a lower conflict potential. Considering the central aspects of friendships (generosity, cooperation, considerateness), it is easy to understand that this trait supports friendships, be it online or offline. Another study (Rivas 2009) shows that people expect their friends to assert an attitude at least similar to that exhibited by themselves towards their friends. Reciprocity on Facebook can be somewhat easily maintained by being in a list of Friends, replying to messages or liking a photo or a link.

The positive relation between extraversion and amount of self-disclosure was also confirmed by the studies of Jourard (Omarzu 2000). Extraverts have frequent interactions with other people, which is why the amount of self-referential information conveyed to others is remarkably high (Ong et al. 2011). This feature is best described by the number of

relationships, rather than the quality or depth of these ties (Selfhout et al. 2010). Well-developed communication skills and propensity to socialize support the vast amount of self-referential information that extraverts disclose to others. These qualities are reinforced by the significant accessibility of information about others and the structure of the internet (McKenna & Green 2002). The effect size has a relatively high value, suggesting the practical importance of the relation between extraversion and amount of self-disclosure.

As for the last hypothesis, the results show that there are significant gender differences when it comes to the friendship dimension. The different social networking styles of men and women brings out the preference of women towards deeper intimacy and self-disclosure and their interest towards friendship maintenance behaviours, such that friendships between women show more acceptance, attachment, trust and emotional support (Virgil 2007). The effect size obtained in this study shows a low statistical power of gender differences on the friendship dimension.

## Conclusions

Data confirms the role of personality traits and self-disclosure within the motivational dynamics of the use of Facebook. Through this study, agreeableness and extraversion would appear to offer some scope for understanding the determinants of the behaviours of Facebook users and gender shows the differences between men and women when it comes to creating and using Facebook accounts. However, many aspects are to be studied regarding the impact of internal (personality) factors and situational factors and the interaction between them in relation to the behaviour of the users of SNS. This study has some limits that pertain mainly to sample size (which makes it difficult to generalize the results), sampling procedure (one of the instruments did not provide the opportunity to give single answers to items, which required the elimination of forty persons from the sample), and methodology (the administration of another Big Five-based questionnaire that also measures the facets of personality would have led to more sensitive results). Future research needs to aim for a bigger and more diverse sample in terms of age, demographic background or occupation. It could also study other dimensions of personality related to the motivation of using SNS (public and private self-consciousness, trust, interpersonal attraction, subjective well-being, etc.), as well as the relations between the motivation of using SNS and behavioural measurements of personality.

## References

Berry, D. S., Willingham, J. K., Thayer, C. A. (2000). "Affect and Personality as Predictors of Conflict and Closeness in Young Adults' Friendships." *Journal of Research in Personality* 34: 84–107.

Bonds-Raacke, J. & Raacke, J. (2010). "MySpace and Facebook: Identifying Dimensions of Uses and Gratifications for Friend Networking Sites." *Individual Differences Research* 8: 27–33.

Christofides, E., Muise, A. & Desmarais, S. (2009). "Information Disclosure and Control on Facebook: Are They Two Sides of the Same Coin or Two Different Processes?" *CyberPsychology & Behavior* 12: 341–345.

John, O. P., Naumann, L. P. & Soto, C. J. (2008). "Paradigm Shift to the Integrative Big Five Trait Taxonomy: History, Measurement, and Conceptual Issues." In O. P. John, R. W. Robins and L. A. Pervin (Eds.), *Handbook of Personality: Theory and Research*, 114–158. New York: Guilford Press.

Landers, R. N. & Lounsbury, J. W. (2004). "An Investigation of Big Five and Narrow Personality Traits In Relation To Internet Usage." *Computers in Human Behavior* 22: 283–293.

McElroy, J. C., Hendrickson, A. R., Townsend, A. M. & DeMarie, S. M.. (2007). "Dispositional Factors in Internet Use: Personality Versus Cognitive Style." *MIS Quarterly* 31: 809–820.

McKenna, K., Green, A. & Gleason, M. (2002). "Relationship Formation on the Internet: What's the Big Attraction?" *Journal of Social Issues* 58: 9–31.

Mehdizadeh, S. (2010). "Self-Presentation 2.0: Narcissism and Self-Esteem on Facebook." *CyberPsychology, Behavior and Social Networking* 13: 357–364.

Mount, M. K. (2006). "Exploring the Role Of Self-Disclosure And Playfulness in Adult Attachment Relationships." *Dissertation Abstracts International: Section B: The Sciences and Engineering* 66, 4,535.

Omarzu, J. (2000). "A Disclosure Decision Model: Determining How and When Individuals Will Self-Disclose." *Personality and Social Psychology* 4: 174–185.

Ong, E. Y. L., Ang, R. P., Ho, J. C. M., Lim, J. C. Y., Goh, D. H., Lee, C. S. & Chua, A. Y. K. (2011). "Narcissism, Extraversion, and Adolescents' Self Presentation on Facebook." *Personality and Individual Differences* 50: 180–185.

Pempek, T. A., Yermolayeva, Y. A. & Calvert, S. L. (2009). "College Students' Social Networking Experiences on Facebook." *Journal of Applied Developmental Psychology* 30: 227–238.

Posey, C. & Ellis, T. S. (2007). "Understanding Self-Disclosure in Electronic Communities: An Exploratory Model of Privacy Risk Beliefs, Reciprocity, and Trust." http://www.virtual-community.org/images/1/10/Amcis-155-2007.pdf.

Raacke, J. & Bonds-Raacke, J. (2008). "MySpace and Facebook: Applying the Uses and Gratifications Theory to Exploring Friend-Networking Sites." *CyberPsychology & Behavior* 11: 169–174.

Rivas, J. (2009). "Friendship selection." *International Journal of Game Theory* 38: 521–538.

Rusu, S., Maricuţoiu, L. P., Macsinga, I., Vîrgă, D. & Sava, F. A. (2012). *Evaluarea personalităţii din perspectiva modelului Big Five. Date privind adaptarea chestionarului IPIP-50 pe un eşantion de studenţi români* [Assessing Personality from the Perspective of the Big Five Model: Data Concerning the Application of the IPIP-50 Questionnaire on a Sample of Romanian Students]. In print.

Selfhout, M., Burk, W., Branje, S., Denissen, J., van Aken, M. & Meeus, W. (2010). "Emerging Late Adolescent Friendship Networks and Big Five Personality Traits: A Social Network Approach." *Journal of Personality* 78: 509–538.

Stritzke, W. G. K., Nguyen, A. & Durkin, K. (2004). "Shyness and Computer-Mediated Communication: A Self-Presentational Theory Perspective." *Media Psychology* 6: 1–22.

Ulmanu, A.-B. (2011). *Cartea feţelor* [The Book of Faces]. Bucureşti: Humanitas.

Urista, M. A., Dong, Q. & Day, K. D. (2008). "Explaining Why Young Adults Use MySpace and Facebook Through Uses and Gratifications Theory." *Human Communication* 12: 215–229.

Virgil, J. M. (2007). "Asymmetries in the Friendship Preferences and Social Styles of Men and Women." *Human Nature* 18 (2): 143–161.

Young, S., Dutta, D. & Dommety, G. (2009). "Extrapolating Psychological Insights from Facebook Profiles: A Study of Religion and Relationship Status." *CyberPsychology & Behavior* 12: 347–350.

# DEVIANT BEHAVIOUR IN TEENAGERS: PREVENTION AND RECOVERY

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## Introduction

The actuality of the research of deviant behaviour manifestations derives, first of all, from the present state of the society, a state which, in Durkheim's (1923) terminology, is called "transition pathology." The ill-fated consequences of radical transformations in the economic, political and ideological spheres, axiologically conjugated and amplified by the informational explosion, the promotion of subcultural products by the mass-media, the weakening of social control and the intervention power of the social instances of the younger generation have deteriorated the social state of equilibrium, created a profound moral and axiological crisis, conditioned a moral-relational erosion of the community, contributed to the appearance of a large number of individuals and small groups who abuse constitutional liberties and systematically live a lifestyle which is incompatible with social norms. The latter also suffer some modifications dictated by the transition to the market economy, which creates psychological discomfort for social actors, affecting and confusing the younger generation especially. This generation lacks real life experience and a critical vision of the false informational avalanche, and is incapable of evaluating social events and phenomena adequately. Thus, minors adopt socially undesirable role models and manifest repetitive reactions, which denote an obvious, acute social inadaptation.

Juvenile delinquency is a component of criminality, with its own identity conferred by the category of individuals to whom it refers. This identity is also reflected in the sinuous nature of this phenomenon which does not overlap the evolution, its increases and decreases registered by the criminal phenomenon in general. This is also emphasised by the fact that criminality in the case of young people has different causes from those of adult criminality. Juvenile delinquency is a phenomenon manifested in the inability of minors to adapt to the norms of society, caused by a

number of bio-psycho-social factors. Today, behavioural deviation has seen a worrying extension, the number of deviant children, or those with a pronounced risk of deviance, has increased considerably. Family and school, as cells of society responsible for the process of socialisation, not confined and protected by the negative aspects of the transition period, cannot contribute in the right measure to the eradication of behavioural deviation without the support of specialists or some experimentally corroborated intervention programmes. Thus, the entire present-day social drive brings the problem of behavioural deviation and the methodology of its prevention and therapy to the researchers' attention.

One's psychological changes in acquiring a personality and becoming an autonomous subject in their life and professional activity are aspects of one's personality which are in a special synthesis of different psychological neoformations. The social maturation of personality and the problem of the self-adjusting system forming itself in the personality as a complex aptitude manifest themselves in the high level of development of reflection, adequate self-estimation, the need to perfect oneself and a subjective attitude, and along with the responsibility for one's behaviour these are rarely reflected in literature.

The necessity of research also comes from the complexity of the prevention, therapy and recovery of behavioural deviation phenomenon. We know that, theoretically, the problem of prevention and correction of deviant behaviour is presented in a number of different scientific schools. At the same time, we need the initiation of a scientific investigation regarding the prevention and recovery from behavioural deviation based on the analysis of development features of the psychological neoformations which appear at different ages and which contribute to the social maturation of the personality attested through auto determination and a well-developed self-adjusting system.

Hence, the actuality of the theme issues from the very importance of the phenomenon submitted to research, as well as from the usage possibilities of information regarding personality development, behaviour control of teenagers and the auto-adjustment or probationer activity oriented towards the prevention of, correction of and recovery from behavioural deviation.

In this context, the problem of investigation consists in the substantiation of preventive and recuperative psychological measures for deviant behaviour in teenagers based on specific personality particularities and the development of the self-adjusting system.

## Methods and Techniques

The subject of the research is deviant behaviour or behavioural deviances in teenagers, while the purpose of the investigation consists of the research of deviant behaviour resulting from the level of social maturation of personality and the particularities of the self-adjusting system in teenagers, in order to take the needed preventive and recuperative measures.

The hypothesis of the research is:

- Behavioural deviance in teenagers strongly derives from the social immaturity of their personalities and by the insufficient development of the self-adjusting system caused by the accumulation of some lacunae in the psychological neoformation system.
- The implementation of some preventive and curative measures against the lacunae that appear both during the process of social maturation and in the deviant teenagers' self-adjusting system can ensure their development, which could facilitate the conformation to the rules of their reference groups.

The production, chosen purpose and empiric verification of the hypotheses have imposed the following operational objectives:

- Analysis and synthesis of the related scientific literature regarding the essence, forms and causal factors of behavioural deviance and the elaboration of the conceptual position.
- Elucidation of some psychological particularities (personality features, characterological manifestations, attitude system and axiological profile) in order to approach the causality of behavioural deviance in teenagers.
- Estimation of the development level of the self-adjusting system in deviant teenagers.
- The projection and implementation of some preventive and recuperative measures for the lacunae in the personality neoformation sphere and those in the deviant teenagers' self-adjusting system.

The research had the following objectives:

- The research of some personality particularities and characterological manifestations which the subjects from the three lots present.
- The investigation of the included subjects' attitude systems.
- The determination of the subjects' axiological profiles.

- The study of the qualities of the subjects' self-adjusting systems.

**Experimental Basis of the Research**

The swatch presented 43 subjects (teenagers) divided into three lots. The first lot consisted of 15 teenagers aged fifteen to sixteen, with family and school abandonment from the Emergency Child Care Institution of Deva (Romania). The second lot included consisted of 11 teenagers of the same age. Compared to the subjects from the first lot, the latter did not manifest family and school abandonment but were institutionalised in the Dr. A. Simionescu Public Hospital of Hunedoara (Romania), diagnosed with "conduct disorder." The third lot included 17 high school students from the Transylvania College of Deva, 8 of which presented deviant behaviour. There were also 8 experts involved (teachers and psychologists) for the evaluation of deviant behaviour. In the theoretical part of the research, among the forms of deviant behaviour identified and described by different authors (Străchinaru 1969; Albu 2002) are class-skipping, running away from home, mopery and school abandonment. Therefore, children who practice these forms of deviant behaviour, presenting such characterological reactions to the situations in which they might find themselves, are called "devious." In the research, we have used the following methods, devices and research techniques:

- Theoretical—analysis and synthesis of literature, systematisation and generalisation of scientific information.
- Empirical—observation, conversation, investigation, testing, independent characteristics technique, finding, formative and control experimental values questionnaire.
- Statistical—mathematics for the settling of averages and significations, percentile ranks, comparing two average ranks in the case of pair swatches.

The ascertainment experiment included a number of tasks, such as:

- Biographic investigation, for the purpose of providing information regarding the teenager's family, activities, friends and other people who might be close to them.
- Personality test elaborated by Bonţilă (1971), a test meant to diagnose the eight personality features.
- Characterological questionnaire, developed by Leonhard and Schmieschek (1972, in Bardenstein, Cherepanov & Ermolaev 1997),

meant to determine the dominant characterological manifestations and permit the highlighting of some "emphasised parts" of one's personality.
- The "Unfinished Sentences" task to identify a number of reactions and attitudes of the subjects regarding their environment.
- The Values Questionnaire (Rokeach 1979) in which they mention both positive (universality and flexibility) and negative characteristics of the questionnaire (influence of social desirability).

As a consequence of the four presumptions above, we can say that:

- The students in whom there were no traces of emphasised personality features or characterological emphases are perceived and considered as nondeviant by the school.
- Only some high school students out of those in whom we found emphasised personality features or characterological emphases are characterised as deviant from an educational point of view.
- Not all teenagers who present many emphasised personality features and characterological emphases manifest school inadaptation and not all of them are considered deviant.

According to what we know, we can conclude that emphasised personality features and characterological emphases, on the one hand, as well as behavioural deviance on the other, are not always directly correlated; emphasised personality features and characterological emphases can lead to deviance in some students, while in others they do not. It is clear, though, that the students who are considered deviant present a larger number of characterological emphases and emphasised personality features. This conclusion underlines the fact that characterological emphases and emphasised personality features are not the single cause of behavioural deviance.

## Results and Discussion

All teenagers who present emphasised personality features and characterological emphases do not manifest school inadaptation and are not considered as deviant, as in the following examples:

- The teenagers from the Emergency Child Care Centre of Deva are characterised by a negative attitude towards their father, who either does not take care of his own motherless child, or has abandoned his

family, or abuses his child while in a state of ebriety. The families with whom they have previously lived did not offer them a happy childhood, and now the teens fail to show positive attitudes or signs of trust. Therefore, we can conclude that the teenagers' attitude caused their running away or their abandoning of the family and coming to the centre. Finding themselves in such a situation, they have given up hope for their future. These teenagers are less oriented towards terminal values such as confidence, other people's happiness, personal development, social appreciation, and stimulating work. The "means-values" have proven to be the most unimportant to them, and are: courage in speaking up for their point of view and beliefs, wide perspectives (understanding another point of view, respecting other people's traditions or habits), responsibility, and rationalism (the ability to think in a logical, rational manner, rational and well-thought decisions).

- The teenagers from the Dr. A. Simionescu Public Hospital of Hunedoara present a positive but weak attitude towards their parents, family and friends, and towards themselves. Their memories are false; few of them still believe in a brighter future and they do not consider themselves guilty for what has happened in their lives. Of the "terminal values," the most prominent remains health. They are not interested in being appreciated by the society; they are indifferent to purpose-values such as wisdom (mature and reasonable conclusions), freedom (actions and independence of thought) and knowledge (the possibility of widening their horizons, all-round education, intellectual development). Of the "means-values," the apparently most unimportant to them were wide perspectives, activity efficiency, self-control, rationalism and will.
- Deviant students from Transilvania College of Deva, according to some parameters of the attitudinal system, resemble the teenagers from the Care Centre (in their attitude towards their mothers, towards themselves, and the feeling of guilt) and the subjects from the Public Hospital (in their attitude towards their fathers). Even so, these students have more tangencies with their nondeviant classmates. This proves the lack of significant differences between deviant high school students' and nondeviant students' attitudes. Things look a great deal different regarding the deviant students' axiological profiles. One can say they are considerably different from the teenagers from the Care Centre and their nondeviant classmates, because of their terminal and their instrumental values. In the comparative analysis of value orientation, the deviant teens from the high school and the hospital

have shown significant differences between their purpose-values and insignificant differences between their means-values. The most unimportant purpose-values for the high school students have proved to be social appreciation, others' happiness, knowledge, and stimulating work. The most unimportant means-values were activity efficiency, rationalism, intransigence regarding their and others' shortcomings, independence (the capacity to act independently, decisively), and responsibility.

## Conclusions and Recommendations

- Behavioural deviance in teen students manifests itself through inadaptation, disregard towards school rules, and breaking the existent rules in the reference group.
- The prevention of and recovery from deviant behaviour is a unitary process which needs rational organisation, based on full knowledge of the circumstances, conditions and causes which lead to this phenomenon.
- In order to successfully discover any high school students that might present forms of behavioural deviance, one should look for the following signs: large number of characterological emphases and emphasised personality features; neglect of student duties; lack of self-control; negative reactions; lack of discipline; disturbances in the relational sphere (lack of respect for their teachers, classmates); class-skipping, and; drinking and smoking.

Prevention and recovery measures are directed towards:

- Individual approach of the particular causality of behavioural deviance.
- Psychological medical history of the personality structures and the differential building of the particularities of the self-adjusting system.
- Orientation towards self-adjusting mechanisms (cognitive and attitudinal components of conscience and reflexive function of the self-conscience) and the subject's aptitudinal sphere.

This study portrays, in our opinion, the necessity of intensifying the activity of the school psychological service in order to provide psychological assistance to students. What is more, contemporary school needs more school psychology units and more experts who, as it happens in many other countries, offer psychological help to the children in every step of the pre-academic educational system, starting with primary school

and ending with high school. It would also be an excellent idea to build more psychological counselling centres to help minimise the disproportion between precocious somatic maturation and late psychosocial maturation, and prepare the young generation for life and its hardships. Keeping in mind these needs and the lack of intervention programmes for teenagers, we have carried out this research offering concrete recommendations for psychology practitioners. We have also constantly investigated the forming level of psychological neoformations in students of all ages to find ways of stimulating their development, as well as intensify teenagers' psychological counselling activity in order for self-education and self-improvement to appear.

## References

Albu, E. (2002). *Manifestări tipice ale devierilor de comportament la elevii preadolescenţi. Prevenire şi terapie* [Typical Manifestations of Behaviour Deviances in Pre-Teens: Prevention and Therapy]. Bucureşti: Aramis Print S.R.L.

Bardenstein, L., Cherepanov, E. & Ermolaev, V. (1997). "Accentuated Personality and Early Onset Schizophrenia in Adolescents." *European Psychiatry* 12 (2): 221s–221s(1).

Bonţilă, Gh. (1971). *Culegere de teste psihologice de nivel şi aptitudini* [Level and Skills Psychological Tests]. Bucureşti: Centrul de documentare si publicatii al Ministerului Muncii.

Durkheim, E. (2003). *Sociologia—regulile metodei sociologice* [Sociology: The Rules of Sociological Method]. Bucureşti: Antet.

Rokeach, M. (1979). *Understanding Human Values*. New York, NY: Free Press.

Străchinaru, I. (1969). *Devierile de conduită la copii* [Deviance in Children]. Bucureşti: Editura Didactică şi Pedagogică.

# WHY FINANCE IS IMAGINARY

TUDOR NICULA

## Introduction

After the crash of 2008 and the subsequent financial and economic crisis, it has been widely argued that economic theory has failed. Although there is no consensus on the causes and the extent of the failure, the failure is seen to be profound, going back to the foundations of economic theory (Soros 2012). Despite economic theory's assumption that market participants act in a rational manner, there is considerable evidence that challenges this claim on which neoclassical economics is founded. This chapter examines the relevance of psychological research on economic thought as it aims to outline a theoretical framework centred on the concept of the "financial imaginary." By considering the impact of perceptions and emotions on economic judgement and behaviour, we argue for the pivotal role of the imaginary (individual and group) in finance. The present chapter reviews the literature on human decisions in economic contexts. While we rely on evidence from economic psychology and behavioural economics, we also draw on previous research on media effects on financial markets. We lay particular emphasis on the importance of trust as a pillar of any transactions. We argue that an integrative theoretical framework can yield a deeper understanding of financial decision-making and, indirectly, of the present crisis. Traditional economic theory posits that people make decisions by maximizing a utility function in which all of the relevant constraints and preferences are included and weighed appropriately (Simon 1959). The fundamental assumptions that neoclassical economics relies on are: (1) people have rational preferences among outcomes which can be identified and associated with a value; (2) individuals maximize utility and firms maximize profits, and; (3) people act independently on the basis of full and relevant information (Campus 1987, 323). In short, they assume that prices, outputs, and income are the result of a process of rational allocation of assets. These principles gained wide acceptance in financial economics in the 1960s when Eugene Fama introduced the Efficient Market

Hypothesis (EMH). In short, EMH argues that information propagated by means of mass communication allows for the rational evaluation of investment opportunities (Fama 1970). The neoclassical approach faced mounting criticism from academics and practitioners alike, as neoclassical models had little in common with actual economic or financial behaviour exhibited in real life. Its normative bias comes as a direct consequence of economics shaped as a natural science. As Soros explains, "economics is a social science, and there is a fundamental difference between the natural and social sciences. Social phenomena have thinking participants who base their decisions on imperfect knowledge. That is what economic theory has tried to ignore." (Soros 2012, 1) We explicitly challenge the traditional, economical approach as we believe that the causality implied by the neoclassical principles has little bearing on actual human behaviour on real markets. We argue that the nature of economic and financial interactions is more reflexive and heavily influenced by individual and collective psychological phenomena. Furthermore, the claim that new information has a direct impact on decisions and behaviour without considering any sort of psychological mediation is an essential oversight. The few studies that analysed the implications of media consumption on participant's behaviour in the markets brought evidence that raises serious questions on EMH's assumptions (Davis 2005; Nicula 2009). In previous research, we analysed how communication interacts with the decision-making and behaviour of an elite audience of professional investors. We concluded that, contrary to the direct effects assumed by financial theory and the EMH, the media has an indirect effect, "setting the mood" or amplifying the dynamics already in play (Nicula 2009). The results also indicated that investors often behave irrationally, are subject to bias, and do not fully integrate the available information in their evaluation and decision making (Nicula 2009, 3–5). These findings are in line with other media effects studies, notably the one conducted by Davis (2005) on investors active on the London Stock Exchange.

## Psychology and Economics

The classics of microeconomics have often made more or less casual references to psychological mechanisms. For example, in *The Theory of Moral Sentiments*, Adam Smith (1759) proposed psychological explanations of individual behaviour, including concepts such as altruism, fairness and market interaction (Ashraf, Camerer & Loewenstein 2005). Jeremy Bentham also wrote extensively on the psychological underpinnings of utility (Camerer, Loewenstein & Rabin 2004). Francis

Edgeworth, Vilfredo Pareto, Irving Fisher & John Maynard Keynes all mentioned psychological determinants of economic choice (Camerer et al. 2004, 5–6). However, as microeconomics evolved into an autonomous discipline, it aspired to become a natural science. Therefore, the subtle psychological analyses of the classics were replaced by the rather simplistic *homo economicus*.

The emergence of economic psychology is related to the works of Gabriel Tarde (1902), Maurice Allais and George Katona. The turning point was Herbert Simon's introduction of Bounded Rationality (1959) to explain how people irrationally seek satisfaction, instead of maximizing utility, as conventional economics presumed. Later, psychologists began to compare cognitive models of decision-making under risk and uncertainty to economic models of rational behaviour showing that heuristic short-cuts created probability judgments, which deviated from statistical principles (Tversky & Kahneman 1974). Their continued researches led to the development of the axiomatic Prospect Theory (1979). By framing outcomes as gains or losses, Tversky & Kahneman (1979) highlighted asymmetric risk attitudes—risk aversion on gains and risk seeking on losses—also pointing out that the value function of losses is much higher than that of gains. Also notable were the development of mental accounting, the process whereby people code, categorize and evaluate economic outcomes (Thaler 1980), and the Behavioural Life-Cycle hypothesis which argues that people mentally frame assets as belonging to separate accounts (Shefrin & Thaler 1988).

People are confronted with economic risk through debt, investments, purchases (consumption) and jobs. Thus, risk is an intrinsic component of economic behaviour. Socio-demographic factors such as sex, age and personality also play a crucial role in risk attitudes and associated behaviour (Donkers & Van Soest 1999; Powell & Ansic 1997). Studies consistently indicate people have positively-biased outlook (Puri & Robinson 2007). Individuals spend, consume, and invest more when they have positive expectations, and they spend less on consumption and stop investing during periods of uncertainty (van Raaij & Gianotten 1990).

An equally significant effect is the perceived value of the exchange medium—the "money illusion." People tend to disregard the difference between the nominal value and purchasing power and do not take inflation into account (Fisher 1928; Shafir, Diamond & Tversky 1997). An interesting set of effects also came to light during the transition to the Euro (Hofmann, Kirchler & Kamleitner 2007; Juliusson, Gamble & Gärling 2006).

On financial markets, people are not able to act consistently in a rational manner (Shefrin 2000; Taleb 2004). This leads to increased volatility in the markets, speculative bubbles, and ultimately to crashes (Shiller & Akerlof 2009).

Transactions between partners depend on mutual trust (Theurl 2007). As Alan Greenspan puts it, "Trust is at the root of any economic system based on mutually beneficial exchange … if a significant number of people violate trust upon which our interactions are based, our economy would swamped into immobility" (Greenspan 1999, 7).

In the context of tax psychology, Kirchler et al. (2008) conclude that a tax authority that coercively enforces tax compliance will reduce trust while a tax authority seen as legitimate will enhance trust and voluntary tax compliance. Castelfranchi & Falcone (2010) also assume that regulative measurements might have a negative influence on trust if they are perceived as restrictive and coercive, but a positive influence if they are perceived as regulative.

The financial market crash of 2008 and the subsequent crisis that is still unfolding globally has brought conclusive evidence that neoliberal ideals of free-markets were ideals only. Markets have proved to be unable to regulate themselves voluntarily (Earle 2009). Furthermore, they argued that additional strict regulative measurements would be needed in order to reinstall trust in the economy and financial markets (Acemoglu 2009; Earle 2009; Goodhart 2008). It is worth noting that, if creditors believe that financial institutions are supervised and will not fail, costs for capital are likely to decline (Blundell-Wignall, Atkinson & Lee 2008).

The financial crisis eroded trust between economic and political stakeholders (Earle 2009; Gangl, Kastlunger, Kirchler & Voracek 2012). When participants from the real economy stopped trusting the financial institutions and changed their lending and borrowing decisions accordingly, their behaviour caused considerable problems in the credit markets (Allen & Carletti 2008; Campello, Graham & Harvey 2010; Ivashina & Scharfstein 2010). In turn, citizens blamed the moral hazard and misconduct of financial institutions, losing trust in the government's ability to regulate international financial markets (Gangl et al. 2012; Leiser, Bourgeois-Gironde & Benita 2010).

## Discussion

We reviewed both the traditional approach towards economics and the economic psychology approach. The former is normative; it dominates mainstream economics and offers a logical theoretical framework.

However, its assumptions have been challenged by empirical research and actual behaviour observed on markets. The latter is more descriptive; it has been validated by experiments, and is in line with actual behaviour. Its main shortcoming is that it has no cohesive theoretical framework. We propose the concept of financial imaginary by merging theories from different backgrounds (psychology, communication) relating to mental representations, affective influences and framing. Trust plays a vital role in the integrated concept as it mediates all transactions. This approach, we feel, is preferable because it can accommodate a theoretical framework which is interdisciplinary and inclusive, as well as the challenges posed by the practical aspects of finance. We argued that economic behaviour is self-reinforcing by means of a feedback mechanism which does not regulate itself smoothly. Rather it tends to follow the boom-bust cycle observed repeatedly in the course of history. When analysing overconfidence and optimism among investors, Shiller (2001) observed a phase of irrational exuberance—the boom that precedes the crash. Researchers have noted that humans pass from optimism to pessimism and back again in a cycle of mood that might be linked to the feedback effect on financial markets, whereby the price trends tend to be reinforced and amplified by the prevailing mood among the investors. This also holds true in economic cycles, as recession follows expansion. We think that participants themselves generate economic trends through spending, consumption and investment. The causal implication is that participant imaginations (perceptions, mood, biases) induce positive or negative feedback loops (tendencies) to which people react in turn in the reflexive function (Soros 1987). This view supports the hypothesis of a financial imaginary—a reflection of reality, without being necessarily real. This is why finance can be so deceptive and confusing to most participants, as the onset of the crisis showed.

## Conclusions & Recommendations

Although there is a substantial literature on the confines of human rationality, psychological effects in economic behaviour, the role of trust in the economy, and overwhelming evidence of the importance of mental representations (imaginary) in financial markets, academics have failed to provide an integrated theoretical framework. On the other hand, the traditional paradigm in economics, which largely proved inadequate, still resides at the very centre of economic thought today. It is taught in universities around the world shaping generation after generation of economists, professionals in administration and the financial sector. For

this reason, we agree with the claim that the current crisis is, at least in part, the final result of this gap. We set out to argue that finance is imaginary, but because the purpose of this study is theoretical, we limited ourselves to introducing the concept of a "financial imaginary." A further development would be to include the emotion component into this concept. We would like to analyse and interpret the possible direct and causal effect of emotions (either positive or negative) on decision/behaviour in a financial context. We already know that emotions regulate mood, and mood affects behaviour through perceptions. We are taking experimental trials into consideration where we induce positive or negative moods and affective responses by means of either electro-stimulation or, more probably, using images.

## References

Acemoglu, D. (2009). "The Crisis of 2008: Lessons for and from Economics." *Critical Review: A Journal of Politics and Society* 21 (2): 185–194.

Akerlof, G. A. & Shiller, R. J. (2009). *Animal Spirits: How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism*. Princeton, NJ: Princeton University Press.

Allen, F. & Carletti, E. (2008). *The Role of Liquidity in Financial Crisis: The Role of Liquidity in Financial Crises*. http://ssrn.com/abstract=1268367.

Ashraf, N., Camerer, C. F. & Loewenstein, G. (2005). "Adam Smith, Behavioral Economist." *Journal of Economic Perspectives* 19 (3): 131–145.

Blundell-Wignall, A., Atkinson, A. & Lee, S. H. (2008). "The Current Financial Crisis: Causes and Policy Issues." http://web.xrh.unipi.gr/attachments/136_370_oecd.pdf.

Camerer, F., Loewenstein, G. & Rabin, M. (2004). *Behavioural Economics: Past, Present, Future: Advances in Behavioural Economics*. New York: Russell Sage.

Campello, M., Graham, J. R. & Harvey, C. R. (2010). "The Real Effects of Financial Constraints: Evidence from a Financial Crisis." *Journal of Financial Economics* 97 (3): 470–487.

Campus, A., (1987). Marginal Economics. In J. Eatwell, M. Milgate & P. Newman (Eds.), *The New Palgrave: A Dictionary of Economics 3*. London – New York: Macmillan & Stockton.

Castelfranchi, C. & Falcone, R. (2010). *Trust Theory. A Socio-Cognitive and Computational Model*. West Sussex: John Wiley & Sons Ltd.

Davis, A. (2005). "Media Effects and the Active Elite Audience: A Study of Communications in the London Stock Exchange." *European Journal of Communication* 20: 303.

Donkers, B. & Van Soest, A. (1999). "Subjective Measures of Household Preferences and Financial Decisions." *Journal of Economic Psychology* 20: 613–642

Earle, T. C. (2009). "Trust, Confidence, and the 2008 Global Financial Crisis." *Risk Analysis* 29: 785–792.

Fama, E. F. (1970). "Efficient Capital Markets: A Review of Theory and Empirical Work." *The Journal of Finance* 25 (2): 383–417.

Fisher, I. (1928). *The Money Illusion*. New York: Adelphi.

Gangl, K., Kastlunger, B., Kirchler, E. & Voracek, M. (2012). "Confidence in the Economy in Times of Crisis: Social Representations of Experts and Laypeople." *The Journal of Socio-Economics* 41 (5): 603–614

Goodhart, C. A. E. (2008). "The Regulatory Response to the Financial Crisis." *Journal of Financial Stability* 4 (4): 351–358.

Greenspan, A. (1999). *Commencement Address*. Cambridge, MA: Harvard University.

Hofmann, E., Kirchler, E. & Kamleitner, B. (2007). "Consumer Adaptation Strategies: From Austrian Shilling to Euro." *Journal of Consumer Policy* 30: 367–381.

Ivashina, V. & Scharfstein, D. (2010). "Bank Lending During the Financial Crisis of 2008." *Journal of Financial Economics* 97 (3): 319–338.

Juliusson, E. A., Gamble, A. & Gärling, T. (2006). "Learning Unit Prices in a New Currency." *International Journal of Consumer Studies* 30: 291–597.

Kirchler, E., Hoelzl, E. & Wahl, I. (2008). "Enforced Versus Voluntary Tax Compliance: The 'Slippery Slope' Framework." *Journal of Economic Psychology* 29 (2): 210–225.

Leiser, D., Bourgeois-Gironde, S. & Benita, R. (2010). "Human Foibles or Systemic Failure: Lay Perceptions of the 2008-2009 Financial Crisis." *Journal of Socio-Economics* 39 (2): 132–141.

Mayer, R. C., Davis, J. H. & Schnorrman, F. D. (1995). "An Integrative Model of Organizational Trust." *Academy of Management* 20 (3): 709–734.

Nicula, T. (2009). "Media Effects on Stock Market Behavior. Study on an Elite Audience." *Interdisciplinary New Media Studies Conference Proceedings* 1: 78–82.

Powell, M. & Ansic, D. (1997). "Gender Differences in Risk Behavior in Financial Decision-Making: An Experimental Analysis." *Journal of Economic Psychology* 18: 605–628.

Puri, M. & Robinson, D. T. (2007). "Optimism and Economic Choice." *Journal of Financial Economics* 86: 71–99.

Raphael, D. D. & Macfie, A. L. (Eds.). (1981). *The Theory of Moral Sentiments*. Indianapolis: Liberty Fund.

Shafir, E., Diamond, P. & Tversky, A. (1997). "Money Illusion." *Quarterly Journal of Economics* 112: 341–374.

Shefrin, H. M. & Thaler, R. H. (1988). "The Behavioural Life-Cycle Hypothesis." *Economic Inquiry* 26: 609–643.

Shefrin, H. M. (2000). *Beyond Greed and Fear: Understanding Behavioural Finance and the Psychology of Investing*. Boston: Harvard Business School Press.

Shiller, R. (2001). *Irrational Exuberance*. Princeton, NJ: Princeton University Press.

Simon, H. A. (1959). "Theories of Decision-Making in Economics and Behavioral Science." *American Economic Review* 49: 253–283.

Soros, G. (1987). *The Alchemy of Finance*. New York: Simon and Schuster

Soros, G. (2012). *Remarks at the Festival of Economics*. (Speech) Trento Italy (June 2, 2012).

Taleb, N. N. (2004). *Fooled by Randomness: The Hidden Role of Chance in Life and the Markets*. New York: Random House.

Tarde, G. (1902). *La psychologie économique 1* [Economic Psychology 1]. Paris: F. Alcan

Thaler, R. H. (1980). "Towards a Positive Theory of Consumer Choice." *Journal of Economic Behaviour and Organisation* 1: 39–60.

Theurl, T. (2007). Das Ringen um Vertrauenswürdigkeit [The Struggle for Credibility]. In G. Schwarz (Ed.), *Vertrauen—Anker einer freiheitlichen Ordnung*. Zürich: Neue Züricher Zeitung.

Tversky, A. & Kahneman, D. (1974). "Judgment under Uncertainty: Heuristics and Biases." *Science* 185: 1124–1131.

van Raaij, W. F. & Gianotten, F. J. (1990). "Consumer Confidence, Expenditure, Saving and Credit." *Journal of Economic Psychology* 11: 269–290.

# ORAL HABITS AND PSYCHOLOGICAL FACTORS: A PARALLEL STUDY BETWEEN PSYCHOLOGY AND ORTHODONTICS

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## Introduction

Child psychology is a theoretical and applicative field of the psychological sciences at the crossroads with education sciences. It studies the psychological implications of events that are part of the educational relations accompanying child development.

The rhythmic behavioural patterns stereotype is one of the most studied subjects in literature, attracting the interest of researchers as well as medical, psychological and psychiatric practitioners. Under rhythmic behavioural patterns there are vicious habits, bruxism, onychophagy, compulsive movements of arms and head, etc.

Such repetitive behaviour is of considerable importance for the child's body image generation. The concept of body image was introduced by Schilder and, in the field of psychology, was defined and explained by Allport during the development stages of the Self (Allport 1961; Schilder 1950). The basic idea is that the child develops a body image or a corporal scheme by means of kinesthetic impulses. From this point of view, the rhythmic behavioural patterns are associated with the development of maturity and learning motoric habits during small childhood. The evolution of the child's image regarding their own body, as well as the passage from self-centrism to allocentrism (the movement from the phase of the focus on one's own body and consciousness of the difference between Me and the Other) is intimately related to the development of movement. Movement behaviour is the first sign of a child's independence, helping to improve the cognitive side of their personality. Studies on developmental psychology reached the conclusion that rhythmic activities, besides the support function of the cognitive

development, have the role of expressing pleasure, removing stress and providing compensatory satisfaction.

Among the bad habits that are of an interest in orthodontics are thumb sucking or finger sucking habits, inferior lip sucking habit, cheek sucking habit, tongue position between the dental arcade habit, bad habit of sucking different objects (pencils, pillow's corners, etc.), onychophagy, bruxism.

The bad habit of thumb sucking represents a typical, repetitive habit, having an adaptive role in the newly born and during small childhood. When there are secondary effects, they persist in time, and it is not clear if different behavioural therapies for un-conditioning of the bad habit of thumb sucking produce different levels of behavioural modifications that are not targeted. More and more, behavioural studies have shown the need to reconsider the social validity of therapeutic effects.

## Material and Method

We conducted two applicative interdisciplinary studies (psychological-orthodontic), having, as a point of reference, oral habit, sucking oral habit, considered by most authors as being the most frequent bad oral habit.

The purpose of the first study was to evaluate a particular type of anxiety, i.e. social anxiety and its correlations with sucking oral behaviour using standardized rating scales of manifest anxiety in children of school age.

The working hypothesis we started from in the present research is that there are differences at the social anxiety level between children presenting the habit of thumb sucking and children that do not have this habit. We formulate the null hypothesis that there are no significant differences between the two groups at the level of manifested anxiety. The group was made up of 40 children aged seven to nine. Of the 40 children, 50% (group 1) represented the clinical group composed of children presenting the habit of thumb sucking and that were under orthodontic surveillance. The remaining 20 children represented the control group that do not have such a habit, nor did they in the past. Because of the low number of children available for research, group 1 was not divided depending on the repetitive habit type. No child from the control group had such a habit in the past and do not in the present.

The first instrument used is the Social Anxiety Scale for Children. It is a standardised instrument, elaborated by La Greca et al. (1988) that sees social anxiety as a construct including not only subjective anxiety but also social avoidance and the scale of negative valuation. In compliance with

this conceptualisation, the items or the quiz questions were selected so as to cover the cognitive, affective and behavioural components of social anxiety. The scale consists of 10 items whose content is expressed in a language familiar to the child, and the child answers them on a scale of 3 points: 0 (never true), 1 (sometimes true) and 2 (always true).

Thus, the subject's scores can vary from 0 points, the lowest possible, to 20 points, the highest possible. We calculated the internal consistence of the test, the Alpha Cronbach value being 0.76 and the test-retest value being 0.67.

Another method we used was the interview, in which parents and children were asked about their behaviour history, the events that took place when the behaviour appeared, as well as the social consequences of this habit.

As a statistic method of processing these data, after calculating the averages and standard deviations for the two groups, the test t student was used for independent batches. The statistic processing of the data was done with the programme Statistical Package for the Social Sciences, variant 16.

Table 1-13 below presents standard average values and deviations for the two groups of participants (group 1 and group 2).

**Table 1-13. Descriptive statistics (averages and standard deviations)**

| Social anxiety | Average | Standard deviation | N |
|---|---|---|---|
| Group 1 | 12.3 | 6.15 | 20 |
| Group 2 | 9.8 | 5.64 | 20 |

As presented in Table 1-14 below, for a statistically significant F, the second value of t is trusted. For a t (46.799)=1.495, $p>0.05$, the result is not statistically significant. Thus, the statistic hypothesis is denied, and we accept the null hypothesis—between the two groups of children, there are no significant statistic differences at the level of social anxiety.

**Table 1-14. Significance of the differences at the level of social anxiety**

| | F | The significance level | The t value | Liberty degrees | Significance level (2- tailed) |
|---|---|---|---|---|---|
| **Social anxiety** | 4.906 | 0.031 | 1.495 | 46.799 | 0.142 |

In Table 1-13, we noticed that the result averages of the two groups at the level of social anxiety for children are relatively close, with superiority of

the average of group 1 (12.3) compared to group 2 (9.8). The average of group 1 (children presenting a repetitive habit of thumb sucking) is 12.3, which points to the fact that they register an average-superior level of development of social anxiety. Regarding group 1 (children that do not present the habit of thumb sucking), it has a level below average of the social anxiety.

In Table 1-14, we present the value of the t test and the difference between the averages of the two groups studied. We can note that the t test has a value of 1.495 for a significance level of 0.142 that indicates the absence of some significant differences from a statistic point of view between the two batches.

According to the data we have obtained after the statistic processing, the null hypothesis is accepted; i.e. there are no significant differences at the level of anxiety between the two groups.

In the second study, we intended to identify and value factors or conditions that keep the habit of thumb sucking alive, more precisely to determine those variables that control the behaviour or the bad habit. In order to achieve this purpose, we used a technique adapted from the psychology of disabilities development called functional analysis or behavioural functional valuation technique.

Initially, this technique was developed for the purpose of valuating the variables, aspects that support the self-sabotage behaviour for the disabled persons (Iwata et al. 1994); in this working procedure, the persons are exposed to some different experimental conditions meant to investigate the aspects or the variables associated to the appearance of the target behaviour that results in the consolidation of that behaviour. In other words, these variables control the behaviour. In each experimental condition, the consolidation variable is manipulated, and we could see the effect of such a manipulation on the target behaviour. The consolidation variables tested traditionally in the functional analysis of disabled behaviour are social attention and the tendency to avoid a task that may show the disability. The automatic stimulation of the target behaviour can be evaluated this way by observing the person's behaviour when left alone compared to the situation (condition) when the person is in a social relationship or is involved in a task or activity.

Unfortunately, this technique is rarely applied in the context of observing the repetitive-ritual behaviours, such as the thumb sucking behaviour (Ellingson et al. 2000; Rapp et al. 1999). The design of the standard experimental conditions is not specially constructed for the evaluation of variables for the stereotype behaviour; we have adapted this

design to the target behaviour of the viewed children, i.e. the thumb sucking behaviour.

For the second study, we have selected 4 children among those registered as patients with orthodontic treatment. The criteria of selecting the four children were the age (four to six years old), no psychopathological problems and no development disabilities, with an active habit of thumb sucking of at least one year. The small number of participants underlines the exploratory character of research: in this stage, we wanted more to explore the phenomenon and to observe the application and functioning of the technique at the level of the target behaviour than to extrapolate the results.

For the present research, we used two methods:

- In the first stage, there was an interview with the parents to see their bad habit history (moment of appearance, reactions, relaxation moments, etc.), and to collect data about the child.
- In the second stage, the method we used was the observation under lab conditions of the child's behaviour under different experimental situations.

Gathering data lasted three days in each particular child. After filling in the consent form by the parent, the sessions were videotaped. The children were not told they were videotaped. For each experimental condition described below, the children were recorded for five minutes. The dependent variable was represented by the percentages of the time intervals when the habit appeared, calculating it by dividing the number of intervals when the behaviour was active by the total number of intervals, multiplied by 100.

During the three days, each child was exposed to each of the eight conditions, for five minutes for each one. Based on the functional analysis procedure described above of the information obtained through the interview, as well as the results of some previous research regarding the aetiology of this repetitive behaviour, the eight conditions were created; they were used in a previous study elaborated by Woods et al. (2001) regarding the nail biting habit.

The conditions the children were asked to meet are the following:

- Condition 1: alone, not doing anything (inactive).
- Condition 2: alone, in front of the TV.
- Condition 3: alone, playing a game.

- Condition 4: noncontingent social attention (the child discusses with the researcher about everything else but the habit of thumb sucking).
- Condition 5: contingent social attention (the child discusses with the researcher about different topics, but when the child starts the behaviour of thumb sucking the researcher comments upon this behaviour).
- Condition 6: a discussion strictly about this habit (the child discusses with the researcher only about this habit, but without any hint on the moment when this habit appeared).
- Condition 7: the request to focus exclusively on a task (the child is asked to perform a task, for example, to fill in a puzzle, or to draw, to join points in order to form an image, and this task is entirely done in the presence of the researcher).
- Condition 8: the request is to focus on a task with some short breaks.

## Results

In the first study, launching the hypothesis of the existence of some significant differences between children having the repetitive behaviour of thumb sucking and the batch of children not having this habit, the hypothesis was not confirmed, in that we did not detect significant differences between the two groups of children. This says if the habit of thumb sucking is not associated to other situations from the emotional spectrum, by sounding the alarm on the validity of the idea of associating this behaviour to anxiety, then the idea seems to have conquered all clinicians.

From a psychological point of view, the absence of some significant differences between the clinical batch and the control means we cannot argue that, by modifying the level of some variable, we expect to modify the other; in other words, if we reduce anxiety, we do not get improvement in behaviour effects (in our case, the thumb sucking habit). Likewise, the increasing intensity of this behaviour is not related to the manifestation of social anxiety.

The over-average intensity of the children's response from the first group to the scale assessing social anxiety suggests a certain vulnerability expressed in defensive, withdrawal and non-exposed behaviour.

By analysing the second study, we noticed the reduced tendency of children to appeal or to activate the behaviour when they are in an interpersonal relationship compared to the situation when left alone. Generally, the hypothesis of associating anxiety to the starting moment of the bad habit of thumb sucking (conditions 7 and 9) is not empirically

sustained; this study shows that, if the child focuses on a task, executing and finalising it in the presence of an adult decreases the percentage of the unwanted habit of thumb sucking. Labelling the habit of thumb sucking as a nervous habit is not fully sustained. This conclusion complies with the results of some other studies (Woods & Miltenberger 1996). This is relevant from a clinical point of view, meaning that the finger sucking habit can rather reflect the lack of answering opportunities, more than the manifestation of a subjacent affection such as anxiety. Understanding this reconceptualisation of the term can diminish the importance given by the clinicians to the idea of treating such behaviour by interventions with a reduced degree of efficiency such as relaxing trainings as well as it can focus their attention on some interventions that require the manipulation of some external events (such as, for example, time programming).

## Conclusions

The bad habit of thumb sucking can be controlled through multiple variables that can manifest differently from one person to another; therefore treating children differently can be the key to success.

Knowing the results of such researches that analyse the impact of some psychological aspects on the development and maintenance of abnormal, automatic behaviour or bad habits represents a subject of academic and general public interest at the same time. Stimulating the studies and researches on this issue by involving doctors and psychologists can affect a variety of decisions regarding the treatment of such behaviour. These results are also relevant for the development of some public programmes for the healthy education of children and parents, increasing the degree of acknowledging problematic behaviour.

## References

Allport, G. W. (1961). *Pattern and Growth in Personality*. New York–Chicago–San Francisco–Toronto–London: Hoit, Rinehart & Winston.

Ellingson, S. A., Miltenberger, R. G., Stricker, J. M., Garlinghouse, M. A., Roberts, J., Galensky, T. L. & Rapp, J. T. (2000). "Analysis and Treatment of Finger Sucking." *Journal of Applied Behaviour Analysis* 33 (1): 41–52.

Iwata, B. A., Dorsey, M. F., Slifer, K. J., Bauman, K. E. & Richman, G.S. (1994). "Toward a Functional Analysis of Self-Injury." *Journal of Applied Behaviour Analysis* 27 (2): 197–209.

LaGreca, Annette M., Kraslow Dandes, Susan, Wick, Patricia, Shaw, Kimberly & Stone, Wendy L. (1988). "Development of the Social Anxiety Scale for Children: Reliability and Concurrent Validity." *Journal of Clinical Child Psychology* 17 (1): 84–91.

Rapp, J. T., Miltenberger, R. G., Galensky, T. L., Roberts, Jennifer & Ellingson, Sherry A. (1999). "Brief Functional Analysis and Simplified Habit Reversal Treatment of Thumb Sucking in Fraternal Twin Brothers." *Child & Family Behaviour Therapy* 21 (2): 1–17.

Schilder, P. F. (1950). *The Image and Appearance of the Human Body: Studies in the Constructive Energies of the Psyche*. New York: International University Press.

Woods, D. W. & Miltenberger, R. G. (1996). "A Review of Habit Reversal with Childhood Habit Disorders." *Education and Treatment of Children* 19 (2): 197–214.

Woods, D. W., Fuqua, R. W., Siah, Adelene, Murray, Laura K., Welch, M., Blackman, E. & Seif, Tory. (2001). "Understanding Habits: A Preliminary Investigation of Nail Biting Function in Children." *Education and Treatment of Children* 24 (2): 199–216.

# LEGACIES OF REPRESSIVE REGIMES: LIFE TRAJECTORIES IN THE AFTERMATH OF POLITICAL TRAUMA

ILEANA ROGOBETE

## Introduction

Repressive regimes, through their nature and aggressive implementation of ideologies, leave deep scars and lasting psychological effects in the lives of individuals and communities alike. The post-apartheid South African society, although successful in avoiding a bloodshed transfer of political power, still faces the legacies of a violent past (Vogelman & Simpson 1990; Volkan 2009). Some of the earliest empirical studies with survivors of political violence have emphasised the devastating impact of detention, torture, police harassments and intracommunity violence on youth, adults, families and communities (Dawes & Tredoux 1989; Foster, Davis and Sandler 1987; Straker 1992). However, systematic studies exploring the recovery processes after apartheid trauma are rare. Thus, the aim of this chapter is to examine the life narratives of former victims of apartheid and their pathways to recovery after severe trauma. In doing so, the study seeks to highlight the victories and challenges they have faced in their healing journeys. At a practical level, this study aimed at reconnecting with former victims of apartheid, listening to what they needed to say almost twenty years after the collapse of apartheid and, therefore, to get an up to date view of their situation.

## Method

This study used qualitative methods and a thematic narrative analysis. We collected data using a narrative approach through in-depth interviews with victims of political violence during apartheid. The sample comprised ten survivors (six men and four women) of gross human rights violations who suffered detention, torture, police harassment, displacement, shootings, or loss of a significant other. We obtained the signature of informed consent

and permission from each participant to report the findings. We obtained ethical approval for the study from the Research Ethics Committee of the University of Cape Town's Department of Psychology (this study was part of a larger research, which took place at the University of Cape Town, Republic of South Africa, during 2009 to 2011 [Rogobete 2011]). We recorded the interviews (each lasting 100 to 120 minutes) and transcribed the content for analysis. The language of communication was English with the exception of one particular case in which we used interpretation. General areas of investigation included the impact of traumatic events, ways of coping with negative psychological effects, helpful and hindering aspects of their journey after trauma, their current situations and views about the future. We used peer debriefing to validate the accuracy and reliability of findings (Creswell & Miller 2000).

## Results—Life Trajectories after Trauma

The thematic narrative analysis of the ten transcripts revealed two main contrasting life trajectories: (1) building resilience and (2) developing bitterness. After the collapse of apartheid, many survivors of political violence had high hopes and expectations for the future. Some of the former victims, inspired by Nelson Mandela's example and ability to forgive, were able to embark on a journey to recovery and find new meanings for their lives (Gibson 2004). Others collapsed under the multitude of social, political and individual difficulties related to ongoing poverty, lack of employment and illness (Colvin 2000).

### Building Resilience

Six survivors constructed their stories after political trauma in positive terms emphasizing resilience, positive effectiveness, productive coping skills and fulfilment in the process of recovery. A first step in achieving resilience was to deny passivity and victimization ("I was not going to blame the legacy of apartheid or being marginalized"). People with a resilient self did not accept life as it came but decided to set up their own goals and objectives (Lifton 1993). As one responded reflected, "I set up goals and directions for myself, things I wanted to accomplish because I didn't want to be a product of my legacy. I wanted to establish a legacy." Another participant refused to listen to the voice inside that said, "You are inferior, you are nothing" and decided to honour instead the voice that said, "You are something, you can become something".

The next step in the process of building resilience was striving to accomplish goals. Once one had the experience of almost being killed, it seemed not only reasonable but imperative to reclaim the fullness of life. Rhetorically, one participant reflected: "I was going to pursue this at whatever cost. I have already pursued other things in my life, and the cost was nearly my life. So, why would I now hold back on my life in terms of shaping direction?" However, right decisions had to be followed by actions ("When I make up my mind about something then I go all out for it"). There were also lessons learnt from mistakes ("I see failure as a growth process") and risks needed to be taken ("If I hadn't taken the risk, I wouldn't have accomplished what I needed to accomplish") as failure is not an end but "another stepping stone towards getting to where I needed to go." Resilient participants were proud of their achievements and confident in their own abilities. This was not a result of arrogance, but came from dignity, discernment and the joy of expanding personal boundaries. As one respondent emphasised, "It was a matter of establishing things that I dreamt, then seeing them fulfilled and shaped in my lifetime now." They were also able to process and internalise positive feedback and encouragement from others. They were actively defining their identities and relationships with others. Not content with a label attached by others, they were eager to explore the roots of their identity and find their uniqueness ("How can I stretch myself, never be satisfied and find out what is it that is about me"). In their view, relationships are paramount and need to be carefully built. They were cautious at the beginning ("Trust is not easily given"), building their trust only as the relationship evolved ("Trust is a gradual thing. It is earned."). Faith and religious beliefs contributed significantly to a hope-focused attitude and the ability to find new meanings in life. Difficulties are just a "transitory phase in life" as, in fact, people are "destined for greater things." These beliefs had their roots in their faith: "I think it is everything to do with my faith that I have. I strongly believe that we are a purpose-driven creation." Such awareness provides human beings with the necessary energy and creativity to live a "purposeful existence which distinguishes them from inferior beings." Resilient participants made ontological links between their identity and their purpose in life, which strongly relates to one's contribution in society. As one respondent stated, "We were not created just to sit on this earth. We are supposed to be making contributions, you must give back to society, and that distinguishes us from animals."

Participants with resilient skills used the support that was available in their families and external circumstances strategically (Ungar 2008). They creatively found ways to mobilize relatives in the extended family to

provide support, apply for scholarships, achieve their dreams of having higher education and ultimately transcend racial and economic boundaries. Currently, they are using their jobs or professions to express themselves and as examples to other people in their community of their success ("This was a very profound moment for me because I could become a catalyst in transforming young minds.") Reconciliation and forgiveness were key elements in the personal and relational healing of resilient people (Gobodo-Madikizela 2008). First, they see forgiveness and reconciliation as closely interrelated, a constant struggle with one's self ("forgiveness has to start inside") and the other ("Each time when you wake up you have to say: today I don't know whom I am going to meet, but I'm trying to deal with people in a different way, as equals, no matter if they are white, black or red."). Secondly, reconciliation and forgiveness are interpersonal. Naturally proactive, the resilient participants decided to make the first step to connect with perpetrators. As one participant recalls, "Hatred was not going to give me victory. I told him (a white friend) I've made peace, and I forgive you, even though you didn't perform the atrocity, you still represent the race and so I forgive you. He looked at me and started crying … if I am not able to do that, I will be bitter for the rest of my life."

Finally, resilience allows one to reflect on their journey and incorporate the lessons learnt in the process and enjoy achievements: "I dealt with it to the best of my ability based on the limited resources I had available. If I look back and I see some of the people whom I lived with, they are dead, on drugs, but I still stand." However, as one participant expressed, "we have this ambivalence of good and evil and very often give in to evil." Indeed, all participants were not able to develop resilience; on the contrary, some became disappointed and saddened by the difficulties they had encountered in their journeys to recovery from past injustices and suffering.

**Bitterness and Disappointment**

The four narratives in this category include ruminations about the past and present injustices, disappointment with other people who "do not care" and complaints about lack of reparations for their sacrifices. These descriptions echo Linden et al.'s (2007) concept of post-traumatic embitterment syndrome, which relates to the loss of a child, lack of support in the aftermath of traumatic experiences, the devastating effects of torture, inability to find a safe context, loss of jobs, poverty and old age. Participants who experienced torture developed post-traumatic stress disorder and chronic trauma (Herman 1992; Straker 1992). As one

participant recalled, “My teeth were kicked out, I was electrocuted, I was blindfolded, I was made to take off my clothes and stay naked. They handcuffed me, they put electric wires around my fingers, and the electricity was switched on. I nearly died.” After the collapse of apartheid, having to support their families, they started to look for jobs, rather than continuing their education. They ended up poorly paid and not able to get a permanent job. They gradually developed a sense of bitterness and a “never-ending anger” as they felt marginalized (“it’s like talking to a concrete wall”) and detested by their communities (“we are laughing stocks in our communities”). The most difficult aspect to deal with was their shattered dreams and ideals: “I wanted to become a lawyer. I’m now a mental wreck. It never happened. My ambitions, my dreams collapsed …” They regret their involvement in the struggle and consider: “If I had stayed with my hands crossed and not done anything, I would have been better.” They are profoundly disappointed with the attitude of the existing government, which is “corrupt, living a posh life” and “does not care about the poor.” The present state of embittered survivors is described by a deep sense of self-hatred, self-disgust and reoccurring suicidal ideation. With profound sadness, one participant states, “If I need something to eat I would go to the soup kitchen … This is the man who fought for democracy … Isn’t that a joke? It is disgusting; it is so disgusting for all who fought for the country.” Dignity and self-respect are major psychological dimensions in the process of recovery. Victims who gained a social status after the collapse of apartheid had their dignity restored and were thus able to embark on a journey to recovery, whereas those who still have a lower socio-economic status continue to be victimized (Baker 2010; Colvin 2000; Skinner 1998).

## Discussion—Legacies of Oppression

Analysis of results shows that victims of repressive apartheid structures living in black communities experienced trauma as an engulfing continuous process, since trauma was an integral part of the everyday reality in which they lived. Even after the collapse of apartheid, for victims who continued to live in black communities shattered by crime and poverty, trauma has not ended. The current negative legacies of apartheid continue to re-traumatize former victims who still suffer injustices, violence and inhumane living conditions due to illness and social inequality (Colvin 2000; Edwards 2009; Simpson 1998; Skinner 1998). Nevertheless, participants who had the experience of a supportive healing relationship (Herman 1992) were able to develop constructive coping

skills, a higher purpose in life, and determination to fulfil their dreams (Landau 2007). Their first step was pursuing higher education, i.e. moving out and experiencing different social contexts. This supports Herman's (1992) view of the recovery process as beginning with a safe context and a healing relationship. However, other victims have integrated perceptions about the world as a hostile place in which assumptions about trust, safety, and coherence have been shattered (Janoff-Bulman 1992; Brison 2003; Herman 1992). They experienced repetitive broken relationships and loss of jobs, did not trust others and were disappointed with the way the current government is dealing with issues of crime and poverty. Their despair and bitterness have not come about as a result of detrimental comparison with the new wealthy and powerful elite. In other words, it is not primarily due to relative deprivation. Rather it comes from victims' perception that people in government are ignoring them and have been seduced by their own power and money and, worse than anything, have stopped searching for possible solutions to problems in black communities. Weine (2006) developed the concept of cultural trauma to describe the context in which due to trauma in society, the culture itself suffers changes in customs and behaviour.

Within the South African culture, the challenge occurs not only at the peripheral cultural layers, but at the core elements of the culture represented by key assumptions about life embedded in the concept of Ubuntu. The serious challenge to Ubuntu consists of the erosion of trust in relationships, extreme violence in behaviour and perception of the world as an unsafe place. This creates the impression of living in a traumatic culture in which traumatic events become individual aspects in the culture's texture. They reach a status of "normality" in people's understanding thus becoming an integral aspect of the way they manage their lives. The present results and people's everyday experience in townships confirm the sense of helplessness and fear related to continuing violence, crime, rape, HIV and poverty, thus contributing to the expansion of a traumatic culture (Kaminer, Grimsrud, Myer, Stein & Williams 2008; Kaminer & Eagle 2010).

## Conclusion

They considered that defeat is the greatest trauma in the life of the nations (Thomas Laqueur, in Kaplan 2005). Nevertheless, reflecting on the journey of the South African nation after the collapse of apartheid, one can gain multiple strengths which can overcome pessimism and help the nation continue the healing process. Even if some of the former victims of

apartheid may not have lived to see "the promised land," the majority of survivors remain committed to searching for the missing pieces that would bring clarity to their life, thus confirming that recovery is not an end in itself but an ongoing process of meaning-making. Besides clinical interventions aimed to enable people, there is a need for developing ways to restore the dignity of former victims of apartheid in assuring them decent living conditions and participation in the process of rebuilding the nation.

## References

Baker, D. (2010). "Watching a Bargain Unravel? A Panel Study of Victim's Attitudes about Transitional Justice in Cape Town, South Africa." *The International Journal of Transitional Justice* 4: 443–456.

Brison, S. (2003). *Aftermath: Violence and the Remaking of a Self*. Princeton, NJ: Princeton University Press.

Colvin, C. (2000). *We Are Still Struggling: Story Telling, Reparations and Reconciliation after the TRC*. http://www.csvr.org.za/docs/trc/wearestillstruggling.pdf.

Creswell, J. W. & Miller, D. L. (2000). "Determining Validity in Qualitative Inquiry." *Theory into Practice* 39 (3): 124–130.

Dawes, A. & Tredoux, C. (1989). "Emotional Status of Children Exposed to Political Violence in the Crossroads Squatter Area during 1986–1987." *Psychology in Society* 12: 33–47.

Edwards, D. (2009). "The Lasting Legacy of Trauma." In P. Gobodo-Madikizela & C. Van der Merwe (Eds.), *Memory, Narrative and Forgiveness*, 47–75. Newcastle upon Tyne: Cambridge Scholars Publishing.

Foster, D., Davis, D. & Sandler, D. (1987). *Detention and Torture in South Africa*. Cape Town: David Philip.

Gibson, J. (2004). *Overcoming Apartheid: Can Truth Reconcile a Divided Nation?* New York: Russell Sage Foundation.

Gobodo-Madikizela, P. (2008). "Trauma, Forgiveness and the Witnessing Dance: Making Public Spaces Intimate." *Journal of Analytical Psychology* 53: 169–188.

Herman, J. (2001). *Trauma and Recovery* (4th edition). London: Pandora.

Janoff-Bulman, R. (1992). *Shattered Assumptions: Towards a New Psychology of Trauma*. New York: The Free Press.

Kaminer, D. & Eagle, G. (2010). *Traumatic Stress in South Africa*. Johannesburg: Wits University Press.

Kaminer, D., Grimsrud, A., Myer, L., Stein, D. & Williams (2008). "Risk for Post-traumatic Stress Disorder Associated with Different Forms of Interpersonal Violence in South Africa." *Social Science and Medicine* 67: 1589–1595.

Kaplan, E. A. (2005). *Trauma Culture: Politics of Terror and Loss in Media and Literature*. New Jersey: Rutgers University Press.

Landau, J. (2007). "Enhancing Resilience: Families and Communities as Agents for Change." *Family Process* 46: 351–365.

Linden, M., Rotter, M., Baumann, K. & Lieberei, B. (2007). *Posttraumatic Embitterment Disorder: Definition, Evidence, Diagnosis, Treatment*. Cambridge, MA: Hogrefe and Huber.

Lifton, R. J. (1993). *The Protean Self: Human Resilience in an Age of Fragmentation.* New York: Basic Books.

Rogobete, I. (2011). *Reconstructing trauma and recovery: Life narratives of survivors of political violence during apartheid.* Unpublished doctoral dissertation. University of Cape Town, South Africa.

Skinner, D. (1998). *Apartheid's Violent Legacy: A Report on Trauma in the Western Cape*. Cape Town: The Trauma Centre for Victims of Violence and Torture.

Straker, G. (1992). *Faces in the Revolution: The Psychological Effects of Violence on Township Youth in South Africa*. Cape Town: David Philip.

Ungar, M. (2008). "Resilience across Cultures." *British Journal of Social Work* 38: 218–235.

Vogelman, V. & Simpson, G. (1990). *Apartheid's Violent Legacy*. http://www.csvr.org.za/wits/articles/artapart.htm

Volkan, V. (2009). "The Next Chapter: Consequences of Societal Trauma." In P. Gobodo-Madikizela & C. Van der Merwe (Eds.), *Memory, Narrative and Forgiveness*, 1–23. Newcastle: Cambridge Scholars Publishing.

Weine, S. (2006). *Testimony after Catastrophe: Narrating the Traumas of Political Violence*. Evanston: Northwestern University Press.

# IS THERE A DYNAMICS OF ACADEMIC LEARNING?

DANIELA ROMAN AND LIOARA COTURBAŞ

## Theoretical Aspects

The reconstruction of the new field of university education involves the transition from an education of listening to active-participation, and valuing the paradigm of competence represents a priority of specialists in education.

This is required by "the more complex, more diversified, more stressful and more challenging learning environment" as Neacşu notices (2010, 13), favoured by the facilitated access to information. Therefore, we must reconsider the learning style and the teaching style towards a more flexible, student-centred approach, meeting the advanced theory with practice aiming at effective learning.

Different studies (Vermunt & Verloop 1999; Vermetten, Lodewijks & Vermunt 1999; Vermunt & Vermetten 2004; Entwistle 2000; Lindblom-Ylänne et al. 2006) point out the conceptual relations established by research between the concepts of teaching and the levels of understanding, meaning that different ways of teaching and assessment along with other aspects of the teaching-learning environment have an impact on the quality of learning and academic performance.

Vermetten, Lodewijks & Vermunt (1999) conducted a study regarding the consistency and variability of learning strategies according to different university courses, and identified that students adopt different strategies when it comes to different courses. This indicates the presence of a component depending on the context within the strategy, but the authors have also identified that there is certain variability between the different strategies adopted by students for different courses.

Other authors have shown that students were consistent in what concerns the strategies used in different disciplines. This indicates the existence of an individual component in the use of learning strategies. The question of stability versus dynamics does not seem to have only one

answer. Most researchers agree that there is a specific component and an individual component of context in the use of learning strategies.

Various studies suggest that the perception of a difficult task causes an orientation towards reproduction of the learning approach. Trigwell, Prosser & Waterhouse (1999) found that the students whose teachers focus on an information approach were more likely to adopt a surface approach of learning.

The authors indicate that the students who experience elaboration-oriented learning environments are more inclined to use an elaboration-oriented learning approach. In this respect, they found that traditional teaching programs with a higher emphasis on knowledge transfer and control manifested by teachers are associated with the students' reproductive patterns of learning.

Based on these considerations, we developed this study in the Romanian academic environment. We have to mention that this is only one in a series of studies dedicated to the issue of academic learning.

In this chapter, based on a transversally designed study we focused on analysing the dynamics of learning strategies according to two university courses attended by the students of the Psychology study programme.

The formulated hypothesis postulates the existence of significant differences in the degree in which learning strategies are used depending on the discipline.

## Methodology

### Participants and Design

Two-hundred and six students aged nineteen to forty participated in the quasi-experiment, who completed the instrument in conditions of informed consent.

At the same time, the professors who teach the two subjects completed the instrument on how they approached the discipline. Thus, the relation between learning approach and teaching approach has become noticeable.

The design of the research is of the intragroup one-factorial type. The learning strategies used in this study are operationalised by means of the scores obtained on the scales and subscales of the Inventory of Learning Styles aiming specific courses (Inventory of Learning Styles, Vermunt 1996–1998).

## Instruments

We present below the scales for the concerned dimensions. We have previously checked their psychometric qualities on the concerned population.

The Inventory of Learning Styles: Foundations of Psychology (Vermunt, 1996, 1998) questionnaire is an adapted variant of Vermunt's Inventory of Learning Styles (ILS), a Likert type scale with 50 items, which measures students' cognitive and metacognitive strategies. Usually, ILS requires that the students elaborate on their usual style of learning. For this research, the ILS addressed the learning processes of the students in a specific context (for instance "I learn each chapter separately in the course of Foundations of psychology, and I study every finished section separately," "When studying the Foundations of psychology, I propose learning purposes that are not prescribed by the teacher") so that the instructions were changed: "Read each statement carefully and then indicate to what extent you used this method when you studied the Foundations of psychology."

The Inventory of Learning Styles (ILS): Experimental psychology followed a similar procedure, but adapted to the mentioned course.

Approaches to Teaching Inventory (ATI) (Trigwell & Prosser, 2004) assesses the type of teaching approach used by university professors. ATI measures two approaches: information transmission/focus on teacher and conceptual change/focus on student.

## Procedure

Students have completed the two versions of the ILS instrument. We applied it collectively, without a time limit. The condition imposed by the experimenter was that participants were familiar with the two disciplines, that they attended the lecture at least five times and passed the exams for the two disciplines. We accomplished the testing of teaching approaches with the support of the professors responsible for the two disciplines (who have completed ATI questionnaire, each for his own discipline) within the Education Focused on Student programme. We assured the participants of the confidentiality of their responses, their consent being obtained in informing conditions.

## Results and Interpretation

We present the qualitatively analyzed results in the tables below. We analysed the hypothesis based on several quantitative indices. In the first phase, we verified the normality of distribution for students' learning strategies by means of the $Z_{Kolmogorov\text{-}Smirnov}$ ($Z_{KS}$) test.

The values obtained indicate that the distributions can be approximated to normal ones in the case of the variables external regulation of processes and analysis and regulation strategies ($p>.05$). Therefore, we can assume data symmetry, and we use a parametric test for comparison: t test pair samples.

For the other variables, the chances that the distribution does not respect the symmetry criterion are statistically significant ($p<.05$), therefore we used nonparametric comparison methods. Table 1-15 below presents the results for the comparison of learning strategies according to courses.

**Table 1-15. T test for the comparison of strategies in the subjects Foundations of Psychology and Experimental Psychology**

| Strategy | m | a.s | N | t | df | p | d |
|---|---|---|---|---|---|---|---|
| External regulation of proc. D1F* | 14.12 | 3.13 | | -4.065 | 205 | **.000** | **0.59** |
| External regulation of proc. D2Ex** | 15.36 | 3.87 | 206 | | | | |
| Analysis F | 15.75 | 4.07 | | -.824 | 205 | .411 | |
| Analysis Ex | 15.92 | 4.40 | 206 | | | | |
| Regulation strategy F | 73.66 | 11.31 | | -3.387 | 205 | **.001** | **0.50** |
| Regulation strategy E | 75.68 | 13.20 | 206 | | | | |

D1F* Foundations of Psychology, D2E ** Experimental Psychology

The analysis of Table 1-15 shows that, for the t test, the respondents have obtained significant results concerning strategies: external regulation of processes [$t(205)=-4.065$, $p<.01$, $d=0.59$] and regulation strategies [$t(205)=-3.387$, $p<.01$, $d=0.50$]. The magnitude of the effect is average, indicating dynamics in using these strategies.

Based on the results in the strategy analysis [$t(205)=-.824$, $p>.05$], we can conclude that there are not any significant differences in what concerns the use of these strategies according to the two courses. The results of the comparisons for the other strategies can be identified in Table 1-16 below.

**Table 1-16. Comparisons of processing strategies according to specific courses**

| Strategy | Disciplines | N | Means of ranks | Sum of ranks | Z | p | d |
|---|---|---|---|---|---|---|---|
| Concrete processing | Experimental | 206 | 72.35 | 5933.00 | 2.084 | **.037** | 0.16 |
| | Foundations | 206 | 67.88 | 3937.00 | | | |
| Relating & structuring | Experimental | 206 | 80.21 | 5454.00 | -.667 | .505 | |
| | Foundations | 206 | 73.50 | 6174.00 | | | |
| Sequential processing | Experimental | 206 | 80.05 | 7845.00 | -3.070 | **.002** | 0.20 |
| | Foundations | 206 | 75.88 | 4401.00 | | | |
| Critical thinking | Experimental | 206 | 72.44 | 4781.00 | -2.160 | **.031** | 0.36 |
| | Foundations | 206 | 81.30 | 7154.00 | | | |
| Processing strategies | Experimental | 206 | 99.92 | 9592.00 | -1.222 | .222 | |
| | Foundations | 206 | 86.66 | 7799.00 | | | |

The results of comparisons with the Wilcoxon scale indicate significant differences regarding concrete processing ($z=-2.084$, $p<.05$, $d=0.16$), sequential processing ($z=-3.070$, $p<.01$, $d=0.20$) and critical thinking ($z=-2.160$, $p<.05$, $d=0.36$).

For the subscales relating & structuring and the composite score of processing strategies, we cannot endorse the hypothesis. The results of comparisons of regulation strategies according to specific courses are presented in Table 1-17.

**Table 1-17. Comparisons of regulation strategies according to specific courses**

| Strategy | Disciplines | N | Means of ranks | Sum of ranks | Z | p | d |
|---|---|---|---|---|---|---|---|
| Self-regulation of processes | Experimental | 206 | 72.24 | 5057.00 | -.255 | .798 | |
| | Foundations | 206 | 68.76 | 4813.00 | | | |
| Absence of regulation | Experimental | 206 | 73.18 | 4537.00 | -1.105 | .269 | |
| | Foundations | 206 | 70.20 | 5616.00 | | | |
| External regulation of results | Experimental | 206 | 60.10 | 3005.00 | -5.014 | **.000** | **0.36** |
| | Foundations | 206 | 83.20 | 8320.00 | | | |
| Self-regulation of results | Experimental | 206 | 70.46 | 5114.00 | -1.664 | .096 | |
| | Foundations | 206 | 63.93 | 3664.00 | | | |

From the data analysis, we find that, as far as self-regulation processes are concerned, the highest average of ranks is recorded by respondents for the course of Foundations of Psychology (mean of ranks = 72.24).

The external regulation of results seems to be present in a higher proportion in the course of Experimental Psychology (mean of ranks = 83.20). Wilcoxon test value for this subscale corresponds to a lower significance threshold than the critical one, but a small to medium size of effect ($z=-5.014$, $p<.01$, $d=0.36$). Therefore, it is likely that students use the external regulation of results in different percentages according to the two courses.

Regarding the absence of regulation, the respondents consider that this dimension is present in a higher degree in the case of the course of Foundations of Psychology (mean of ranks = 73.18).

In order to ensure that the differences are significant, we compared the respondents' scores for the two disciplines with the Wilcoxon test. However, data analysis indicates that there are not any significant differences in the utilization of strategies for the two courses ($z=-1.105$, $p>$ 05).

According to the value of the Wilcoxon test to the subscales self-regulation processes and absence of regulation ($p>.05$), there is a decidedly low probability that students use the two strategies in varying degrees.

## Discussion and Conclusions

Results confirm that there are certain dynamics, but also a high stability in the use of learning strategies in the case of both university courses.

In the case of cognitive (processing) strategies—concrete processing, analysis, critical thinking—analysis of comparisons indicates the existence of significant differences. These three strategies belonging to the factors focused on understanding (critical processing), reproduction (sequential processing) and application of knowledge (concrete processing) emphasising the same pattern concerning the variations between courses. The fact that these three independent factors vary simultaneously indicates the student's personal factors (the lack of differentiation of learning patterns by the student) or the context of variables which may evoke these strategies (results also argued in the study by Vermetten, Lodewijks & Vermunt [1999]).

In what concerns critical processing, students record significant changes in the extent in which this strategy is used for the two courses ($d=0.36$). This dimension involves adopting a critical attitude towards a

text, the comparison with their own opinions and drawing personal conclusions based on facts and arguments, prior to the acceptance of what is written or said (Vermunt 1999). Within this discipline, students may be required to provide explanations concerning mental processes and to look for similar opinions formulated by various authors, thus being given different perspectives of analysis. Moreover, they are asked to determine whether there is consistency between the authors' opinions and their own. Thus, they form opinions and personal interpretations and construct their own judgment on the correctness of information. This dimension of cognitive processing is more frequently stimulated and, therefore, more used in this discipline.

First-year students cannot appreciate the usefulness of each course in their professional development, and as a consequence they develop externally guided learning strategies. The analysis of results reveals significant differences in the external regulation strategy of processes [$t(205)=-4.065$, $p<.01$, $d=0.59$], the external regulation strategy of results ($z=-5.014$, $p<.01$, $d=0.36$), and also in what concerns the composite score of regulation strategies [$t(205)=-3.387$, $p<.01$, $d=0.50$]. We can say that we are witnessing dynamics of these dimensions when we refer to learning the two subjects. Students meet certain requirements only if the professor who teaches this course demands them.

By relating the results obtained by the students to the results obtained by the professors who teach these disciplines (remembering that the professor has completed the instrument of teaching approaches), we can notice the following aspects: the two teachers have obtained higher means in the dimension information transmission, and remarkably close means ($m=43.00$ and $m=41.00$); the teacher who is more focused on the dimension conceptual change ($m=39.00$, compared to $m=37.00$ at TI) has students who reported that they are regulated externally, so they are regulated by the teacher or the discipline; the teacher with a learning approach centred more on providing information ($m=43.00$) recorded significant results for their students in favour of critical thinking, which is a deep processing strategy.

Taking into consideration that the differences between the two approaches are extremely low, we cannot come to a conclusion about these differences, which might be due to other factors (assessment system, regulatory elements in the learning environment, etc.).

The inclusion of more teachers in the study is necessary in order to be able to attribute or not notice differences to teaching approaches. This is a future research direction created by this study. The present chapter can be

a starting point for the study of the impact of teaching approaches on learning.

## References

Entwistle, N. J. (2000). *Promoting deep learning through teaching and assessment: conceptual frameworks and educational contexts*. Paper presented at the TLRP Conference, Leicester, November 2000.

Entwistle, N., McCune, V. & Hounsell, J. (2002). *Approaches to Studying and Perceptions of University Teaching-Learning Environments, Concepts, Measures and Preliminary Findings. Enhancing Teaching-Learning Environments in Undergraduate Courses Project, Higher and Community Education*. http://www.ed.ac.uk/etl.

Neacşu, I. (2010). *Introducere în psihologia educaţiei şi a dezvoltării* [Introduction to Educational and Developmental Psychology]. Iaşi: Polirom.

Roman, D. (2011). *Stiluri de învăţare la studenţi* [Students' Learning Styles]. Oradea: Editura Universităţii din Oradea.

Trigwell, K. & Prosser, M. (2004). "Development and Use of the Approaches to Teaching Inventory." *Educational Psychology Review* 16: 409–424.

Trigwell, K., Prosser, M. & Waterhouse, F. (1999). "Relations Between Teachers' Approaches to Teaching and Students' Approaches to Learning." *Higher Education* 37: 57–70.

Vermetten, Y., Lodewijks, H. & Vermunt, J. (1999). "Consistency and Variability of Learning Strategies in Different University Courses." *Higher Education* 37 (1): 1–21.

Vermunt, J. D. & Verloop, N. (1999). "Congruence and Friction Between Learning and Teaching." *Learning and Instruction* 9: 257–280.

Vermunt, J. D. (1994). *Inventory of Learning Styles in Higher Education: Scoring Key*. Tilburg University: Department of Educational Psychology.

# EMOTION REGULATION: EXPANSION OF THE CONCEPT AND ITS EXPLANATORY MODELS

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## Introduction

If, for some researchers, emotion was a neuronal activation state without a function, recent research stated that emotions are functional; they facilitate decision making, prepare the person for rapid motor responses, provide the necessary information for the individual's adaptation to the environment (Bosse, Pontier & Treur 2010) and are most relevant to the individual's perception of life in general. (Lazarus 2011)

Tangential to the traditional input-output relationships for a long time, psychological analyses also shaped the perception of the individual as a passive subject, "exposed" to emotions they cannot keep under control. Although emotions have a significant impact on our lives, and at various levels (cognitive, social, behavioural, attitudinal), recent research proves that people are not under the direct and immediate influence of the emotional impulse. Dating back to antiquity and forming a basic principle of the world religions, the desideratum of emotional control builds an entire explanatory edifice between stimulus and emotional response.

In the last two decades, psychological research has focused more on emotion regulation (Gross & Munoz 1995; Gross 2007; Bosse, Pontier & Treur 2010). Empirical observations and analyses of this concept have led to specific definitions and theories. For example, Gross (2007) considers that emotion regulation refers to the heterogeneous set of processes by which emotions are regulated. ER, defined in numerous and mostly conflictual ways, includes in most, if not all definitions, the idea of strategies that the individual develops to modify the course and the expression of emotional experience (Cole, Martin & Dennis 2004; Dennis 2007).

## ER as a Determinant Factor

"How can such strategies be developed?" is the first questions that outlines our approach and forces us to analyse the ER concept from an ontogenetic perspective.

A global understanding of the child and teenager emotional development is built on an integrative approach named "transactional" (Lazarus & Folkman, in Lazarus 2011), which analyses the interaction between biologic variables and processes with the social. For example, temperament, as a biologic factor, is associated with emotions and their regulation and even considered a component of the emotional process. The definitions of various authors support the idea. Allport (1937, 54) considers that temperament refers to "phenomena that specifically describe the emotional nature of an individual."

Early temperamental characteristics that differentiate children from one another have been found to influence the kinds of ER skills and strategies children develop (John & Gross 2004; Jaffe, Gullone & Hughes 2010). Also, personality traits, developed from early temperamental dispositions, have been associated with ER strategies. For instance, low levels of extraversion are connected to suppression, while low levels of neuroticism slightly associate with cognitive reappraisal (John & Gross 2004). Increased reactivity has as a result the experiencing of high negative emotions that consequently trigger emotional and behavioural problems (John & Gross 2004; Jaffe, Gullone & Hughes 2010; Morris et al. 2002). Reactivity, as a temperamental dimension, works as a predictive factor for ER (Yagmurlu & Altan 2010). Hypersensitivity and cyclothymic disposition (as temperamental dimensions) are significantly and positively correlated with the two ER strategies, suppression and cognitive reappraisal (Khodarahimi, Hashimah & Mohd-Zaharim 2011). Studies in temperament, approached from the perspective of reactivity and behavioural inhibition, point out different ER strategies according to temperamental differences (Cole, Martin & Dennis 2004).

In ER development, parental care-giving practices play an important contextual role in that they may magnify or minimize adaptive or maladaptive temperamental tendencies and emotion-related behaviours (Jaffe, Gullone & Hughes 2010). Biologic factors, socially moulded mainly by parental intervention, will generate a new construct that will ensure adaptation (or not).

Parents exert the most important influence on the development of emotion regulation (ER), particularly in early childhood (Zeman, Perry-Parish & Cassano 2010), but also in teenage years (although few studies

deal with a parental influence on ER at this age). Strategies that parents frequently use to socialise their children's negative emotions such as sadness, anger, shame, fear, in different stages of their development (childhood, teenage), have an impact on the child's psychic health. A considerable body of research indicates that when parents respond supportively and sympathetically to the emotional expressions of their offspring, children cope more adaptively with their emotions in the immediate situation and acquire more positive emotion regulatory capacities in the long term (Gross 2007). By contrast, when parents respond to their children's emotions in ways that are denigrating, punitive, or dismissive, more negative outcomes are likely to result.

The Malatesta-Magai model (Magai 1996) is one of the landmarks in the evaluation of parental response strategies to the child's emotional display. Based on Tomkins' Affect Theory, the model proposes five strategies (three negative and two positive) that parents frequently use to socialize children's emotions: reward, override, punish, neglect and magnify. A rewarding response is a supportive response that provides comfort, empathy and helps the child solve their problems. By override responses, the parent tries to dismiss the emotion by distracting the child's attention. Punitive responses discourage emotional display while magnifying responses involve a matching response equal or stronger in intensity than the child's emotional experience. Neglect occurs when the child's emotional expression is ignored (Klimes-Dougan et al. 2007; Silk et al. 2011).

According to this model, Magai (1996) has built an instrument for the direct evaluation of parental strategies for emotion socialization. This instrument allows for the detection of significant relationships between parental practices of socialization of emotion and internalizing and/or externalizing symptoms. Research explains internalizing and externalizing symptoms in connection with parental strategies. For instance, Brand & Klimes-Dugan (2010) point out the significant relationship between consistent/inconsistent parenting and teenage internalizing/externalizing disorders. Using the same model, Silk et al. (2011) identify significant connections, statistically speaking, between maternal depression and mother's response strategy to the child's negative emotions as well as between these responses and the child's consequent internalizing symptoms. Klimes-Dougan et al. (2007), in a longitudinal investigation involving 220 families, identified parental differences depending on the child's age—parents tend to use more punitive, rather than supportive emotion socialization strategies with their teenage children. More than that, parental strategies of emotion socialization are significantly

concurrent with teenage status. Starting from the same paradigm of socialization of emotions, Garside & Klimes-Dougan (2002) underlined significant connections between the parental style of socialization of emotions (measured according to the variable of type parent) and psychological distress.

The recurrent idea found in the conclusions is that internalizing/ externalizing disorders interfere with ER optimal abilities. In fact, the parental strategy of socialization of emotions has an implicit impact on the ER mechanisms that take part in emotion management.

## ER Explanatory Models

"What is, in fact, ER?" and "What are the ER forms that each individual activates in everyday life?" are questions that support the second part of the present chapter.

According to Thompson (in Bosse, Pontier & Treur 2010), the term emotion regulation (ER) refers to the processes, both extrinsic and intrinsic, that are responsible for recognizing, monitoring, evaluating and modifying emotional reactions. ER processes involve the initiation, enhancement and reduction of both positive and negative emotions (Jaffe, Gullone & Hughes 2010).

Gross (2007) assert that ER is subordinated to affect regulation, as are three other constructs: coping, mood regulation and psychological defences. ER first stirred the researchers' interest twenty years ago, and since then a series of explanatory models, theories and paradigms have been conceived. One of the most renowned and prodigious theories in the study of emotion regulation is the process model of emotion regulation (Gross 2001). Built on the modal model of emotion, the process model of emotion regulation underlines five points in which the individual can regulate their emotions: situation selection, situation modification, attentional deployment, cognitive change, and response modulation (Gross 2007). In turn, these can be organized in families of strategies, the first four processes considered to be antecedent focused regulation strategies because they occur before the response tendency and come in opposition with the last process, which is a response focused strategy and occurs after the response has been generated (Gross & Munoz 1995).

Situation selection is the most forward-looking approach to emotion regulation. According to Gross (2007), it is often difficult to distinguish between situation selection and situation modification. Situation modification, as defined and explained by Gross in the given context, is related to the modification of the external, physical aspects of the

situation. The modification of the internal environment occurs under the influence of cognitive change. Attentional deployment refers to how individuals direct their attention within a given situation in order to influence their emotions, and it is one of the first emotion regulatory processes to appear in development (Rothbart, Ziaie & O'Boyle 1992). Cognitive change refers to changing how we appraise the situation we are in to alter its emotional significance, either by changing how we think about the situation or about our capacity to manage the demands it poses (Gross 2007, 14). Response modulation is a response focused strategy that occurs late in the emotion generative process, after response tendencies. Among the practices that trigger this emotional response regulation strategy we enumerate medication, relaxation exercises, alcohol, drugs or, simply, the regulation of emotion expressive behaviour.

Among the many strategies involved in emotion regulation management, Gross's process model underlines two: cognitive reappraisal (a cognitive change strategy that involves the reshaping of the potential emotion generating situation in such a way that the emotional response is altered) and expressive suppression (a response strategy that involves the inhibition of the ongoing emotion expressive behaviour) (Gullone et al. 2010). Cognitive reappraisal is a strategy of cognitive change, while suppression is a response modulation strategy.

The ER cognitive model (Ochsner & Gross 2004) is based on the clarification of ER neuronal architecture and develops two of the five strategies that compose the ER process model—attentional deployment and cognitive change. According to this model, emotion generation and regulation involve the interaction of appraisal systems, such as the amygdala that encode the affective properties of stimuli in a bottom-up fashion, with control systems implemented in the prefrontal and cingulate cortex that support controlled top-down stimulus appraisals. According to the cognitive model, attentional deployment involves two frequently studied ER strategies—selective attention and attention distraction.

Cognitive change, as explained by this model, "involves an integrating bottom-up and top-down processes, more precisely, top-down processes are involved in the modulation of bottom-up activities" (Gross 2007, 96). Cognitive change can be produced by controlling either the emotion generative process (the emotional response is initiated in the absence of a triggering stimulus) or the regulatory process (the triggered emotional response can be modulated by cognitive processes). Both generative and regulatory control can be achieved by two top-down strategies, cognitive reappraisal and direct experimentation of emotional response modulation

associated with an event or an action (it involves instrumental and classical conditioning techniques).

## Concept Expansion

"Which are the ER consequences on emotional, cognitive and social functioning?" is the question to answer in the third part of our chapter. Apart from the exploitation of the cognitive dimension and visualization of the neuronal architecture, Gross's process model receives an extremely new computational orientation (Bosse, Pontier & Treur 2010) that is meant for different areas of artificial intelligence.

The predictive studies (Gross 2007) integrate both personality traits (the Big Five model) and specific constructs of social-cognitive theories, such as optimism or functional attitude, belief in the personal ability to alter one's emotions etc. Tamir et al. (in Gross 2007) found support for the prediction of beliefs about emotions—individuals who viewed emotion as more malleable were more likely to report actively modifying their emotions by changing their appraisal of emotion-eliciting events. By cognitive reappraisal (CR) and expressive suppression (ES), ER is extended and is significantly interrelated to many constructs that measure. Affective functioning CR has a positive correlation with expression and experimentation of positive emotions and negative correlation with negative emotions (John & Gross 2004). Cognitive functioning CR positively correlates with memory (ibid.). Social functioning CR positively correlates with interpersonal contact (ibid.) and openness (Dennis 2007). Mental health CR correlates negatively with anxiety (ibid.) and depressive disposition (Haga, Kraft & Corby 2009). ER strategies positively correlate with life satisfaction (Schutte, Manes & Malouff 2009) or become, themselves, predictive factors for this variable (Haga, Kraft & Corby 2009).

## Conclusions

The three areas of analysis of a new and dynamic concept this chapter dealt with allowed for the understanding of the threefold perspective on the ER as a construct, explained from the perspective of biological and situational factors, as a theoretical model, and as a variable with manifold and significant implications on the individual. The clinical implications of the explanatory ER models are of great importance in the psychotherapeutic interventions in dysfunctional ER strategies with a view to better psychological functioning and to the individual's general well-being.

## References

Allport, G. W. (1937). *Personality: A Psychological Interpretation.* New York: Holt, Rinehart and Winston.

Bosse, T., Pontier, M. & Treur, J. (2010). "A Computational Model Based on Gross' Emotion Regulation Theory." *Cognitive System Research* 11: 111–230.

Brand, A. E. & Klimes-Dugan, B. (2010). "Emotion Socialization in Adolescence: The Roles of Mothers and Fathers." *New Directions for Child and Adolescent Development* 128: 85–100.

Cole, P. M., Martin, S. E. & Dennis, T. A. (2004). "Emotion Regulation as a Scientific Construct: Methodological Challenges and Directions for Child Development Research." *Child Development* 75 (2): 317–333.

Dennis, T. A. (2007). "Interactions Between Emotion Regulation Strategies and Affective Style." *Motivation & Emotion* 31 (3): 200–207.

Garside, R. B. & Klimes-Dougan, B. (2002). "Socialization of Discrete Negative Emotions**:** Gender Differences and Links With Psychological Distress." *Sex Roles* 47 (3/4): 115–128.

Gross, J. J. & Munoz, R. F. (1995). "Emotion Regulation and Mental Health." *Clinical Psychology: Science and Practice* 2: 151–164.

Gross, J. J. (2001). "Emotion Regulation in Adulthood: Timing Is Everything." *Current Directions in Psychological Science* 10: 214–219.

Gross, J. J. (2007). *Handbook of Emotion Regulation*. New York–London: The Guilford Press.

Gullone, E., Hughes, E. K., King, N. J. & Tonge, B. (2010). "The Normative Development of Emotion Regulation Strategy Use in Children and Adolescents**:** A 2-Year Follow-Up Study." *Journal of Child Psychology & Psychiatry* 51 (5): 567–574.

Haga, S. M., Kraft, P. & Corby, E. K. (2009). "Emotion Regulation: Antecedents and Well-Being Outcomes of Cognitive Reappraisal and Expressive Suppression in Cross-Cultural Samples." *Journal of Happiness Studies* 3: 271–291.

Jaffe, M., Gullone, E. & Hughes, E. K. (2010). "The Roles of Temperamental Dispositions and Perceived Parenting Behaviours in the Use of Two Emotion Regulation Strategies in Late Childhood." *Journal of Applied Developmental Psychology* 31: 47–59.

John O. P. & Gross J. J. (2004). "Healthy and Unhealthy Emotion Regulation: Personality Processes, Individual Differences and Life Span Development." *Journal of Personality* 72: 1301–1334.

Khodarahimi, S., Hashimah, I. & Mohd-Zaharim, N. (2011). "Cyclothymic Hypersensitive Temperament, Emotion Regulation, Positive and Negative Affects and Attachment Style." *Individual Differences Research* 9 (3): 183–198.

Klimes-Dougan, B., Brand, A. E., Zahn-Waxler, C., Usher, B., Hastings, P. D., Kendziora, K. & Garside, R. B. (2007). "Parental Emotion Socialization in Adolescence: Differences in Sex, Age and Problem Status." *Social Development 16 (2):* 326–342.

Lazarus, R. S. (2011). *Emoţie şi adaptare* [Emotion and Adaptation]. Bucureşti: Trei.

Magai, C. M. (1996). *Emotions as a Child Self-Rating Scale*. New York: Long Island University.

Morris, A. S., Silk, J. S., Steinberg, L., Sessa, F. M., Avenevoli, S. & Essex, M. J. (2002). "Temperamental Vulnerability and Negative Parenting as Interacting Predictors of Child Adjustment." *Journal of Marriage and Family* 64: 461–471.

Ochsner, K. N. & Gross, J. J. (2004). "Thinking Makes It So: A Social Cognitive Neuroscience Approach to Emotion Regulation." In R. Baumeister & K. Vohs (Eds.), *The Handbook of Self-Regulation*, 221–255. New York, NY: Guilford Press.

Rothbart, M. K., Ziaie, H. & O'Boyle, C. G. (1992). "Self-regulation and Emotion in Infancy." In N. Eisenberg & R. Fabes (Eds.), *Emotion and Its Regulation in Early Development (New Directions for Child Development*, 7–23. San Francisco, CA: Jossey-Bass.

Schutte, N., Manes, R. & Malouff, J. M. (2009). "Antecedent-Focused Emotion Regulation, Response Modulation and Well-Being." *Current Psychology* 28 (1): 21–31.

Silk, J. S., Shaw, D. S., Prout, J. T., O'Rourke, F., Lane, T. J. & Kovacs, M. (2011). "Socialization of Emotion and Offspring Internalizing Symptoms in Mothers with Childhood-Onset Depression." *Journal of Applied Developmental Psychology* 32: 127–136.

Yagmurlu, B. & Altan, O. (2010). "Maternal Socialization and Child Temperament as Predictors of Emotion Regulation in Turkish Preschoolers." *Infant and Child Development* 19: 275–296.

Zeman, J., Perry-Parish, C. & Cassano, M. (2010). "Parent-Child Discussions of Anger and Sadness: The Importance of Parent and Child Gender during Middle Childhood." *New Directions for Child and Adolescent Development* 128: 65–68.

# Analysis of the Professional Training Needs of Students

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## Introduction

The general trend of university education focuses on the student's education and training needs. This task is extremely difficult, as these needs are different from one student to another. A few years ago, the student was regarded as a passive subject of the educational action; at present, the active and continuous involvement of the student in the process of training becomes a necessity. This is the reason why this chapter aims to reveal these educational and training needs of students by using one anonymous questionnaire which aims at precisely revealing and measuring them. The research allowed us to come up with five hypotheses, and we have tried to establish to what extent these hypotheses have been validated or invalided by the results of the research.

## Research Design

The purpose of this study is to identify students' needs for professional training, as well as ways to reach the aims of university education. The hypotheses of the research are:

- Hypothesis 1: The professor will reach the targeted objectives if they establish a partnership relationship with the students.
- Hypothesis 2: The real didactic communication will be reached if the educator respects students' opinions and points of view, creating a favourable environment to dialogues and exchange of ideas.
- Hypothesis 3: In order to ensure active participation of students, it is necessary for the educator to choose active methods, which would raise students' interest and curiosity.

## Statistical Methods

The study relies on data from a sampling survey investigating the opinion of students with regard to the quality of education. The sampling survey was applied to a non-probability sampling group. The students were selected randomly from two universities: the Alexandru Ioan Cuza University of Iaşi (257 students) and the Ştefan cel Mare University of Suceava (189 students), a total of 446 students. The favoured surveying technique was the individual filling in of the questionnaire in a group (Rotariu & Iluţ 1997, 54). We used non-parametric statistical testing and the Mann-Whitney test.

## Assessing and Interpreting Data

In Q2 (To what extent do you consider the mission of the university is accomplished?), the score was 3.15 on a scale from 1 to 5, slightly above the average, which means that students consider that the mission of the university is accomplished to a high extent. The reasons are orientation of practical activities and courses towards students' needs (27.67%), inadequate facilities (23.12%), good professor-student relationship (21.72%), seriousness of both professors and students (15.59%), and limited access to the internet (11.91%) (see Figure 1-11 below). A professor should be (Q4): a good specialist (21.94%), passionate about the activity they are involved in (19.81%), moral (reliable, punctual, incorruptible) (18.10%), good educator (14.59%), open to change 13.21%), and objective in evaluation (12.35%) (see Figure 1-12 below). To Q5 regarding the need for a good professor-student relationship, 95.3% of the students answered Yes and 4.7% answered No: better professor-student communication (22.60%), facilitating the exchange of ideas (21.90%), students' positive motivation (14.90%), removal of tension between professors and students (8.79%), relaxed environment (7.21%), and encouraging students' participation (5.13%) (see Figure 1-13 below). In Q6, the average is 4.5, which confirms the need for a better didactical professor-student communication. The main reasons were: more dynamic courses and seminars (25.11%), more knowledge (21.61%), more pleasant environment (18.53%), more appreciation for the students (18.43%), and more participation from the students (16.33%) (see Figure 1-14 below). The factors which can favour an efficient communication between professors and students, and between students (Q7) are: mutual respect (27.9%), intellectual curiosity (24.3%), adequate social and emotional environment (14.4%), professors' correctness (14.0%), good professional

relationship (10.0%), and extra-curricular activities (9.4%) (see Figure 1-15 below). The methods professors should use so that they trigger students' participation in class (Q9) are: debates (29.77%), group work (29.56%), active methods (26.42%), problem-solving (8.91%), and workshops (5.35%) (see Figure 1-16 below).

**Figure 1-11. Structure of answers to question Q2 (multiple-choice answer)**

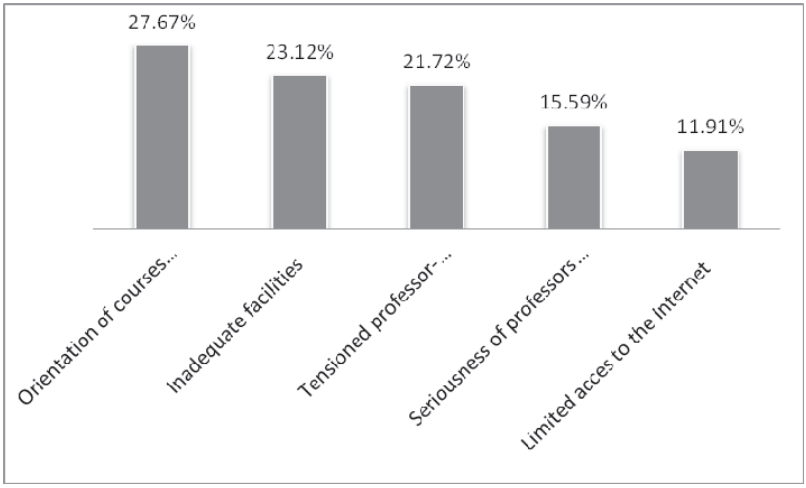



**Figure 1-12. Structure of answers to question Q4 (multiple-choice answer)**

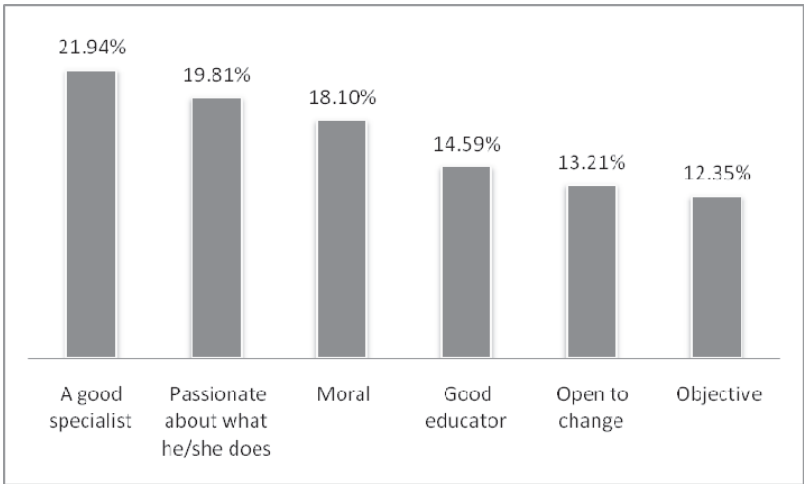


**Figure 1-13. Structure of answers to question Q5 (multiple-choice answer)**

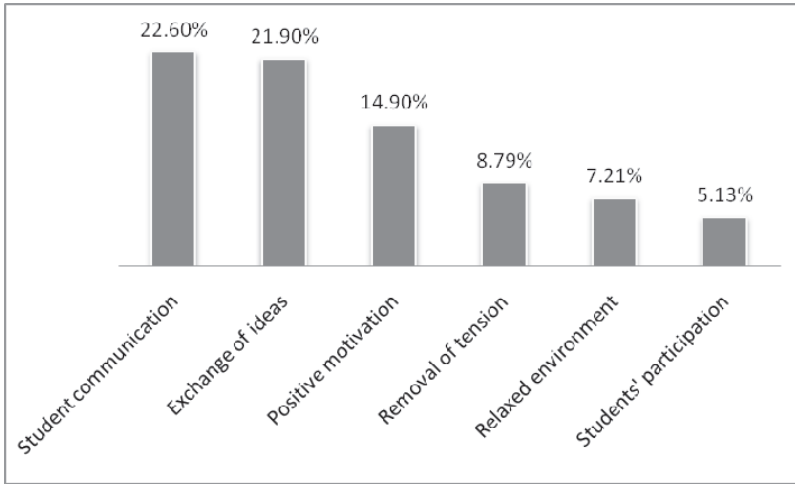
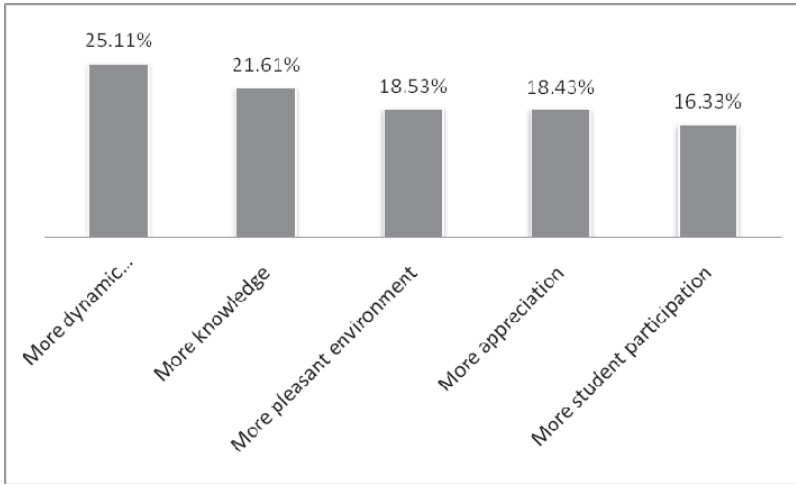



**Figure 1-14. Structure of answers to question Q6 (multiple-choice answer)**




In Q 10, 70.7% of students consider that evaluation does not reflect their level of training because of biased professors and exams (33.40%), professors' corruption (22.27%), other causes (19.83%), lack of well-defined evaluation criteria (13.34%), and superficial assessment (11.17%) (Figure 1-17).

**Figure 1-15. Structure of answers to question Q7 (multiple-choice answer)**

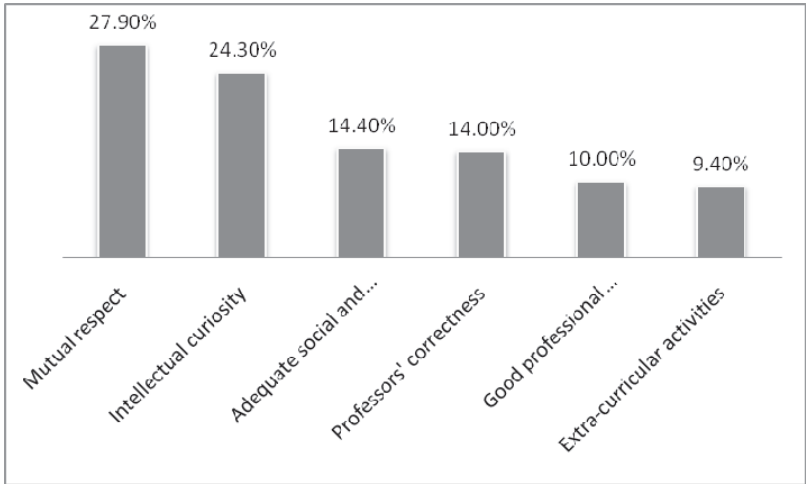
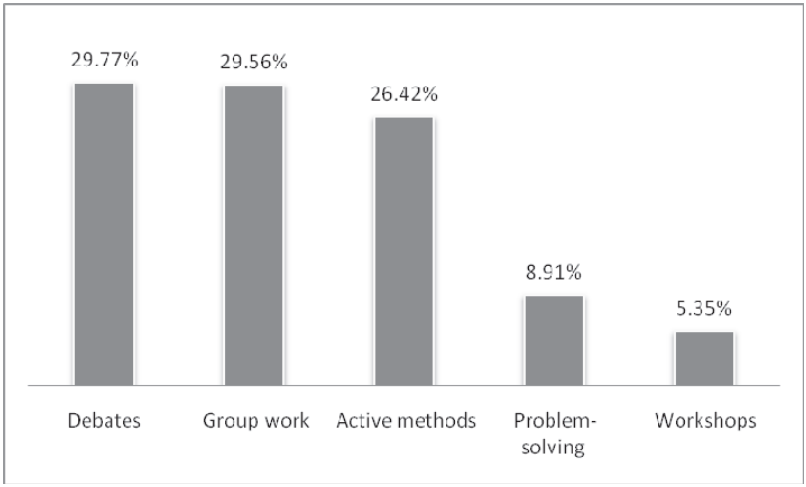
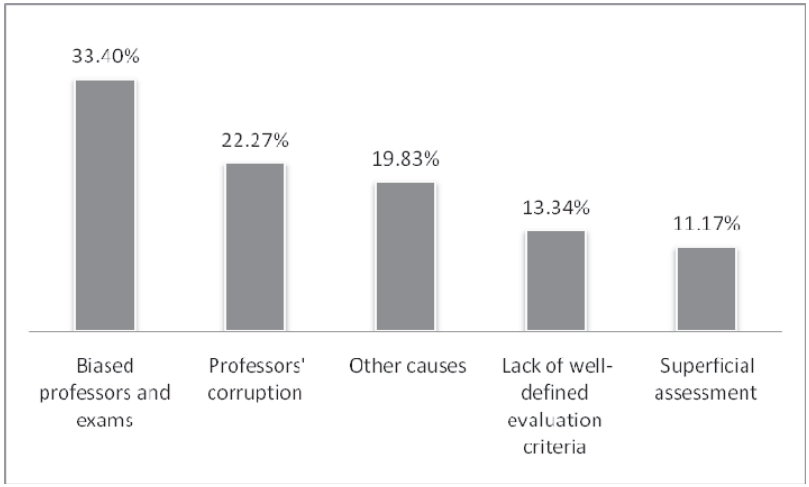



**Figure 1-16. Structure of answers to question Q9 (multiple-choice answer)**




The errors noticed by students in professors' evaluation (Q11) are: professors' subjective attitude (40.3%), additional questions (24.7%, Professors' corruption (16.7%), inappropriate topics (10.6%), and no mistakes (7.7%) (see Figure 1-18 below).

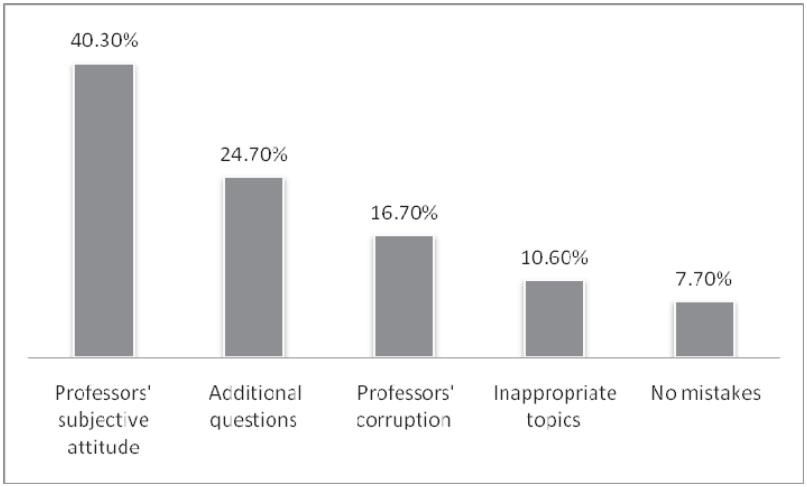
**Figure 1-17. Structure of answers to question Q10 (multiple-choice answer)**




## Validating/Invalidating the Hypotheses

- Hypothesis 1 was validated by a rate of 95.3% positive answers to Q5, Do you consider that a good professor-student relationship is necessary for an efficient teaching/learning process?
- Hypothesis 2 was validated by a high score for Q6, The didactic communication is a component of the teaching-learning process. In your opinion, on a scale from 1 to 5, to what extent is a good professor-student didactic communication necessary? (4.5 points of 5).
- Hypothesis 3 was validated by the answers to Q9, What methods do you consider your professors should use in order to actively involve you during courses/ seminaries/laboratories?

**Figure 1-18. Structure of answers to question Q11 (multiple-choice answer)**

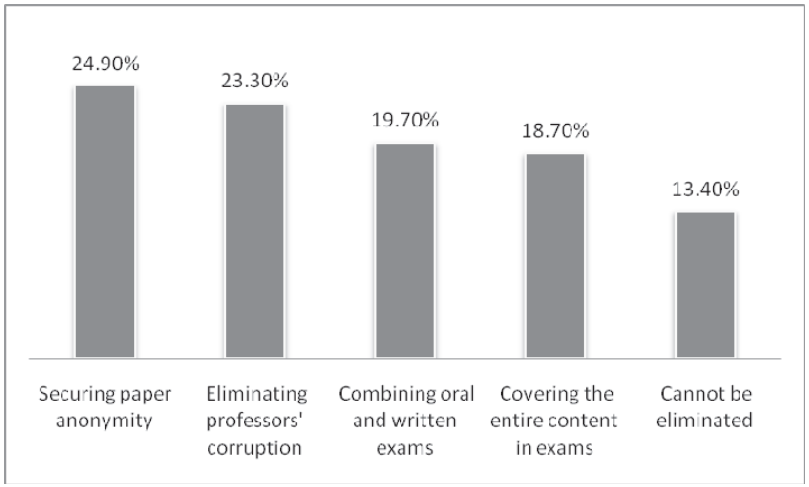



## Conclusions

The Romanian university education faces numerous problems caused by changes occurred in society, by the Bologna process and, generally, following accession to the EU. There is a general state of discontent among students in relation to the way education is performed at university level. This includes endowments (material ones) provided (13.2%), students' and professors' lack of interest, scarce practical activity, tension between professors and students (12.4%), the moral stance of the educator which can sometimes be less adequate to their mission, courses including outdated or irrelevant information for the demands of the labour market, etc. Students' opinions are not very different, though they major in different universities and disciplines. Students also feel the need to establish a good relationship with the professor, genuine communication (22.9%) that facilitates the exchange of ideas (22.2%) for a more pleasant climate in the class for a positive motivation of students (15.1%). As for the university syllabus, students need a more systematized and synthesised one (36.4%), based on applications (46.3%) centred on the student, an inter-disciplinary approach which would allow more group work, debates and which would allow them to be more creative and original, to raise their intellectual curiosity, etc. In conclusion, we can say that, although there is a certain degree of incongruence between how education should be

developed at academic level and how it is at present, between how a professor should be and how they are in reality, the fact that students provide solutions which imply an active involvement on their side shows their desire for change on the one hand and, on the other, shows that they are aware of the necessity for change, which can strengthen the role and the mission of Romanian academic education even at the European level.

**Figure 1-19. Structure of answers to question Q12 (multiple-choice answer)**




## Acknowledgements

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## References

Rotariu, T. & Iluţ, P. (1997). *Ancheta sociologică şi sondajul de opinie. Teorie şi practică* [Sociological Survey and Poll: Theory and Practice]. Iaşi: Polirom.

# SOMETHING IS ROTTEN WITH *HOMO SAPIENS*: A PSYCHOSOCIAL ANALYSIS OF THE POSTMODERN HUMAN IN THE WEST

ELISABETA ZELINKA

*Alea iacta est!*
(Suetonius, *De vita XII Caesarum*)

## Introduction

Multiple identity crises and aggressiveness, transcendental hollowness and metaphysical loneliness, and consequently alienation, depression, neuroses and psychoses, are only some of the paramount issues of the contemporary Western *homo sapiens*. Battling these paramount conditions, overwhelmed by their unprecedented identity crises related to the Self, God(s), family, sex, gender, religion(s), and occult belief systems, the postmodern Westerner has become a void humanoid/android, agonizing in their spiritual hollowness.

As a natural repercussion, they have become a faithful patient of expensive therapists in their most desperate attempt to overcome the twenty-first century diseases, the direct outcome of their *modus vivendi*. The preeminent ones are:

- The dehumanizing rat race for material goods and social prestige.
- (Self)-isolation and, consequently, the implosion of all social nuclei that were once seriously relied on (family and friendship circles, face-to-face socializing and social networks as well as the institution of marriage).

Only three centuries after sacrificing themself for the lofty idea(l)s of the French Revolution and the Enlightenment, the contemporary Western human has undergone an unprecedented process of dehumanization, turning into a void, ailing automaton; an uprooted, narcissistic, xenophobic, self-destructive lost in a search for new existential roots. What is most intriguing is the fact that although for the first time in history

the human being officially decreed God's death, they immediately detected their own inner/transcendental frustrations and promptly resorted to inventing new, artificial pseudo-gods and idols.

Why, where, and when have we failed as humane human beings? What are the chances of salvation, of re-becoming humane, if any?

Are all cast dice—"*Alea iacta est*!"—following Suetonius' (2007) famous quote from Caesar's speech in *De vita XII Caesarum* (*The Twelve Caesars*)?

## Methods and Techniques

In the present chapter, we shall apply the analytical, critical research method in investigating the Westerner's psychosocial profile, elements of oral history as well as the analytical-comparative investigative method regarding the Western and Eastern lifestyles, philosophies and *Weltanschauung*s, in order to arrive at my result—incompatibility and divergence of the two existential hemispheres.

## Results and Discussion

It is a fact that one of the basic features of the postmodern Westerner's psychosocial profile is their aggressive fear, even phobia regarding the "Other," the "Different," no matter whether it is a new or different person, object or *Weltanschauung*. I shall refer to the above-mentioned postmodern condition as the "Otherness Syndrome." Provided that one attempts to comprehend the Western psychocultural milieu, one will also comprehend the reasons why the Westerner almost automatically refutes anything "different" to their own set of beliefs.

Drilling down to the roots of these values, one will discover that almost all the epicentral elements of the Asian and East European values are quite different from the Western European societies set of beliefs.

Consequently, a first reason for the Westerner's aforementioned rejection, for their metaphysical loneliness and anxieties may be their spiritual hollowness. They have proven to be a pragmatically- and materialistically driven "*homo consumericus"* (Lipovetsky, in Garcin 2009, 93). Almost all transpersonal, religious, nonmaterial values play little or no importance to the Westerner, encapsulated in their consumerist, money-ruled, speed-maniac world. It is a fact that, Eastern European and Asian societies are more religion-, family- and community-centred. No matter whether Catholic, Hindu or Muslim, they respect their sacred books and god(s), attend religious services, respect their canonical religious/moral

etiquettes, and respect the concept of marriage and family to a larger extent than the individuals of the Western societies.

These transcendental beliefs are by far lesser (sometimes even mocked) within the Western *Weltanschauung*, as compared to the Eastern. For example, in Western societies, the institution of marriage is diminishing in reverse proportionality to the soaring rate of divorces, abortions and illegitimate children. Even state presidents may have four children with their life partners without being married, such as the French president François Hollande and his partner Ségolène Royal, or the former French president Nicolas Sarkozy, who divorced twice and remarried for the third time while still in office (2007 to 2012).

Moreover, a second feature of the Western individual's psychosocial X-ray imagology is that, for the first time in the history of mankind, they officially announced God's death. Moreover, the present Luciferic Act was swiftly validated and embraced by Philosophy, Literature and further epistemological branches. Nevertheless, this Rebellion presently turned against the Luciferic human being, who became an unaware signatory of the Faustian Pact. They traded faith and God for illusory self-sufficiency and a *Maya*-type of independence. More precisely, it is an illusion of independence as they promptly discovered on their own fall, and only became lonelier and more uprooted in their search for new pseudo-gods and/or idols.

Consequently and completely (self)-abandoned, God-less and desperate (similar to Dr. Faustus), as a third step in this chain reaction, the Westerner discovered that they became a *homo consumericus sans alma.* I add to Lipovetsky's concept *homo consumericus* (Lipovetsky, in Garcin 2009, 93) the term *sans alma* as the Western human gradually dissolved and lost their soul. Specialists do not yet agree where and when this process of dehumanization precisely commenced. It is nevertheless a fact that it may have started with the Industrial Revolution in the seventeenth century (Lorenz 2006, 73–87). It continued with the transition to modernity at the turn of the twentieth century, and then to the Postmodernism of the twentieth and twenty-first centuries.

Following the same train of thought, the Westerner took the fourth, imminent step of their alleged "evolution"; shipwrecked within their self-imposed *Maya*, convinced that they were totally independent and God-less, they instantly invented new gods in a desperate attempt to attend to their uprootedness, inner void, lack of religious fulfilment and peace of mind, which caused depression, melancholia, and further features of the twenty-first century neurotic personality (Horney 2010, 23, 29–33, 103–154; Minois 2005, 294–298).

Within this domino effect, a quite tragic stage succeeded—the Westerner failed to foresee the main, calamitous outcome of their new pseudo-gods/idols, which dehumanized them even further and accelerated the process of alienation from anything that was connected to nature , traditional or natural. When they signed the Faustian Pact and allowed artificial/depersonalizing entities such as overtime (Attali, in Garcin 2009, 16), speed-dating (Arcan, in Garcin 2009, 13) or coaching (Val, in Garcin 2009, 153) to regulate their religious, emotional and professional lives, they forgot that these would take their toll. The price would prove no less than their soul, humanity and dignity. Therefore, they turned into an alienated, anxiety-controlled and suicidal android, hollow and sterile in their race against time (Horney 2010, 8, 28).

Consequently, within this depersonalizing, dehumanizing race to outdo time, how could such a burnt-out human *not* suffer from all the typical neuroses and psychoses of the twenty-first century? Each of the above-mentioned details of their *modus vivendi* became a direct cause of their spiritual and somatic diseases (Horney 2010, 141; Bauman 2001, 18).

How could the postmodern Westerner stand a chance of overcoming their twenty-first century frustrations, depressions, anxieties, neuroses and psychoses, when face-to-face socializing, social culture and social communication have been substituted by depersonalizing iPods and GPS, addictive mobile phones and blogs (Rambaud, in Garcin 2009, 133)? When human fidelity has been replaced by Wireless Fidelity and Wifi, (Mabanckou, in Garcin 2009: 96) and natural beauty has been annulled by botox's dictatorship (Delerm, in Garcin 2009, 45) and the cult of anorexia and emaciated super models? When love has been substituted by voyeuristic exhibitionism and aggressive sexuality (Fizscher, in Garcin 2009, 53)? Behold some of the new, postmodern pseudo-gods/idols, whom the Westerner granted complete freedom to determine their personal and emotional lives!

Human guidance or interaction is not essential any more. They have the depersonalizing technology as a new pseudo-god on their side, who will guide them through iPods, blogs and GPS on their dehumanized, alienated and existential path.

As a conclusion, the Westerner GPSed human suffers from *Maya*, from the mirage of being totally independent and omnipotent, without realizing the truth, which is the complete opposite. They have become totally deserted, (self-)deprived of friends, family and God, and therefore uprooted, distance-controlled and distance-guided by technological devices of Orwellian surveillance (Beigbeder, in Garcin 2009, 26):

Dare I pose an interrogation—does it still shock any specialist that the typical Western individual is emotionally frozen and dehumanized to such an extent that they cannot even comprehend their own inner void and instability, let alone sympathize or empathize with those canonical values which were once valid in the West and, to a certain extent, are still valid in the East, such as the institution of marriage, the sanctity of family and friends, religion, love and courtship?

Confined and trapped within their anti-Nature, artificial, dehumanizing terrarium, the postmodern Western automaton has taken one further step in their "evolution" process. He has become, metaphorically speaking, numb and deaf-mute, and moreover seems to be suffering from chronic Asperger's Syndrome. They prove to be totally incapable of producing empathy, sympathy, human warmth or love towards their peers and towards their issues. They also prove to be incapable of delving into their own self, of growing aware of their innermost frustrations and traumas and of communicating them. Is this fact surprising, when they are incapable of communicating from the heart the mere basic everyday greeting formulas? Formulas such as "Hi, how are you?" have long lost their emotion-loaded meaning, namely, that the inquirer is genuinely interested in the wellbeing of the addressed/greeted person. "I am interested in knowing how you *really* are today, whether you are sick or not, whether you feel happy or sad, what has happened new since we last met?" Elements of oral history, interviews and immigrants' description of the Western greeting formulas speak volumes about the emotional shallowness of this communication style (Zelinka 2006).

Konrad Lorenz (2006, 47) masterfully describes the present emotional cryogenization as the contemporary *homo sapiens*' "emotional thermal death." Lorenz (ibid., 32) argues that the Western individual has become a *homo homini lupus*, an (un)consciously self-destructive wolf, centripetally trapped within their plastic and steel world. Their only pseudoreligion, which they corrosively pursue, is his existential creed to be "warrior," a "conquistador" of time and space, of his own destiny, an active risk-taker and entrepreneur (Brunner 2000, 16–19, 79–89, 109).

It is again Lorenz (2006, 49) who rightfully defines the term "neophilia" when describing the Western emotional impairment, the sterility and inability to emotionally bond to anything or anyone, thus incessantly erasing new stimuli in their existence.

## Conclusions and Recommendations

We may conclude that the Western (pseudo)-values, *Weltanschauung* and *modus vivendi* not only influence, but directly encourage existential loneliness, alienation and thus cause emotional sterility, neuroses and psychoses. Living in a consumerist, materialist, warped society, it is only natural that the present dehumanized android has grown addicted to anti-depressives and sleeping pills. They have lost their free time, necessary for attending to the soul's hygiene, having not time for their own eroded self and soul (Zelinka 2010, 165).

We therefore argue that the mirror and free time (necessary in order to glance into this mirror and see one's own image) have become the Westerner's deadliest existential enemies. This I refer to as "the Dorian Gray Effect/Syndrome." The merciless mirror incessantly reflects what the Western *homo sapiens* has become—a merciless, void, desperate android, sealed in their own Orwellian and Panoptic pseudo-content reality. This is what is terrifying his remnant self within persistent neuroses.

I have attempted to provide a double agenda for a further line of research—why does the Western humanoid suffer from "narcissism" (Baudrillard 1998, 194) and "nocturnal psychoses" (ibid., 25)? Why have canons and metaphysical values imploded precisely during the second half of the twentieth century, which witnessed an unprecedented process of psychological traumatisation of the Western societies?

Moreover, why have we signed the Faustian Pact and engaged in the aforementioned self-destructive process of dehumanization? Have we indeed become "wolf-children" who lack any "human warmth" (ibid., 25, 30 and 196)?

Will we persist in the idiosyncratic errors of The Student of Prague and Dorian Gray (ibid., 187), as presented by Baudrillard, or will some kind of phoenix birdlike rebirth give us the force to intervene and alter our chaotic alienation, but only after total "schizophrenic" self-diffusion (ibid., 77)?

This may be the most foreseeable trajectory of the Westerner's evolution. After all, each empire in history first reached a climax, eventually imploding under the erosion of its centripetal force of overabundance that triggered self-destruction. Is this the Westerner's fate as well? In my opinion, the response to the present interrogation would most probably be in the affirmative.

## References

Arcan, N. (2009). “Speed-dating.” In J. Garcin (Ed.), *Noile mitologii*, 13. Bucureşti: Art.

Attali, J. (2009). “Cele 35 de ore” [The 35 hours]. In J. Garcin (Ed.), *Noile mitologii*, 16. Bucureşti: Art.

Baudrillard, J. (1998). *The Consumer Society. Myths and Structures*. London: Sage.

Bauman, Z. (2001). *Comunitatea. Căutarea siguranţei într-o lume nesigură* [Community. Seeking Safety in an Insecure World]. Bucureşti, Filipeştii de Târg: ANTET XX PRESS.

Beigbeder, F. (2009). GPS [GPS]. In J. Garcin (Ed.), *Noile mitologii*, 26. Bucureşti : Art.

Brunner, R. (2000). *Psihanaliză şi societate postmodernă* [Psychoanalysis and the postmodern society]. Timişoara: Amarcord.

Delerm, P. (2009). Telefonul mobil [The mobile phone]. In J. Garcin (Ed.), *Noile mitologii*, 45. Bucureşti: Art.

Fizscher, C. (2009). Noii îndrăgostiţi [The new lovers]. In J. Garcin (Ed.), *Noile mitologii*, 53. Bucureşti : Art.

Horney, K. (2010). *Personalitatea nevrotică a epocii noastre* [The Neurotic Personality of Our Time]. Bucureşti: Univers Enciclopedic Gold.

Lipovetsky, G. (2009). Goana după autenticitate [The Chase for Authenticity]. In J. Garcin (Ed.), *Noile mitologii*, 93. Bucureşti : Art.

Lorenz, L. (2006). *Cele opt păcate capitale ale omenirii civilizate* [Civilized Man’s Eight Deadly Sins]. Bucureşti: Humanitas.

Mabanckou, A. (2009). Wifi [Wifi]. In J. Garcin (Ed.), *Noile mitologii.* Bucureşti : Art.96.

Minois, G. (2005). *Az életfàjdalom története* [*Histoire du mal de vivre. De la mélancolie à la dépression*] [The History of Existential Pain. From Melancholy to Depression]. Budapest: Corvina.

Rambaud, P. (2009). Blog [Blog]. In J. Garcin (Ed.), *Noile mitologii*, 133. Bucureşti : Art.

Suetonius, G. T. (2007). *De vita XII Caesarum* [The Twelve Caesars]. London: Penguin Classics.

Val, P. (2009). Coaching [Coaching]. In J. Garcin (Ed.), *Noile mitologii*, 153. Bucureşti : Art.

Zelinka, E. (2006). *Irregular Migration and Its Wounds*. http://www.migrationeducation.org/24.1.html?&rid=66&cHash=be1176c976.

Zelinka, E. (2010). *A Psycho-Social Analysis of the Occident. Cunningham, 73 Years after Woolf: a Meeting in Androgyny*. Timişoara: Excelsior ART.

# CHAPTER TWO

# PHYSICAL EDUCATION AND SPORT

# EFFECTS OF MOTOR ACTIVITIES ON MENTAL FUNCTION DEVELOPMENT, CONSCIOUSNESS AND SELF-IMAGE

VASILE-LIVIU ANDREI

## Introduction

Physical education and sport have a role in the healthy development of a nation, in ensuring its development and progress. Physical exercise and well-planned and carefully organized motor activities determine positive changes in the psychological structure of human personality, cognitive and affective processes being also influenced in order to significantly strengthen the capacity to analyse, take decisions and act quickly and effectively in various life situations. Motor activities, by practicing gymnastics and aerobic fitness, contribute to self-image development, to its rigorous structuring through training and team cohesion, valuing qualities and actions, validating the assessment and self-assessment competences and growing confidence and self-esteem. By practicing gymnastics and aerobic fitness, we witness the definition in shape of the body, improvement of muscle power, obtaining refinement and harmony in body movement while gaining flexibility and ease in performing various kinds of movements, along with activating the visual, auditory, tactile and kinaesthetic analysers. In addition to modelling the appearance of the body, many of those who do these types of exercises want to achieve a mentally sporting tone to support their exercise capacity and maintain a state of physical and mental wellness.

Since the earliest times, great thinkers, philosophers, ascetics and doctors have given movement the due importance in maintaining the welfare of the human body in reviving and ensuring an optimum life and occupational performance. A few thousand years ago, Taoist alchemy was practised in the form of simple movements of dance therapy. Over time, it was developed including new techniques and gradually becoming a complete system of helming human energies with solemn applications, both therapeutic and meditative. For the purposes of the above statements,

with martial origin, the Chinese philosopher Confucius' sayings are also shown as particularly relevant: "flowing water never stagnates, and the active door hinges do not rust again. This is due to movement. The same principle applies to the essence and energy. If the body does not move, the essence is not leaking. When the essence is not flowing, energy stagnates." Another Chinese thinker, Hua Tuo, a renowned surgeon who lived to be one hundred years old, said: "The body needs exercise, but it should not be overly practised. When the blood pulses through veins unobstructed, the disease can take root like the hinge that will not rust due to frequent use." Taoist practices stated: "Of utmost importance is to seek tranquillity in motion itself, acting slowly and continuously to reach a state of harmony." Internal energy is driven to circulate through meridians, by means of external, slow, continuous movements, harmonised with deep diaphragmatic breathing in terms of mental tranquillity, the most popular practice in this respect being the Taijiquan practice fundamental in Taoist alchemy (eva.ro).

In ancient times, exercise and movement were the basis for civic vigour. For example, in Sparta, an agricultural slave state guided by Licurg's severe rules, exercise was a means of training citizens and the military. Athens became the most civilised state of antiquity after Solon's legislation. In the age of Pericles, Athenians paid carefully attention to preparing youth. Their ideal of life was Kalos Kai Agate (Kalos Kagatos), which means bodily beauty united with spiritual virtue. For the Greeks, gymnastics is a generic term that includes all physical exercise: running, jumping, throwing, boxing, wrestling, horse racing, swimming and riding. The exercises were practised in the gymnasium, palaestra and the stadium. *Pedotribii* dealt with the technical preparation of athletes, and "gymnasts" the conditions of hygiene, diet, bath and recreation sports. The name derives from the Greek word *Gymnase*, which means "empty," "no clothes." The term was coined in the year 721 BC at XV Olympiad when the Lacedemonians and the Cretans were admitted naked into Olympic competitions (scritube.com).

## Methods and Techniques

Although there have been thousands of years since the historical era to the present, the concern for maintaining mental function and enhancing self-esteem has not stagnated, but evolved, as obtaining and maintaining body tone is the essential premise to achieve a mental balance and an emotional balance which is very beneficial. The psycho-behavioural human system acts as a hypercomplex where each subsystem is in relative independence

and absolute interconnection. The two parties, mind and motivation, influence and determine each other, and this feature is evident in aerobics and fitness activities as standards of bodily expression.

In general, positive motivation, especially in daily physical education classes, is influenced by the emotional substratum and is also encouraged by the socially harmonious environment through the help of colleagues, teachers, parents and friends. If the load engine is harder to energy ratio, compared with the motivation to achieve higher performance, the last item should be increased. By practicing gymnastics and aerobic fitness, body appearance is improved, the actions performed resulting in the positive adjustment of posture and muscle tone and the superior capacity of body expression. At the same time the visual, auditory, tactile and kinaesthetic analyzers are activated and stimulated, and provides a certain flexibility and ease of different types of moves.

To maintain body tone, regardless of age, in the absence of an aerobics and fitness specialist, a very important role is that of physical exercises. These can be done by each individual even in their own apartment, with minimal planning, only that the exercises should be chosen with special attention so that they cause no discomfort. Most importantly, these exercises, once started, should be continued for a period of time in order to make a comparative assessment between the onset and end of their practice. Certainly, those states will appear at the beginning of the foot muscle, which can be relieved with a hot shower, and by eating a spoonful of honey at the end of each training session. It would be appropriate for each person to undertake exercises each day. It is preferable that besides P.E. classes, children do additional exercises at least three times a week lasting one hour each. Exercise, combined with running in the park, cycling and rollerblading, defends the body from factors of disease.

According to statistics, almost 70% of adults do not exercise enough and 20% never do, leading to the increase in cardiac patients, people with muscle dystrophies, people with arterial hypertension and hence the higher number of deaths. A group of scientists in the United States have developed a program which states that every individual should take exercise every week for at least two and a half hours. This exercise does not have a specific pattern which each person is forced to follow. Dancing, running, jumping rope, swimming, team games, volleyball, basketball, table tennis and field sports can result in a good mood for each of us. It is very that, once started, this exercise program continued daily produces pleasure and is not seen as an obligation, a particular burden. Those who do exercise at least 10 minutes per day will be healthier and will have, in

addition, the ability to work more effectively and a permanent affection disposition.

The quality of motor activities in the educational process in schools is influenced by the educational character of the training. Aerobics and fitness are practical activities that can encourage motor and gesture behaviour, educational influences, knowledge, skills and abilities for students. Starting from this idea, the criteria by which exercise is selected in organising the educational process are effectiveness, utility and controllable influences.

Activity involving aerobic and fitness is not just motor. By exercising embodied progressive changes even in developing the mental function, students improve their abilities to analyse situations, solve problems, make decisions and act. By this, cognitive (attention, reasoning, memory, creativity) and emotional development (interests, motivations, attitudes, values) are equally affected.

American psychologists Martin Seligman (1991) and Daniel Kahneman (1999) (in Zlate 2001) identify positive psychology from the traditional psychology perspectives. "Psychology of Hope," "hedonistic psychology" and "psychology of optimal experience" are just some of the expressions used to describe an area of interest in the conceptualization of finding measuring methods and inducing wellness. The same author emphasises that the supporters of this theory argue that the individual is only a receiver of stimuli, a simple passive element without a choice for personal preferences and self-worth.

In health psychology, a very important lesson is the need to focus on all ontogenetic stages, especially the need to exercise. Two basic dimensions of concern are to prevent degradation of the human body through exercise, diet, weight control, and the avoidance of dangerous substances or abuse of any kind. All of these will, over time, create positive effects on physical appearance and self-image, part of thinking and personal guidance.

Iluţ (1997) considers self-esteem, self-image and their structure can help to explain the cognitive part of the approach through motor movement, but also the social aspect, both representing individual identity. Authors like Radu, Iluţ & Matei (1994) call into question the identification of self as a process of expressing an individual opinion. Forming motor activities seen from the perspective of the concept of body harmony become very important in terms of source and the core role of consciousness and self-image.

Hubert F. Lauzon (1990) found three components of body image assessed in relation to the environment, people and objects. They are:

- Assimilated body image or portrait of the human body that establishes relations with all parties and place the body in relation to spatial dimensions.
- Knowledge about the body, which is very important in childhood.
- Adjusting posture, i.e. the ability to maintain a position or make a move, voluntarily, through the exertion of muscles.

Often, the body maintains a certain stability diagram, maintaining, from childhood to old age, "my body" as a condition of self-recognition.

Body schema is perfected by practicing gymnastics and aerobic fitness. Although changes in the body are the result of a scheme in which nervous and mental maturity are of very important significance, psychologist Horghidan (2000) states that it cannot be reduced to the spontaneous processes of ontogenesis, its development depending on the quality of intervention forming from a young age. Therefore, with increased self-esteem, the more children will differentiate and be well structured, and the actions performed more specific and complex.

Aerobics helps to improve the quality of the four modes of expression of plant availability. G. Popescu identified four such availabilities:

- The nature of multi-sensory learning activities that lead to changes in behaviour by integrating visual stimuli, auditory, tactile, kinaesthetic.
- Variety of programs, such as travel, meaning moving, action plans and implementation of joint movements in temporal sequence for a well-established pace, contributing to better adaptation and integration.
- Carrying out exercises on large muscle groups predominantly acts on the entire motor behaviour.
- Although, compared with sports involving games, aerobics is a typical social and motor communication space, it creates a positive emotional climate in which children relate at least in an emotional level while also increasing self-esteem and appreciation.

## Results and Discussion

Physical appearance remains, perhaps, the most important goal that enthusiasts and practitioners of aerobic fitness constantly present. In combatting stress and negative emotional experiences, the mental or

biochemical disorders (tachycardia, high blood pressure) and behavioural disorders that "upload" body exercise have a positive effect.

Psychological Coordinates such as sport are key milestones in the enhancement of mental function, the development of consciousness and self-image. We highlight, here, some important points related to the neuropsychological bases of sports activity.

- Understanding the psychological processes requires psycho physiological or monistic theories of following or dualistic conception.
- Modern orientation in cognitive psychology argues that cognitive processes involve mechanisms for storage, transmission and processing mental information.
- Athletic psychophysiology particularly emphasises emotions, sensorial and motor memory of motivation and personality characteristics.
- Emotions are complex emotional reactions and cognitive mechanisms of somatic and psychiatric manifestations.
- The adaptation role of emotions is to mobilise moderate the physical and psychological body, including sport, which stimulates thinking and learning.
- The memory processes of driving actions are products of metabolic and structural changes in neurons and synapses between neurons; and memorising involves several types of memory, depending on information stored during attachment and detention.
- Positive motivation is influenced by emotional substrate during competition.
- Athlete's personality is characterised by optimism, sociability, stability, firmness, extroversion.

Performance can be improved by a certain type of personality, but cannot fully determine it, because psychological states and many more factors develop over time.

The positive effects of exercise, aerobic and sports efforts on cognitive processes mentioned are recording mechanisms facilitating mental processes (perception, attention, etc.). The mental training of athletes, as reported by Professor Mihai Epuran, includes the following elements:

- Mental preparation, including motivation and attention.
- Preventing failures, preventing overload and the need of psychotherapy (for depression or anxiety), relaxation techniques etc.
- Mental training is effective.

The performance of athletes results from adding the following four factors:

- Psychological skills, psychomotor (static and dynamic balance, speed of response, etc.).
- Attitude of availability, competitive spirit, cooperation, confidence and discipline.
- Competitive spirit.
- Psycho-social climate and social environment.

Each of the above factors is established and promoted by specific methods.

Consciousness is an objective test of positive and negative traits to correct the negative and promote the positive, for the optimal integration of roles and relationships alleged by the complexity of modern society. First, self-awareness solves a primary requirement to the biological human knowledge of reality, environmental, existential world it belongs to, in its vital adaptation to the environment and behaviour.

As self-consciousness remains a fundamental dimension of human life, consciousness itself remains the lever to ensure balance, the acquisition of virtue and human happiness. Self-image includes not only "what I am," but "what I want to become" and especially "what I should be."

Therefore, the ability of self-discovery is not spontaneous, but requires a long period of accumulation of experiences and learning elements to promote the qualitative leap in knowledge transfer in general, and from there to express human knowledge from the alter ego and self. Self-consciousness, developed at an optimal building-stone level could be a small school of creative personality. It can be said that consciousness is composed of a "self-talk" which begins to realize, in some ways:

- The somatic world composed of body schema and body attitude.
- The functioning internal world expressed by controlling and coordinating heart muscle relaxation and breathing.

## Conclusions and Recommendations

Education training should be conducted so as to become self-education and self-training. However, in a statement to a free and creative personality, both voluntary and active, endowed with self-awareness, intelligence, initiative and desiring maximum performance, young people

regulate their own achievements through their youthful desires and possibilities.

Aerobics and fitness are fun and attractive and work for full the physical and mental treasure of resources, thus contributing to human modelling. Through teaching and learning, students are able to assert their own qualities, to evaluate the merits in all aspects.

All this knowledge involves physical maturity and the integration in the context of social life (which is expected).

## References

*Documente sport* [Sport Documents]. http://www.scritube.com/timp-liber/sport/index.php.

*Eva.ro. Internet la feminin* [Eva.ro. Feminine Internet]. www.eva.ro.

Horghidan, V. (2000). *Problema psihomotricităţii* [Psychomotor Issues]. Bucureşti: Globus.

Iluţ, P. (1997). *Abordarea calitativă a socio-umanului* [Qualitative Approach of Socio-Human]. Bucureşti: Polirom.

Lauzon, Fr. (1990). *Education psychomotrice* [Psychomotor Education]. Québec: Presses de l'Université du Québec.

Radu, I., Iluţ, P. & Matei, L. (1994). *Psihologie socială* [Social Psychology]. Cluj-Napoca: EXE.

Zlate, M. (1999). *Psihologia mecanismelor cognitive* Psychology of Cognitive Mechanisms]. Bucureşti: Polirom.

# XANTINIC COMPOUNDS INCENTIVISING THE ACTIVE PRINCIPLES OF ATHLETE PERFORMANCE: EFFECTS, OPPORTUNITIES AND RISKS

DELIA NICA-BADEA
AND EMILIA-FLORINA GROSU

## Introduction

Tea (*Camellia sinensis*), coffee (*Coffea arabica*), cocoa *(Cocoa teobroma*) and cola (*Cola nitida*) are products containing the plant as active xantinic alkaloids caffeine (1, 3, 7 trimethylxantine), teofiline (1, 3 dimethylxantine) and theobromine (3, 7 dimethylxantine). The scientific community is keeping abreast of the importance of caffeine among ordinary people, and its pharmacological activity. The physiological effects of caffeine have the overall central nervous system (CNS), and hormonal and metabolic functions, as well as the muscular, cardiovascular, pulmonary and renal (O'Connor et al. 2004; Tarnopolsky 2008). Caffeine, though it has no nutritional value, attracted the attention of many athletes, being used as an ergogenic in competition. Many positive aspects on the intake of caffeine in the form of nutritional supplements are reported and substantiated in relieving state of mind and mental alertness, fatigue, and stimulating cognitive and ergogenic processes, evidenced in the competitive advantages in sports performance (Sokmen et al. 2008). Caffeine was included in the list of banned stimulants in class (A) by the World Anti Doping Agency, being withdrawn from the list of prohibited substances and included in a monitoring programme. Caffeine is considered to be a controlled drug, restricted by the Olympic Committee, and athletes that have urine levels above 12 μg/ml are disqualified after competition, being accused of deliberate use of caffeine to improve performance.

## Mechanism of Action

Research on the mechanism of caffeine on the human body, in general, and of human performance in sport are numerous and complex. Caffeine (1, 3, 7-trimethylxanthine) is permitted in the body by the liver through enzymatic action, resulting in the three metabolites: paraxanthine, theophylline and theobromine, with high concentrations in the brain (see Figure 2-1 below). High levels may appear in the bloodstream within 15-45 minutes after consumption; maximum concentration levels are obvious after one hour after ingestion, expelled from the body in urine (Magkos & Kavouras 2005). Being absorbed by the tissues and urine, the concentration decreases by 50 to 75% 3-6 hours after consumption. The adult half-life is 4 hours. By the presence of the final products of metabolism, 1-methyl-methyluric and 1 xantine in urine can appreciate the amount of caffeine administered. The intimate mechanism of the various effects of caffeine is not very well outlined. Several mechanisms are known in the argumentation on the effects of caffeine supplements in sport to improve performance. The principal mode of action of caffeine is the antagonist to the type receptors in the brain with adenosine effect on the CNS, changing the balance of mental alertness and tiredness fatigue (Jenna 2009). Research has also demonstrated its role on neuromuscular skeletal muscles in contraction. In general, the results of research studies show caffeine supplements' involvement in increasing physical performance, indicating a combined effect in both central and peripheral systems (Sokmen et al. 2008). The mechanism of improvement in physical performance is linked to the original biological mechanism: the increase in concentration of intracellular calcium (increased muscle contractility); increase in the rate of oxidation of free fatty acids (glycogen sparing); serving as an adenosine antagonist receptor in the central nervous system (see Figure 2-2 below). In fact, stimulating performance intake was found to be a complex, multifactorial biological mechanism, expanding and including perception and cognitive skills (Doherty et al. 2004; Sokmen et al. 2008).

## Dosage Effect

Caffeine can affect a variety of biological processes, but the most important are those which raise the level of alert, vigilant and physical performance. It blocks receptors in the brain that control excitement and motivation. Acute doses of a single standard of 200 mg improve cognitive function, and to increase physical performance levels are located at 2 to 6 $mg/kgBW^{-1}$ (Goldstein et al. 2010). The acute lethal dose for an adult is

estimated at 10 g, although there are reports of lower lethal doses of caffeine (i.e. 6.5 g) (Jellin & Gregory 2011). A moderate daily intake of 400 mg was considered safe for the health of adults and non-pregnant/non-lactating women**.** Moderate intakes of 200 mg in adults improve cognitive performance of the sleep-deprived and fatigued. Larger doses of 600 mg/day can produce observable changes including tachycardia, tremors, insomnia, nervousness, GI upset, chest pains and arrhythmia (Jellin & Gregory 2011). A series of studies stresses the negative effects on cognitive performance when mixing with alcohol (Curry & Stasio 2009). The Food and Drug Administration (FDA) issued a warning to the effect that caffeine added to malt alcoholic beverages is a dangerous additive. Some states have banned the sale of energising liquors or combinations thereof containing taurine and other multi-ingredient dietary supplements for weight loss (US FDA). The effects of sudden discontinuance of consumption are accompanied, in 50% of consumers, by a series of physiological effects. It is recommended to gradually reduce intake over 3-4 days, and abstinence is recommended for athletes about 7 days before competition. Monitoring the administration of caffeine is required by metabolic peculiarities. For some categories of persons, day-to-day administration of caffeine is necessary to be in shape, while in others the same doses may cause side effects (digestive disorders of extremities, trembling, nausea, vertigo, headaches, drowsiness, or even heart attacks) which require the cessation of administration even if there is a benefit.

## Advisability of Fostering Sports Performance

The position of the International Society of Sports Nutrition on Caffeine consumption supplementation in improving sports performance is structured in seven points (Goldstein et al. 2010). Caffeine has effects on sports performance athletes trained for when consumed in moderate doses (3-6 mg/kg $BW^{-1}$; there was no recorded performance for larger doses of 9 mg/kg $BW^{-1}$), considered desirable and beneficial for physical exercises involving intensive effort of the body, including team sports (football, rugby). The literature does not support diuresis induced by caffeine in the drill, or any other harmful fluids balance, change which would adversely affect performance. The opportunity to use caffeine centred on production performance in sport is played in literature on the basis of numerous studies (see Table 2-1 below). Recent research emphasizes the relationship between dose-response and time, age, gender, body weight, type of activity (Doherty et al. 2004; Sokmen et al. 2008).

**Figure 2-1. Metabolism of caffeine in the liver via cytochrome P450 enzyme system**

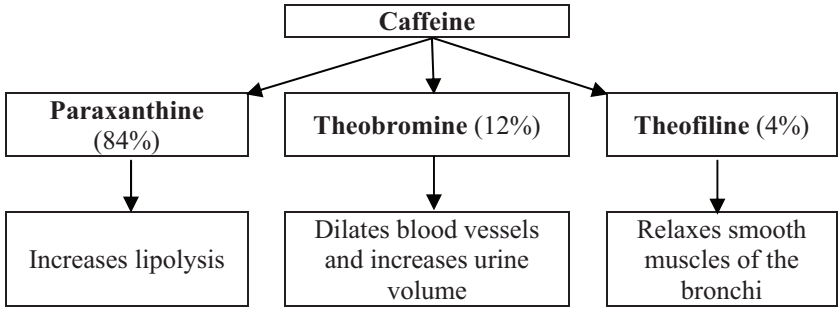
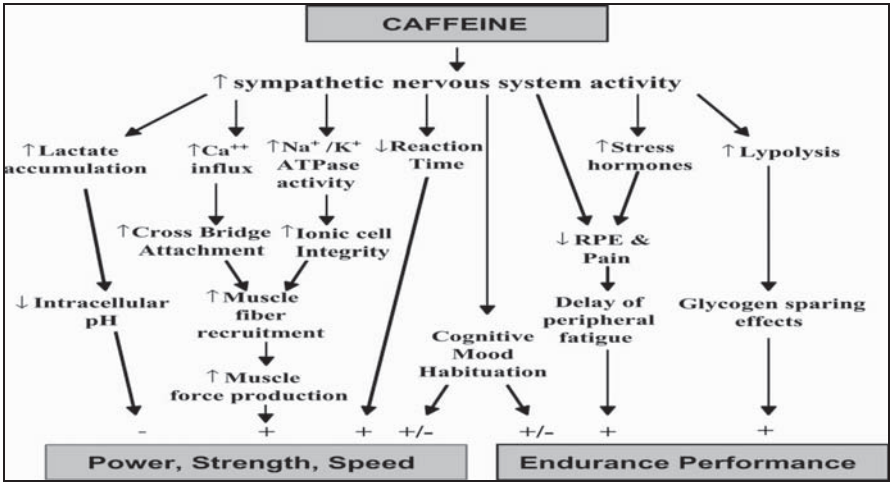
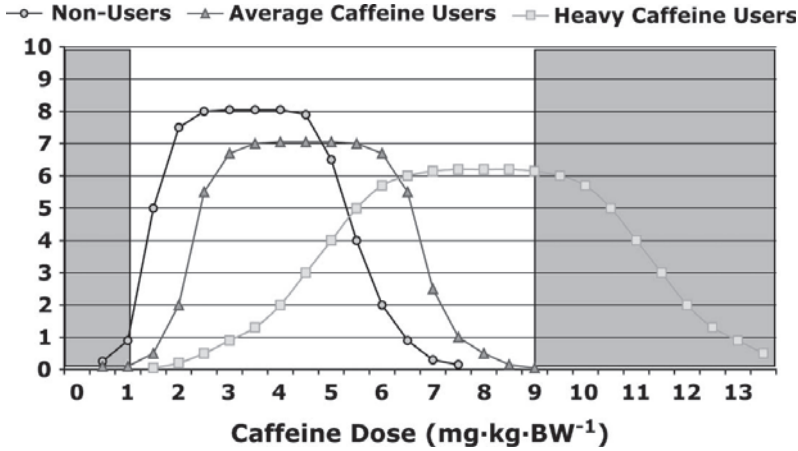



**Figure 2-2. Biochemical mechanism of caffeine on endurance and power events (Sokmen et al. 2008)**




Much of the literature focuses on the effect of ergogenic dose-response to determine efficacy in endurance and strength sports (Sokmen et al. 2008; Pedersen et al. 2008).

**Figure 2-3. The response of the body to the consumption of caffeine compared to the mass of the weight (Sökmen et al. 2008)**




In support of this, Figure 2-3 serves as a guide for athletes on the degree of response (ergogenic effect on a scale of 1-10) to varying degrees of determination of the amount of caffeine in body weight. For all three levels, peak effect can be achieved in a range of doses, rather than in a single dose. Shaded areas represent the doses for which are anticipated positive effects and negligible ergogenic, which may be the result of the effect of negative cognitive and mood at higher doses. Numerous studies dealing with the opportunities offered by the various doses and combinations of caffeine, carbohydrates and electrolytes balance the hydrological balance of the organism of athletes (Fiala, Casa & Roti 2004; Millard-Stafford 2007; Del Coso, Estevez & Mora-Rodriguez 2009). In conclusion, the use of caffeine in rehydration is related to the dose of caffeine managed within the range shown (3-6 mg/kg $BW^{-1}$) and which does not affect the rates of perspiration, loss of urine or indices of the state of hydration during physical effort (Jenna 2009). The results of experimental studies on the opportunities of recent years in caffeine improving sports performance are centred on activities such as endurance (Wiles et al. 2006; McNaughton et al. 2008), stop and go, power sport events (Strecker et al; 2007, Beck et al. 2008), and sprinting (Schneiker et al. 2006).

**Table 2-1. Effects of caffeine on enhanced performance (INDI/SNIG 2009)**

| Caffeine Dosage | Sport/ Exercise Protocol | Enhanced Perform. | Remarks |
|---|---|---|---|
| 5 mg/kg of caffeine or placebo 1 hour prior to exercise | 30 min of cycle ergometry at 75–77% of peak oxygen consumption | Yes | Caffeine was associated with a reduction in muscle pain in both habitual and non-users of caffeine |
| 3 mg/kg caffeine or placebo 1 hour prior to exercise | Unilateral leg extensions to failure at 60% of pre-determined 1-RM | Yes | Though caffeine ingestion enhanced performance, those subjects consuming a placebo who believed they were consuming caffeine also increased the number of reps |
| 500 ml of either flavoured placebo or Red Bull Energy Drink (160 mg caffeine) 40 min before exercise | Simulated cycling time trial | Yes | Consuming an energy drink can improve cycling time trial performance, but does not decrease RPE. As Red Bull contains carbohydrate and other vitamins and minerals, this increased performance may not be due to caffeine alone |
| 2 mg/kg caffeine or 4 mg/kg or placebo | 3 trials 4 rounds per trial of 50 targets per round | No | Caffeine ingestion of ≤4 mg/kg does not enhance clay target shooting in elite shooters. |
| 6 mg/kg caffeine or placebo 60 min before exercise | Repeated sprint running performance (5 sets of 6 x 20m) | Yes | Caffeine enhanced repeated sprint performance and was not detrimental to reaction times. |
| 6 mg/kg caffeine or placebo 60 min before exercise | 3 x 1 hour cycling time trial performances | Yes | Performance was improved, potentially through increased free fatty acid metabolism |
| 201 mg of caffeine or placebo 45 | 1-RM bench press and running time to ex- | No | 201mg of caffeine did not improve 1-RM bench press or running time min |

## Conclusion

Caffeine is considered a controlled or restricted drug by the Olympic Committee and athletes that have urine levels above 12 μg/ml are disqualified after competition, being accused of deliberate use of caffeine to improve performance. Despite restrictions on caffeine, there are studies showing that moderate doses of caffeine (6 mg/kg $BW^{-1}$ or less)

administered before exercise can improve certain types of exercises, such as resistance and laboratory testing, and can increase performance in certain types of exercises during intense, short effort. The effects of caffeine are determined by body weight, type of exercise duration and intensity, and the metabolic features of athletes. Moderate doses of caffeine (100-400 mg of caffeine, or caffeine & carbohydrates) are consumed in various forms and considered in the normal therapeutic range.

## References

Beck, T. W., Housh, T. J., Malek, M. H., Mielke, M. & Hendrix, R. (2008). "The Acute Effects of a Caffeine-Containing Supplement on Bench Press Strength and Time to Running Exhaustion." *Journal of Strength Conditioning Research* 22 (5): 1654–8.

*Caffein: Technical Document Developed by INDI/SNIG*. (2009). http://www.irishsportscouncil.ie/Institute_Of_Sport.

*Caffeinated Alcoholic Beverages*. http://www.cdc.gov/alcohol/fact-sheets/cab.htm

Curry, K. & Stasio, M. J. (2009). "The Effects of Energy Drinks Alone and with Alcohol on Neuropsychological Functioning." *Human Psychopharmacology: Clinical and Experimental* 24 (6): 473–81.

Del Coso, J., Estevez, E. & Mora-Rodriguez, R. (2009). "Caffeine during Exercise in the Heat: Thermoregulation and Fluid-Electrolyte Balance." *Medicine & Science in Sports & Exercise* 41: 164–73.

Doherty, M., Smith, P., Hughes, M. & Davison, R. (2004). "Caffeine Lowers Perceptual Response and Increases Power Output During Highintensity Cycling." *Journal of Sports Sciences* 22: 637–643.

Fiala, K. A., Casa, D. J. & Roti, M. W. (2004). "Rehydration with a Caffeinated Beverage During the Nonexercise Periods of 3 Consecutive Days of 2-A-Day Practices." *International Journal of Sport Nutrition and Exercise Metabolism* 14: 419–29.

Goldstein, Erica R., Ziegenfuss, T., Kalman, D., Kreider, R., Campbell, B., Wilborn, C., Taylor, L., Willoughby, D., Stout, J., Graves, B. Sue, Wildman, R., Ivy, J. L., Spano, Marie, Smith, Abbie E & Antonio, J. (2010). "International Society of Sports Nutrition Position Stand: Caffeine and Performance." *Journal of the International Society of Sports Nutrition* 7(5): 15.

Jellin, J. & Gregory, P. J. (Eds.). (2011). *Caffeine Natural Medicines Comprehensive*. http://www.natural database.com.

Jenna, D. (2009). *Effects of Caffeine Containing Beverages and Supplements on Athletic Performance in Adults*. http://www.eatrightjax.org/files/Effects of Caffeine.pdf.

Magkos, F. & Kavouras, S. A. (2005). "Caffeine Use in Sports, Pharmacokinetics in Man and Cellular Mechanisms of Action." *Critical Reviews in Food Science and Nutrition* 45: 535–562.

McNaughton, L. R., Lovell, R. J., Siegler, J. C., Midgley, A.W., Sandstrom, M. & Bentley, D. J. (2008). "The Effects of Caffeine Ingestion on Time Trial Cycling Performance." *Journal of Sports Medicine and Physical Fitness* 3: 320–5.

Millard-Stafford, M. L., Cureton, K. J., Wingo, J. E., Trilk, J., Warren, G. L. & Buyckx, M. (2007). "Hydration during exercise in warm, humid conditions: Effect of a caffeinated sports drink." *International Journal of Sport Nutrition and Exercise Metabolism* 17: 163–177.

O'Connor, P. J., Motl, R. W., Broglio, S. P. & Ely, M. R. (2004). "Dose-dependent effect of caffeine on reducing leg muscle pain during cycling exercise is unrelated to systolic blood pressure." *Pain* 109: 291–298.

Pedersen, D. J., Lessard, S. J., Coffey, V.G., Churchley, E. G., Wootton, A. M., Ng, T., Watt, M. J. & Hawley, J. A. (2008). "High Rate of Muscle Glycogen Resynthesis after Exhaustive Exercise when Carbohydrate Is Coingested with Caffeine." *Journal of Applied Physiology* 105: 7–13.

Schneiker, K. T., Bishop, D., Dawson, B. & Hackett, L. P. (2006). "Effects of Caffeine on Prolonged Intermittent-Sprint Ability in Team-Sport Athletes." *Medicine & Science in Sports & Exercise* 38: 578–585.

Sokmen, B., Armstrong, L. E., Kraemer, W. J., Casa, D. J., Dias, J. C., Judelson, D. A. & Maresh, C. M. (2008). "Caffeine Use in Sports: Considerations for the Athlete." *Journal of Strength Conditioning Research* 22: 978–986

Strecker, E., Foster, E. B., Taylor, K., Bell, L. & Pascoe, D. D. (2007). "The Effect of Caffeine and Ingestion on Tennis Skill Performance and Hydration Status." *Medicine & Science in Sports & Exercise* 39: S43.

Tarnopolsky, M. A. (2008). "Effect of caffeine on the neuromuscular system potential as an ergogenic aid." *Applied Physiology, Nutrition and Metabolism* 33 (6): 1284–9.

Wiles, J. D., Coleman, D., Tegerdine, M. & Swaine, I. L. (2006). "The effects of caffeine ingestion on performance time, speed and power during a laboratory-based 1 km cycling time-trial." *Journal of Sports Sciences* 24: 1165–1171.

# THE LEARNING OF FUNDAMENTAL SWIMMING SKILLS BY DOWN SYNDROME SPORTSPEOPLE

VALERIA BĂLAN

## Introduction

Swimming is a discipline enjoyed by disabled and non-disabled people alike. Learning to swim requires the teacher's time and patience and the learner's attention. When the learner is disabled it takes much longer, and skills are more difficult to acquire.

As a genetic abnormality, Down syndrome involves malformations, deformations and mental retardation (Bums & Gunn 1993). The mental retardation is permanent and stressed over time. Besides a lot of other problems, the person with mental retardation has a very low level of attention which makes learning swimming more difficult.

In this context, we try to show that learning swimming is possible for Down syndrome persons.

Through our activity performed with Down syndrome subjects involved in our study, we try to achieve a part of the targets of the physical activity program for these disabled persons. From these, we mention increasing of muscle tone, improving of fitness level, stimulation of motor development, prevention or correction of musculoskeletal deficiencies, increasing the safety in the aquatic environment, and development of the skills through which the person can integrate more easily in society.

## Methods and Techniques

The experiment was realized over five months from November 2010 to March 2011) at the Miramar Complex, Bucharest. In this period, the subjects performed a sixty-minute lesson once a week.

In this study, we analyzed the manner in which three Down syndrome sportsmen learnt fundamental swimming techniques. They were AM (24), AD (22) and CB (18), from the Bucharest Down Syndrome Association.

The election of these people for swimming lessons was realized in their Association. The criteria for selection were: not being afraid of the water, and staying in the water only with a floating device.

The evaluation of the learnt skills were appreciated with the help of the skills progression items designed by the Special Olympics Aquatics Coaching Guide (2004). We adapted and modified them to better underline the manner in which our sportsmen learnt the fundamental techniques of stomach floating (prone float), front and back gliding and aquatic breathing. To all these skills, we added others appreciated as important during the learning process. All were linked with a number denoting the name of skill in Table 2-2. The skill-progression items were: sits on pool edge (1), sits on pool edge and kicks (2), enters water with assistance (3), enters water independently (4), blows into water (5), continuous breathing and exhalation pattern (6), stands in water with assistance (7), stands in water independently (8), puts face in water (9), sits on pool edge and enters water with assistance (10), sits on pool edge and enters water independently (11), jumps in shallow water independently (12), exits water with assistance (13), exits water independently (14), moves forwards and backwards (15), submerges in deep water with assistance (16), submerges in deep water independently (17), opens eyes under water with goggles (18), can touch pool bottom in deep water (19), floats on stomach with assistance (prone float) (20), floats on stomach independently (prone float) (21), recovers from front float with assistance (22), recovers from front float independently (23), recovers from front float to back float with assistance (24), recovers from front float to back float independently (25), moves from back float to front and returns with assistance (26), moves from back float to front and returns independently (27), pushes and glides on front with assistance (28), pushes and glides on front independently (29), pushes and glides on back with assistance (30), pushes and glides on back independently (31), kicks on front while holding onto pool side (32), kicks on back while holding onto pool side (33), moves forward using kickboard and front kick with assistance (34), moves forward using kickboard and front kick independently (35), moves forward using kickboard and back kick with assistance (36), moves forward using kickboard and back kick independently (37).

We must mention that the assistance was different in the function of the skills. So, at entering in water with assistance, sitting on the pool edge and entering water with assistance, and exiting the water with assistance, assistance means that the teacher stood out of the swimming pool and helped the sportsman to perform that skill. At standing in water with assistance, submerging in deep water with assistance, floating on stomach

with assistance (prone float), recovering from front float with assistance, recovering from front float to back float with assistance, moving from back float to front and returning with assistance, pushing and gliding on the front with assistance, pushing and gliding on back with assistance, moving forward using kickboard and front kick with assistance, and moving forward using kickboard and back kick with assistance, assistance was given by a floating device. In connection with their skills and their progression, we decided to renounce this device, and CB after the third evaluation, AM after the forth and AD, after the fifth evaluation, went on to learn freestyle.

The evaluations of our study were performed from four to four weeks. They evaluated all skills mentioned before with the help of three items: the sportsman did not perform the skill, the sportsman performed the skill rarely and the sportsman performed the skill frequently. For understanding more easily, the sportsmen evaluation that we change these items to marks: the sportsman did not perform the skill = 0, the sportsman performed the skill rarely = 1, the sportsman performed the skill frequently = 2.

## Results and Discussion

On the basis of the upper data, we designed more charts to better underline the manner in which our subjects learnt the fundamental elements of swimming (floating, gliding and breathing in water). In these charts, the five evaluations were noted with numbers, so as to be easily understood (November 2010 = T1; December 2010 = T2; January 2011 = T3; February 2011 = T4; March 2011 = T5).

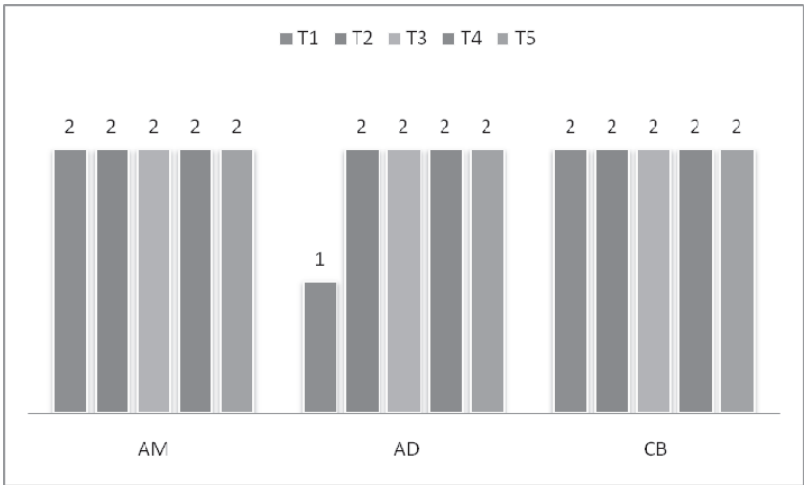
In connection with the “blows into water” skill, we could observe that all our subjects performed correct breathing. During the learning, this skill did not need much time (see Table 2-2 below, no. 5).

**Table 2-2. Fundamental swimming technique elements**

| *Skills* | November 2010 | | | December 2010 | | | January 2011 | | | February 2011 | | | March 2011 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AM | AD | CD | AM | AD | CD | AM | AD | CD | AM | AD | CD | AM | AD | CD |
| *1* | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *2* | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *3* | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *4* | 2 | 0 | 0 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 |
| *5* | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *6* | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *7* | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *8* | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *9* | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *10* | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *11* | 2 | 0 | 0 | 2 | 0 | 1 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 0 | 2 |
| *12* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| *13* | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *14* | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *15* | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *16* | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *17* | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *18* | 2 | 0 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *19* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 |
| *20* | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *21* | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 |
| *22* | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *23* | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 1 | 1 | 2 | 2 | 2 | 2 |
| *24* | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 0 | 2 | 2 |
| *25* | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 |
| *26* | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 2 | 0 | 2 | 2 | 0 | 2 | 2 |
| *27* | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 |
| *28* | 2 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *29* | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 | 2 |
| *30* | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 |
| *31* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 |
| *32* | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 |
| *33* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 |
| *34* | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *35* | 0 | 0 | 1 | 0 | 0 | 2 | 2 | 0 | 2 | 2 | 1 | 2 | 2 | 2 | 2 |
| *36* | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 1 | 2 | 2 |
| *34* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 |

To perform two or three breathing continuously requested more time for AD (see Figure 2-4 below). They could perform "continuous breathing and exhalations" after eight lessons. AM and CB could do this skill at the beginning. The "floats on stomach with assistance (prone float)" was performed by all subjects from the very beginning. It was performed with the help a floating device as this aspect facilitated the acquiring of this skill quickly (see Table 2-2 above, no. 20).

**Figure 2-4. Continuous breathing and exhalation pattern**




In contrast with the skill performed with assistance, the "floats on stomach independently (prone float)" (see Figure 2-5 below) was a difficult skill to learn. The best in learning this was CB, who learnt all skills quicker. AM performed this skill frequently after eight lessons and AD after sixteen lessons. The "pushes and glides on the front with assistance" was easy to learn and perform. Only AD had some difficulties in learning this, but the floating device help them a lot (see Table 2-2 above, no. 28).

The "pushes and glides on front independently" demanded more time of our subjects because they could not move their centre of gravity towards the upper limits of the body and their legs sank towards the bottom of the pool (see Figure 2-6 below). At the last evaluation (T5), all of them performed this skill without any problems.

**Figure 2-5. Floats on stomach independently (prone float)**

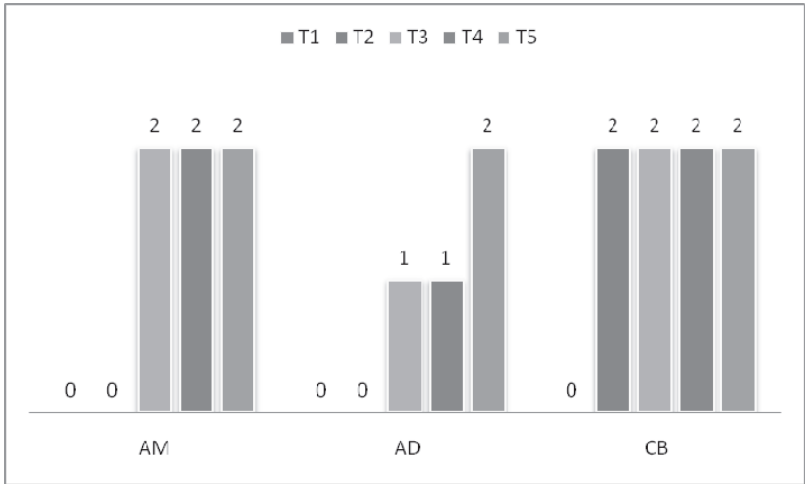
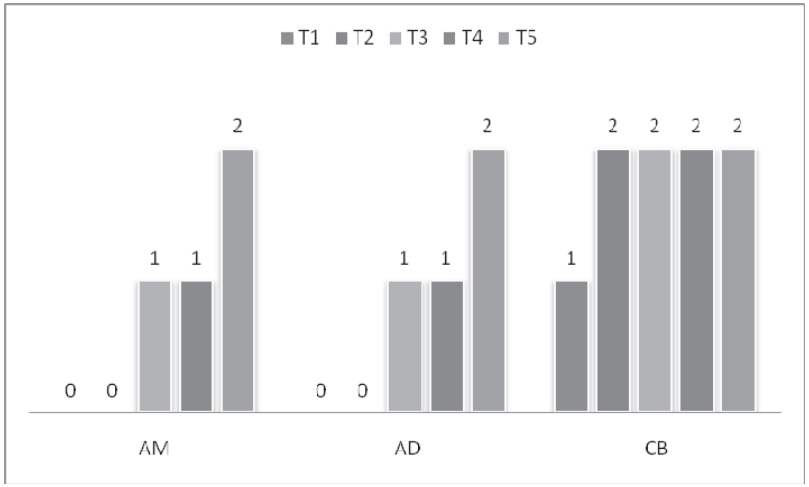
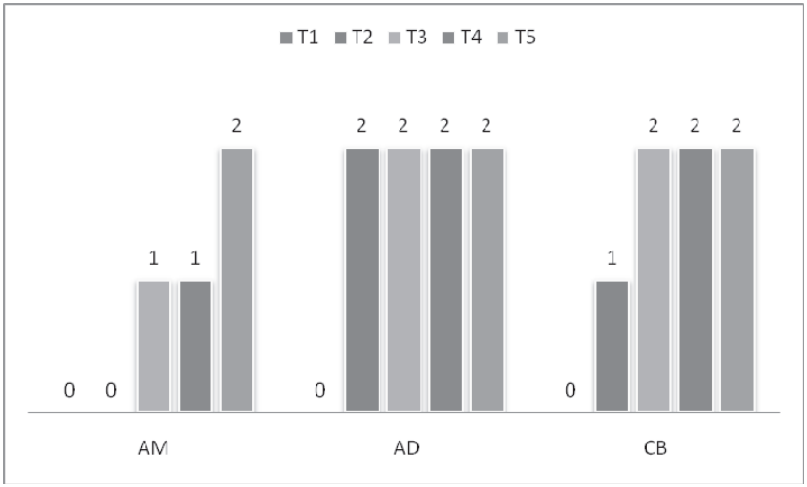



**Figure 2-6. Pushes and glides on front independently**




A more difficult skill to learn was "pushes and glides on back." With the floating device as an assistance, the subjects could perform this frequently—AD after four, CB after eight and AM after sixteen lessons (see Figure 2-7 below).

**Figure 2-7. Pushes and glides on back with assistance**

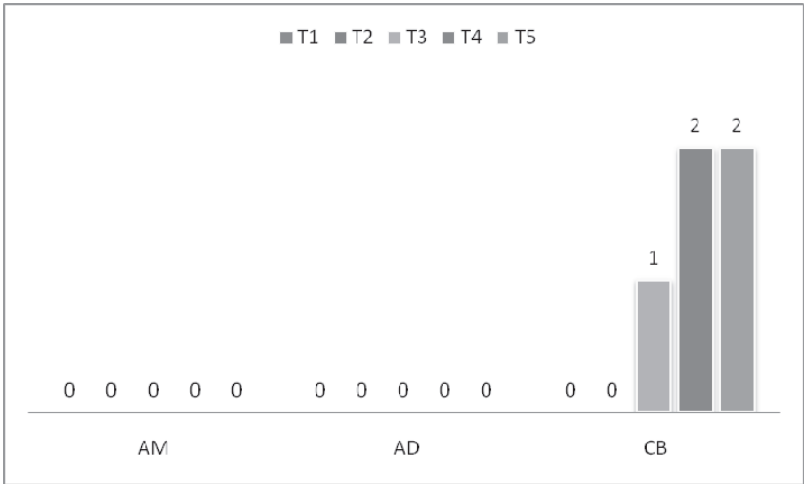



But "the pushes and glides on back independently" required very many exercises in and out of water (see Figure 2-8 below). CB succeeded in learning quicker again because he had better qualities for motor learning. Although AD learnt the pushes and glides on back with assistance more quickly, he could not learn pushes and glides on back independently because he breathed through his nose and he had water in his nose all the time. AM had significant problems in learning to push and glide on his back because he could not lie on his back on the edge of the pool. Due to this, he could not swim on his back in the water. We had to work a lot for him to learn in water. Finally, he learnt to push and glide on his back, but after thirty lessons. In the same manner, all skills mentioned were learnt more or less with difficulty.

## Conclusions

Through our study, we tried to show that the learning of swimming is possible by a Down syndrome person. In connection with their IQ and motor level, there is the possibility that a Down syndrome person can learn to swim more quickly than others.

**Figure 2-8. Pushes and glides on back independently**




Learning is more difficult, but with the teacher's patience and care the Down syndrome person can learn to swim, but they become bored sooner than a non-disabled person. In this case, the teacher should be able to make the exercises more attractive. However, once the Down syndrome person has learnt to swim, this sport discipline can become a means for improving the health, motor and affective levels and aid the easier integration in to society (within the limits of real possibilities), allowing the easier acquisition of personal skills and increasing life expectancy.

## References

Bums, Yvonne T. & Gunn, Pat. (1993). *Down Syndrome: Moving through Life*. London: Chapman and Hall.

*Special Olympics Aquatics Coaching Guide*. (2004). http://media.specialolympics.org/soi/files/sports/Aquatics/edgdrsyo/Aquatics.pdf.

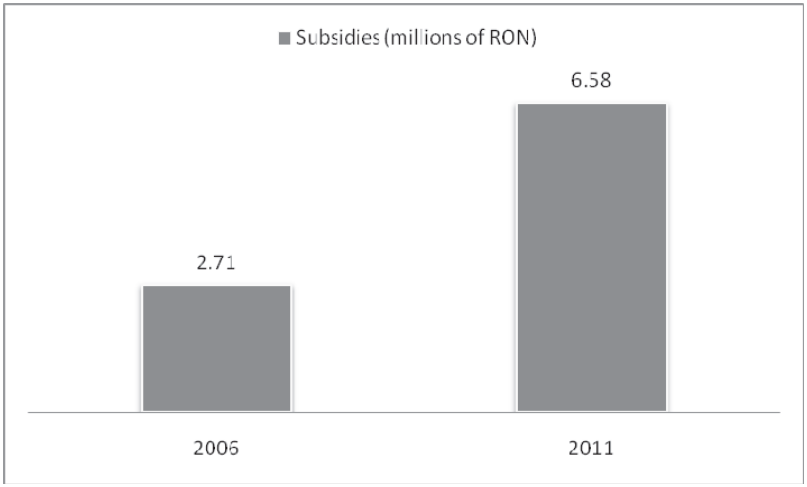
# THE LIFESTYLES OF TRAINED STAFF IN PLACEMENT CENTRES (CARAŞ-SEVERIN COUNTY, ROMANIA)

ANDRADE BICHESCU

## Introduction

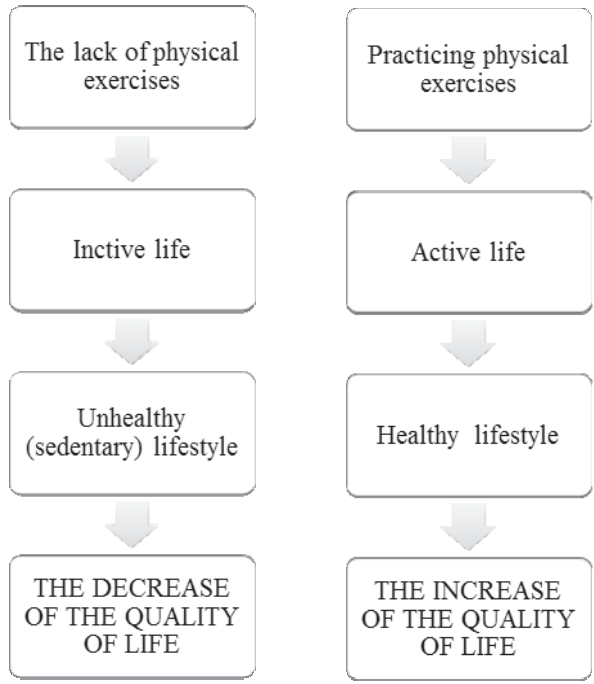
Nowadays, the society we live in has, unfortunately, created individuals with many health problems. How can we otherwise perceive the recent information which reveals the fact that, between 2006 and 2011, the subsidies allotted to medicine in Romania increased from 2.71 million RON (2006) to 6.58 million RON (2011)? (see Figure 2-9 below).

**Figure 2-9. Evolution of subsidies allotted for medicines (Source: INSSE)**



One of the reasons that could determine this problematic situation could be sedentariness, the well-known disease of the twentieth century, which, in turn, is the trigger of other numerous diseases of the human body. As we know well, sedentariness points to a lack of physical activities in the life of a person, which can only determine a decrease in the quality of life. This aspect is the result of the inactive characteristic of lifestyle, offered by sedentariness, knowing that the concept of quality of life, according to Zamfir (in Baciu 2009, 7), refers to "both the global evolution of life (how good or satisfactory is the life of different persons, social groups, communities) and the evolution of different conditions or spheres of life." Therefore, the characteristic of the lifestyle is determined during the growth, development and educational process of every individual, the polarity towards which it tends to manifest awarding an increase or decrease in quality of life (see Figure 2-10 below).

**Figure 2-10. Differences determined by the characteristic of the lifestyle (Source: Bichescu 2012)**



Regarding the centres of child protection, besides the fact that they try to solve such a problematical situation with the specialists they have, they should also seek to guide and educate the children to practice sports activities independently and continuously, having in view the numerous benefits they could bring at the somatic and functional levels, and the psychological and social levels. Specialised staff working in placement centres often become, for many of those who benefit from protection, a real life model, and through the personal characteristic of their lifestyle, they can directly influence the way these children spend their free time.

Hence, a research among the placement centres in the area of Caraş-Severin County (Romania) aims to outline an image of what free time means for the specialised staff, of what is characteristic of the lifestyle and, moreover, the way in which they can be models of active life for the institutionalised children.

## Research Methods

The characteristic of the lifestyle of the specialized staff in the placement centres offers a life model for the institutionalised children.

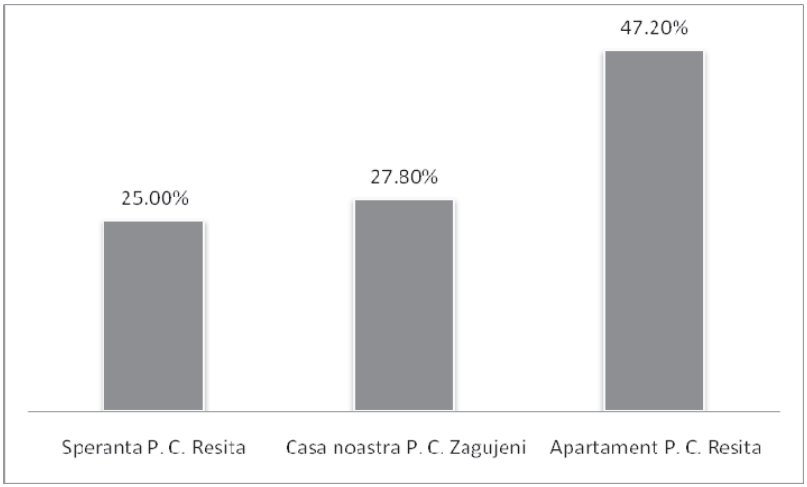
The study focused on three placement centres in the area of Caraş-Severin County, where we applied the questionnaires to 36 specialized persons: 19 education instructors, 1 specialized educator, 3 educators, and 13 referees (see Table 2-3 below).

**Table 2-3. Number of specialized staff participating in the investigation**

| The Specialized staff | Institution | | | Total |
|---|---|---|---|---|
| | "Speranta" P.C. Resita | "Casa noastra" P.C. Zagujeni | "Apartament" P.C. Resita | |
| Education instructors | 7 | 8 | 4 | 19 |
| Specialized Educator | 1 | - | - | 1 |
| Educators | 1 | 2 | - | 3 |
| Referees (social parents) | - | - | 13 | 13 |
| TOTAL | 9 | 10 | 17 | 36 |

The amounts of specialised staff who participated in the inquiry in the three placement centres varies between 47.2% ("Apartament" P.C. Reşiţa and 25.0% ("Hope" P.C. Reşiţa) (see Figure 2-11 below).

**Figure 2-11. Percent of specialised staff participating in the inquiry (Source: Bichescu 2011)**




We applied the questionnaire for the specialised staff to 36 persons. It included 10 items through which we monitored:

- The determination of the free time budget of the specialized staff
- The identification of the ways of spending free time among the specialized staff
- The perception of the specialized staff's characteristic lifestyle.

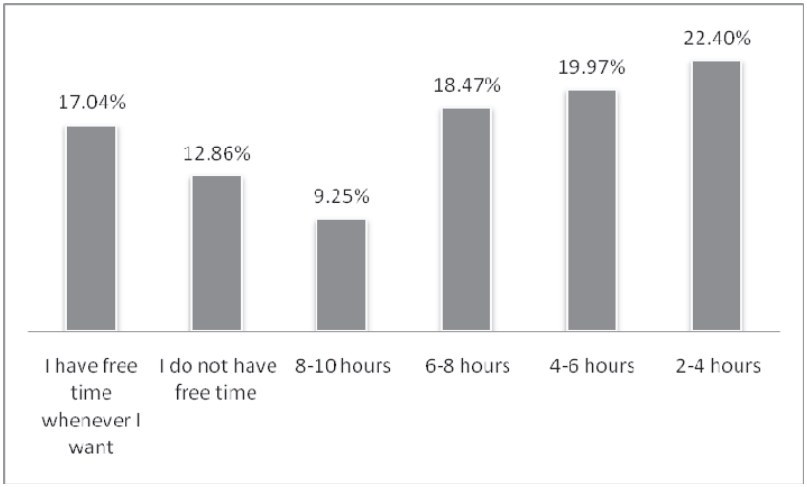
## Analysis

After the centralisation of the application of the questionnaires, we discovered that:

A large percentage of the specialised staff benefits from an important period of free time which could be used in a constructive purpose, for an active life. Figure 2-12 below shows that 22.40% of the staff have 2 to 4 hours available, 19.97% have 4 to 6 hours, 18.47% have 6 to 8 hours, 9.25% have 8 to 10 hours, and 17.04 % say they have as much free time as they want. In other words, except the 12.86 % who stated that they do not

have free time, all the others benefit from a certain time interval which they use for different personal purposes (see Figure 2-12 below).

**Figure 2-12. Average of daily free time available for the specialized staff**




According to the answers to one of the questions, only 41.16% regularly practice sports activities in their free time, while an alarming 58.84% indicate that the qualified staff chooses a sedentary style of spending their free time because of a lack of interest towards sports activities. Even if, at present, they have a sedentary lifestyle, more than half of the subjects participating in the research (63.02%) are pleased, even extremely pleased, about the way in which they spend their free time, as demonstrated by the answers to question 16.

The study shows, correlating the answers to the question "How many times did you practise a sports activity last week?" with the answers to the question "What do you prefer to do during your free time?", that the specialised staff present a sedentary lifestyle. However, the answers to the question "How often do you think you should practise sports activities in your free time?" shows that 57.56% of respondents are aware that sports activities should be regularly practised during free time (see Figures 2-13, 2-14, 2-15 and 2-16 below).

**Figure 2-13. Practising a sports activity by the specialized staff in the last week**

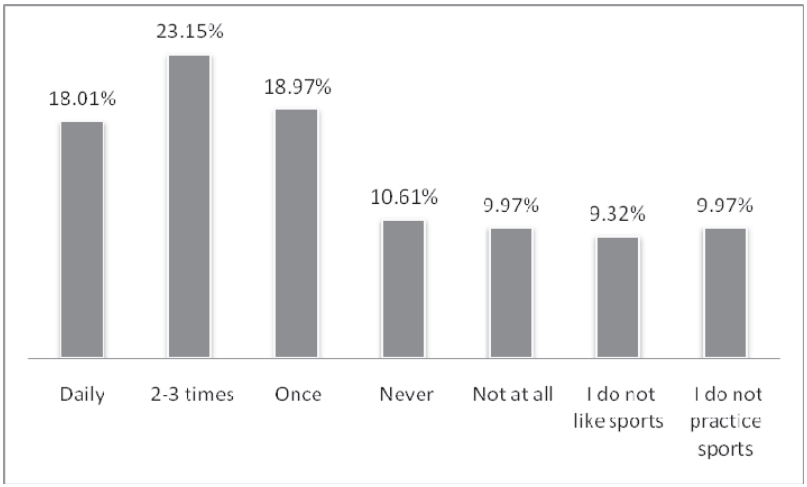



**Figure 2-14. Degree of contentment of the specialised staff towards the manner of spending free time**

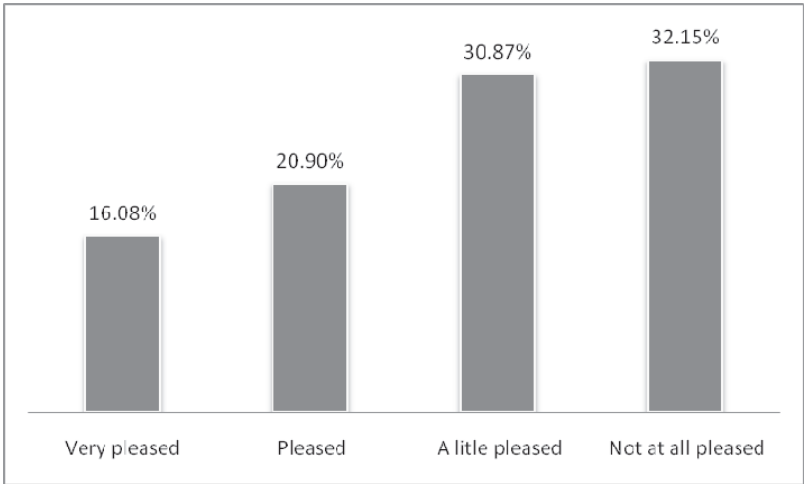


**Figure 2-15. Preferences for free time of the specialized staff**

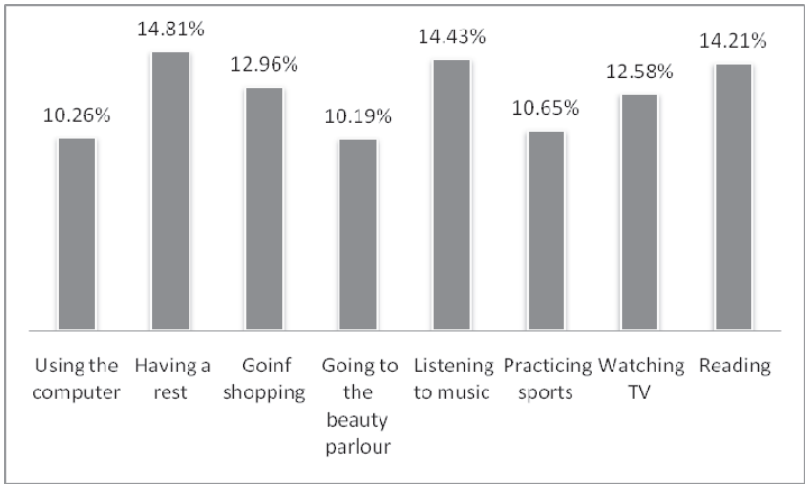
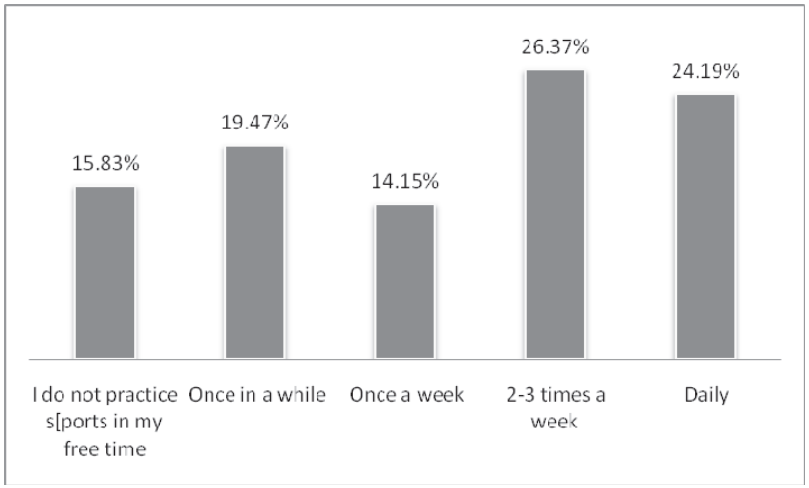



**Figure 2-16. Opinions of specialized staff regarding the practice of sports activities during their free time**



## Conclusion

After the application of the questionnaires, the analysis and interpretation, we have reached a relevant conclusion for the research, namely that the lifestyles of the specialised staff who work in placement centres do not present an active characteristic which should instil children with a healthy life model.

This is the reason why a change in the lifestyle of the specialised staff is necessary and, in this direction, those responsible with the management of these institutions and those responsible with social policies in Romania should try to offer opportunities of daily practice of sports activities both within the institution and in the local community.

## References

Baciu, M. A. (2009). *Educaţia fizică, sportul şi calitatea vieţii – suport de curs* [Physical Education, Sport and Life Quality: A Course]. sport.ubbcluj.ro/Master%20EFAT%20Susport%20Curs.doc.

Bichescu, A. I. (2011). *Integrarea socială prin educaţie fizică şi sport a copiilor şi adolescenţilor instituţionalizaţi-asistaţi* [Social Integration through Physical Education and Sport of the Institutionalized-Assisted Children and Teenagers]. Teză de doctorat. Universitatea de Vest, Timişoara.

*Institutul Naţional de Statistică* [National Institute of Statistics]. www.insse.ro.

# ADAPTATION-TYPE BEHAVIOUR DEVELOPMENT IN CHILDREN WITH DOWN SYNDROME THROUGH MOTOR STIMULATION

AURA BOTA AND CONSTANȚA URZEALĂ

## Introduction

In response to a societal change of mentality and attitude, Romania has implemented numerous projects regarding the participation of children with disabilities in physical education activities, sports, fitness and recreation programs.

One of the most important contributions to this progress is represented by the inclusion of adapted physical activities-related curricula in the professional training of specialists in physical education, sports and physical therapy. Due to the major extension of Special Olympics programs, academic staff and students embraced the philosophy and mission of this organisation, gathering an impressive number of children with intellectual disabilities in educational, sports, medical, media campaign projects, etc. All these activities prove that self-actualization theory and humanistic approach are particularly important when working with these persons because the differences that most people perceive about them are linked to overcoming social barriers and preconceptions often attached to them (Sherrill 2003).

More than improving the functional and motor capacities, we believe that universities can make a difference in building communities as a whole, giving support and opportunities for families, specialists, law enforcement, local leaders, etc., in a spirit of generosity, inclusion and volunteering.

This frame of activities also enables researchers and academic staff to get valuable data on different topics, such as inclusion of intellectually challenged people, health-related studies, adapted sports training principles and methods, and psychomotor stimulation patterns in children of different ages.

Our study is related to the last mentioned topic and aims at identifying whether Young Athletes (YA) motor stimulation program (as part of the Special Olympics activities) can improve the adaptation-type behaviour components in three to five year old children with Down syndrome (DS). Reviewing literature on children with DS underlines a dual perspective—some authors maintain that motor skills in DS are quantitatively different from age-matched, non-disabled peers, leading to the idea that these acquisitions are simply developmentally delayed; in contrast, some assert that motor performance in DS is qualitatively different, due to a cognitive dysfunction.

Casual observation and research emphasize that everyday movements of children with DS often show "clumsiness," lack of speed and smoothness, and some sensory-motor limitations like timing deficits (Henderson, Moriss & Frith 1981), deficits in motor programming (Frith & Frith 1974) and in adjusting different kinds of generating force. In addition, Latash & Anson (1996) have argued that movements of children with DS are a consequence of an impaired decision-making process and not necessarily a consequence of a primary motor deficit.

Authors like Weeks, Chua & Elliott (2000) reveal that persons with Down syndrome may exhibit unique performance patterns in many motor activities, but the characteristics of their motor behaviours change as a function of both development and learning. This means that they may incorporate into their movement acquisitions and many adaptive behaviours which help them deal with the characteristics of their cognitive, perceptual, motor systems or social inclusion.

We can assume that acquisition and performance of motor skills in everyday life are influenced by both intrinsic (state of CNS, biomechanical properties, orthopaedic or cardio-vascular limitations) and external variables (family support, rich learning environment, rehabilitation programs, etc.), meaning that an early intervention approach is decisive in minimizing the motor deficit and subsequently fostering the other related areas of adaptation.

## Methods and Techniques

The methods used were: experiment, observation, evaluation test and statistical processing. The sample included 11 children, aged between four and five, all with Down syndrome, who participated in the Young Athletes program over three months from March to May 2011, at UNEFS Bucharest. Young Athletes is an innovative sports play program designed to introduce preschool kids to the world of sports so that they can learn

fundamental motor skills in a playful, attractive and easy-going manner, adapted to their unique developmental patterns. The content of this program pursues the following goals: engaging children with intellectual disability (ID) through developmentally appropriate play activities designed to foster physical, cognitive and social development; welcoming family members to different networks of support, and; raising awareness about the abilities of children with ID. This stimulation program includes fundamental skills of walking and running, balancing and jumping, trapping and catching, throwing, striking, kicking and advanced skills. The YA program includes several resources to guide educators and family members, such as YA activities guide, training DVD and YA equipment kit (including balance beam, light inflatable ball, beanbags, cones, large plastic blocks, dowels, floor markers, hoops, pedals, scarf, small foam balls, and slow motion balls).

Regarding the instructional content of the program, we adapted the exercises for each of the motor skills, according to the subjects' particularities of motor acquisitions level, effort reactivity, fitness levels, personal preferences, and emotional states. Lessons were conducted by the second year Adapted Physical Activities Master students from UNEFS Bucharest, in one of their practical stages, each of them being in charge with one child. The total number of hours for administering this program was 36, with each lesson lasting eighty minutes.

For our experimental-type study, an initial and final Portage evaluation scale was used in order to assess the subjects' progresses in the adaptation areas involved. This scale evaluates a certain imbalance between the chronological and mental age of the child so that one can identify the areas in which the subject has delays or deficits according to the developmental pattern.

The items of this scale cover five areas of interest that parents or caregivers evaluate: socialisation, language, self-help, cognition and motor area. The information provided is an important clue for the specialists who will try to reduce the deficits, if existing. Each section has a certain number of statements, divided on age levels, from 0 to 1, 1–2, 2–3, 3–4, 4–5, 5–6 years old. The scale matrix was filled in by the parents, before and after the training period.

## Results and Discussion

Data were analyzed for each age level and corresponding areas of adaptation. In Table 2-4 below, we present a general synthesis of the data collected, expressed by initial and final means, t test, p and d values.

**Table 2-4. Synthesis of the statistical values for the Portage scale areas**

| Age levels | | Socialization | Language | Self-help | Cognition | Motor |
|---|---|---|---|---|---|---|
| 0-1 | $m_i$ | 26.36 | 8.27 | 11.82 | 13.64 | 40.82 |
| years | $m_f$ | 26.82 | 8.36 | 12 | 13.64 | 42.18 |
| old | t | 1.61 | 1 | 1.49 | 1 | **3.01** |
| | p | >0.05 | >0.05 | >0.05 | >0.05 | <0.05 |
| | d | 0.49 | 0.30 | 0.45 | - | 0.91 |
| 1-2 | $m_i$ | 13.82 | 8.55 | 10.91 | 9.82 | 17.82 |
| years | $m_f$ | 14.09 | 8.45 | 11.45 | 9.91 | 17.91 |
| old | t | 1.40 | 1 | **2.63** | 1 | 1 |
| | p | >0.05 | >0.05 | <0.05 | >0.05 | >0.05 |
| | d | 0.42 | 0.30 | 0.79 | 0.30 | 0.30 |
| 2-3 | $m_i$ | 4.27 | 3 | 15.73 | 9.64 | 10.82 |
| years | $m_f$ | 4.73 | 3.18 | 17.18 | 10 | 12.27 |
| old | t | 1.40 | 1 | **3.35** | 1 | 1 |
| | p | >0.05 | >0.05 | <0.05 | >0.05 | >0.05 |
| | d | 0.66 | 0.24 | 1.01 | 0.54 | 0.96 |
| 3-4 | $m_i$ | 3.27 | 0 | 4.18 | 5.91 | 5.82 |
| years | $m_f$ | 4.27 | 0.09 | 5.18 | 6.45 | 7.45 |
| old | t | **3.03** | 1 | **3.71** | **2.63** | **6.71** |
| | p | <0.05 | >0.05 | <0.05 | <0.05 | <0.05 |
| | d | 0.91 | 0.30 | 1.12 | 0.79 | 2.02 |
| 4-5 | $m_i$ | 1.18 | 0 | 1.09 | 0.64 | 1.45 |
| years | $m_f$ | 1.27 | 0 | 1.36 | 0.91 | 2.09 |
| old | t | 1 | 1 | 1.94 | 1.94 | 1.88 |
| | p | >0.05 | >0.05 | >0.05 | >0.05 | >0.05 |
| | d | 0.30 | - | 0.58 | 0.58 | 0.57 |

Due to the numerous results, tables and graphs emerging from the statistical processing, we will present only the data connected to the motor behaviour area, from the three to four years old age level.

According to Table 2-5 below, for the three to four years old developmental scale, the mean (m) improved with 1.64, from 5.82 to 7.45, in the final testing. Cohen index (d) 2.02 demonstrates a great difference between the means. The null hypothesis testing (t test in Table 2-6 below) shows a significant increase of the results ($p<0.05$) due to the stimulation program as revealed in Figure 2-17 below.

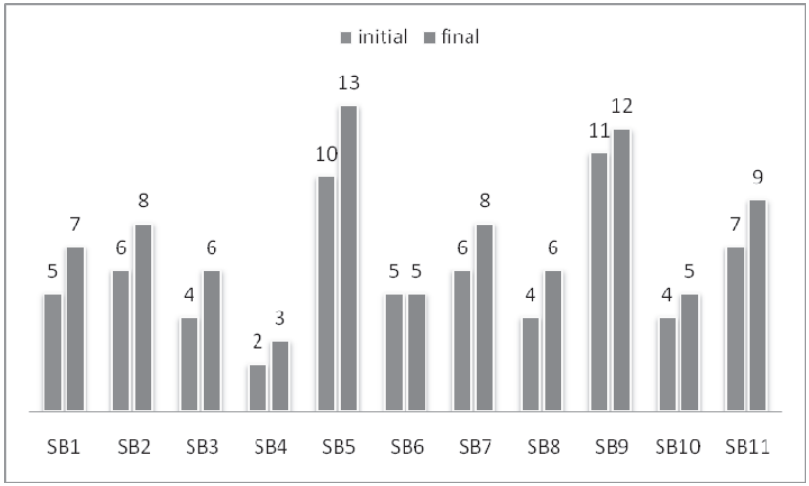
**Table 2-5. Statistics for the Portage motor area (3–4 years old)**

| TESTING | STATISTICS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | Median | Standard deviation | Max. | Min. | Amplitude | V.C. (%) | Means difference | Cohen Index |
| Initial | 5.82 | 5 | 2.68 | 11 | 2 | 9 | 46.00 | 1.64 | 2.02 |
| Final | 7.45 | 7 | 3.01 | 13 | 3 | 10 | 40.41 | | |

**Table 2-6. Bilateral t test values, motor area (3–4 years old)**

| Hypothesis | | Constant parameters | | | | Results | |
|---|---|---|---|---|---|---|---|
| $H_0$ | $H_1$ | α | N | df | t critical | t calculated | P |
| $m_1 = m_2$ | $m_1 \# m_2$ | 0.05 | 11 | 10 | 2.23 | 6.71 | **<0.05** |

**Figure 2-17. Initial and final results: motor area (3–4 years old)**




By analyzing the whole motor acquisitions of the children involved, we can assert that the mental age of most of the subjects in this area is 1.5 to 2 years behind the chronological age. We can assume that the items corresponding to the first and second age levels were almost completely validated by the parents as they mostly concern reflex or simple activities,

easy to fulfil, unless there is a neurological dysfunction. As for the two to three years old developmental level, most of the items involve play-type activities, and ball and toys related movements, which are attractive to discover and perform. Starting with three to four years old level, items reveal a higher capacity to perform movements with a certain level of motor control, hand-eye coordination, and fine motor skills and dexterity, a fact which makes them more challenging to improve. For this stage, the intervention of a specialized physical educator is mandatory in order to minimize the motor deficit and to successfully approach the next developmental stages.

Regarding the presumed correlations between the motor abilities level and the other adaptation area acquisitions, data are presented in Table 2-7 below.

**Table 2-7. Statistical correlations between motor and the other adaptive areas**

| Age levels | Correlations | Adaptation areas | | | |
|---|---|---|---|---|---|
| | | Socialization | Language | Self-help | Cognition |
| 0-1 years old | Pearson | **0.766**** | 0.413 | 0.597 | **0.610*** |
| | Sig. (2-tailed) | 0.006 | 0.207 | 0.052 | 0.046 |
| 1-2 years old | Pearson | **0.655*** | 0.450 | 0.480 | -0.043 |
| | Sig. (2-tailed) | 0.029 | 0.165 | 0.135 | 0.900 |
| 2-3 years old | Pearson | 0.586 | 0.511 | 0.483 | **0.980**** |
| | Sig. (2-tailed) | 0.058 | 0.109 | 0.133 | 0.000 |
| 3-4 years old | Pearson | **0.745**** | .a | -0.154 | **0.982**** |
| | Sig. (2-tailed) | 0.008 | .a | 0.650 | 0.000 |
| 4-5 years old | Pearson | **0.976**** | .a | .a | **0.997**** |
| | Sig. (2-tailed) | 0.000 | .a | .a | 0.000 |

a. Cannot be computed because at least one of the variables is constant.
*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

As one can notice, significant correlations have been found between motor behaviour and socialization in all five age levels, except the two to three years old stage. Three of these correlations are significant at the 0.01 level.

In addition, significant correlations have been statistically demonstrated between motor abilities and cognitive area in all five age levels, except the one to two years old stage. Three of these correlations are significant at the 0.01 level.

Language development has registered minor improvements in three of the age levels. In the one to two years old stage, values decreased in the four to five years old level, the final results being identical to the initial ones. This area of adaptation, although essential for the child's personality development, remains a critical issue in Down syndrome subjects due to an important lack of conceptualization capacity and also to an insufficient recruitment of the fine phonetic muscle groups.

Concerning the self-help area, subjects enhanced their capacity of autonomous conducts in some of the daily routines, expressed in significant statistical values in three of the five age levels analyzed. No correlation was identified with the motor acquisitions area, contrary to what we expected before data processing.

## Conclusions and Proposals

- Due to the motor stimulation patterns included in the Young Athletes programme, improvements have been found in the concerned adaptation areas, especially in fundamental motor skills, self-help routines and social insertion, even if some of these have not been proved to be statistically significant.
- Statistical correlations were established between motor behaviour and socialization and cognitive abilities, a fact which is an important asset to the adaptation capacity related to daily tasks requiring that children have independence or autonomy.
- Even if the statistical approach is a must in the scientific research design, we believe that in disabled children, any minor progress is desirable, underlining once again the necessity of having an individualized educational programme (IEP), conducted by an authorized specialist.
- One of the advantages of the YA programme consists in the constant support of the families who work in close partnership to develop and implement individualized intervention for the child, aimed at enhancing the child's language, cognitive, motor, self-help or social skills. All skills should be performed in the context of the family's rituals, daily routines and play.
- Given the bio-psycho-motor specific profile of children with Down syndrome, which has a less predictable developmental pattern, an early

motor intervention is an essential part of the complex rehabilitation process that these should embrace, in order to develop their present abilities and minimize the functional delays or social handicaps.

## References

Frith, Uta & Frith, C. (1974). "Specific Motor Disabilities in Down Syndrome." *Journal of Child Psychology and Psychiatry* 15 (4): 293–301.

Henderson, Sheila, Moriss, Janet & Frith, Uta. (1981). "The Motor Deficit in Down Children Syndrome: A Problem of Timing?" *Journal of Child Psychology and Psychiatry* 22 (3): 233–245.

Latash, M. & Anson, J. G. (1996). "What Are 'Normal Movements' in Atypical Population?" *Behavioural and Brain Sciences* 19 (1): 55–68.

Sherrill, Claudine. (2003). *Adapted Physical Activity, Recreation and Sport: Crossdisciplinary and Lifespan.* New York, NY: McGraw Hill.

Weeks, D., Chua, R. & Elliott, D. (Eds.). (2000). *Perceptual-Motor Behaviour in Down Syndrome.* Champaign, IL: Human Kinetics.

# Optimizing Junior Gymnasts' Training, in Order to Improve Support in Men's Artistic Gymnastics

Ionuţ Corlaci

Artistic gymnastics is one discipline that continues to surprise us, competition after competition, through the evolving nature of the exercises and, especially, through the constant development of new spectacular and complex elements.

## Introduction

A scrutiny of the evolution of great gymnasts who have stood out on the arena of the various European, world and Olympics championships allows us to say that a high performance gymnast "model" has been developed. Apart from extensive technical knowledge, flawlessly put into practice, and the pleasant and well-shaped appearance or the properly balanced nervous system, the strong individual, capable of great and very complex efforts in order to respond to the rigors of important competitions, stands out. The example of gymnasts from Japan, the former USSR, China, as well as of other new individuals, shows us that one cannot currently aspire to a medal in a high-level competition without a very technical and spectacular routine, fully supported in esthetical terms by impressive motor and technical skills. These skills have to be acquired through a judicious and scientific process starting at the future gymnasts' formation stage. This chapter focuses on the importance of working with children in the correct formation of posture, with support so that sportspeople are familiarized, from the beginning, with the accurate technical basis for movements with support. Some specialists overlook the gymnasts' training in this direction, which always requires great patience and skill, hence slower and sometimes faulty progress. Each specialist desires quick progress with gymnasts and good results, but to that end the superior familiarization with the elements and movements ensuring the support for the technical evolution of this posture should be taken into account. The

current level of artistic gymnastics currently is that of "art," which, in fact, triggered the modification of its designation from "sports gymnastics" into "artistic gymnastics". The progress dynamics are given by the struggle between new and old, the desire to continuously enhance performance through the improvement of selection and technological means, as well as through the unconditioned commitment of sportspeople in the struggle for records and victories. The hypothesis is that an optimum correlation between physical support and technical objectives, the modification of the systems of action, work methods and methodology, the adaptation thereof to the age specifics and to the young gymnasts' training level will lead to the optimization of the technical training of children within the artistic gymnastics division of "Steaua" No. 3 Sports Club, in Bucharest. This research shows that, through the optimum correlation of the physical support and technical goals, and the modification of the systems of action, work methods and methodology, the envisaged elements are learnt faster and the technical training of children within the artistic gymnastics division of "Steaua" No. 3 Sports Club, in Bucharest was optimized. The methods of research were bibliographical research, observation, experiment, the cinevideographic method, data processing and interpretation method. One of the most important levers in high performance sports progress is the substantial development of motor skills. The technical training of children in this stage supposes teaching technique basics, and forming the correct posture and gymnastics style in the performance of routines. These technical training elements are useful during the learning of apparatus routines from hanging and support positions, as well as choreographic, acrobatic routines, and jumps. Thirty percent of the overall training time shall be dedicated to the preparation of the technique. Starting at this young gymnasts' training stage, we gave special attention to the efforts made for the achievement of the technical assistance through the development of support. Ensuring proper support, both in technical and in physical terms, is fundamental in learning the basic elements in general and men's artistic gymnastics routines elements in particular. By learning routines from a support position, performers strive to maintain the correct postures and carry out various movements with their trunk and legs, common in routines performed by sportsmen in competitions. Skilfulness is defined from three points of view: firstly, as a complex motor skill; secondly, as an individual's capacity to quickly learn new moves; thirdly, as the capacity to quickly restructure under various conditions, depending on the concrete performance circumstances. Mobility (flexibility) refers to the capacity to use the anatomic movement potential to the maximum in a certain joint or in all body joints. Mobility is the ability to make varying

amplitude movements with certain segments of the body. Strength is the body's psycho-physical ability to cope with the fatigue specific to the activity carried out. The strength development level reflects in the high functional capacity of cardio-vascular and respiratory systems, metabolism and the nervous system, as well as the capacity to coordinate the other tracts and systems in the body.

The Support posture development action system consists of: Support lying face down with the toes on a gymnastics bench, the palms on the ground, various positions of the palms on the ground are practiced; switching weight from one arm to another, with the change of the position of palms on the ground; On the balance beam or on one of the parallel bars, side travel in facial support; Support travel on parallel bars; A partner holds the performer's ankles and the latter travels in facial support, "Cart" style; Backwards movement from the dorsal support position, with the body stretched and the pelvis upwards; In open hips support, support travel on grip-free pommel horse; Swings from support position to support position, elbows straight; Support travel on angle parallel bars (two-way); Dorsal support travel (backwards), a partner holds the performer's legs and hips very high; Support lying face down, forward movement jumps, a partner supports the performer's legs; Jumps from support to support position, elbow stretched, on angle parallel bars (two-way); Side travel in support on pommel horse, surrounding it; Facial support on grips, simultaneously moving the legs between arms, in dorsal support; At a fixed scale, maintaining the facial support position. Specific Physical Training (SPT) is initial and final:

- Support side travel on the balance beam; one balance beam length, with time constraints.
- Push-ups in support position on parallel bars; maximum number of repeats.
- Lying on the back, arms stretched, simultaneous trunk bends on the hips so that the palms touch the toes "pikes" (abdomen 2); maximum number of repeats.
- Support travel through swings on parallel bars; with time constraints.
- From grip support, moving the legs between the arms, forward-backwards; maximum number of repeats.

## Experiment Organization and Performance

In order to check hypotheses, we have organized an experiment within the sports artistic gymnastics department of "STEAUA" No. 3 Sports Club in

Bucharest. For objective reasons specific to school sports clubs, the research only included one experimental gymnasts group (ten gymnasts of eight to eleven years old). Because we could not use a control group, the experiment was performed in three stages: an initial acknowledgement stage (pre-test); a fundamental stage, which included the experiment as such; a final control stage (post-test). The low number of sportspeople in the performance groups is specific to men's artistic gymnastics. The research was planned and performed during September 2011 to April 2012 with 174 trainings. It should be mentioned that both the initial and the final testing were performed based on the same methods and under the same conditions for all subjects.

## Data Processing and Interpretation

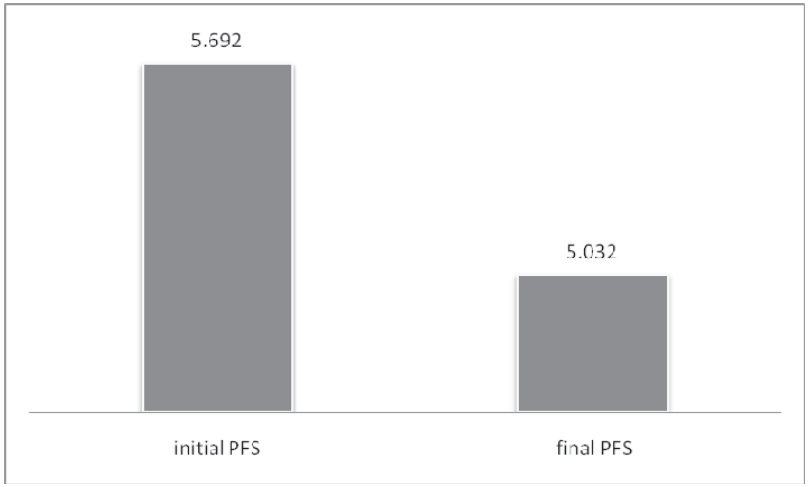
| | | | | | |
|---|---|---|---|---|---|
| **SPT – initial** | | | | | |
| M.T. | 20 | 5.20" | 29 | 5.23" | 17 |
| T.P. | 23 | 5.38" | 28 | 5.29" | 15 |
| N.C. | 20 | 5.92" | 27 | 5.54" | 12 |
| F.V. | 19 | 5.15" | 26 | 5.15" | 16 |
| I.C. | 20 | 5.45" | 28 | 5.40" | 15 |
| I.C. | 20 | 5.30" | 28 | 5.51" | 15 |
| C.F. | 20 | 6.07" | 26 | 5.73" | 14 |
| C.A. | 17 | 6.00" | 26 | 5.98" | 12 |
| V.M | 17 | 6.30" | 26 | 6.51" | 10 |
| V.C. | 15 | 6.15" | 26 | 6.48" | 10 |
| **SPT – final** | | | | | |
| M.T. | 25 | 4.34" | 31 | 4.87" | 25 |
| T.P. | 29 | 4.80" | 30 | 4.73" | 23 |
| N.C. | 25 | 5.00" | 29 | 5.00" | 21 |
| F.V. | 23 | 4.50" | 29 | 4.82" | 25 |
| I.C. | 23 | 4.73" | 30 | 4.96" | 24 |
| I.C. | 25 | 4.60" | 30 | 5.09" | 22 |
| C.F. | 25 | 5.20" | 28 | 5.20" | 21 |
| C.A. | 20 | 5.60" | 29 | 5.60" | 20 |
| V.M. | 20 | 5.92" | 28 | 5.87" | 19 |
| V.C. | 18 | 5.63" | 28 | 5.94" | 18 |

Test 1. Side travel in support on the balance beam **(see** Figure 2-18 below).

$$M_A = \frac{N_1 + N_2 + N_3 ..... + N_{10}}{10} = \frac{18.64 + 14.53 + 17.15}{10} = \frac{50.32}{10} = 5.032$$

$$M_A = \frac{N_1 + N_2 + N_3 ..... + N_{10}}{10} = \frac{21.65 + 16.28 + 18.45}{10} = \frac{56.92}{10} = 5.692$$

**Figure 2-18. Side travel in support on the balance beam (Test 1)**




Test 2 . Push-ups in support on parallel bars (see Figure 2-19 below).

$$M_A = \frac{N_1 + N_2 + N_3 ..... + N_{10}}{10} = \frac{82 + 60 + 49}{10} = \frac{191}{10} = 19.1$$

$$M_A = \frac{N_1 + N_2 + N_3 ..... + N_{10}}{10} = \frac{102 + 73 + 58}{10} = \frac{233}{10} = 23.3$$

Test 3. Abdomen 2 (see Figure 2-20 below)

$$M_A = \frac{N_1 + N_2 + N_3 ..... + N_{10}}{10} = \frac{110 + 82 + 78}{10} = \frac{270}{10} = 27$$

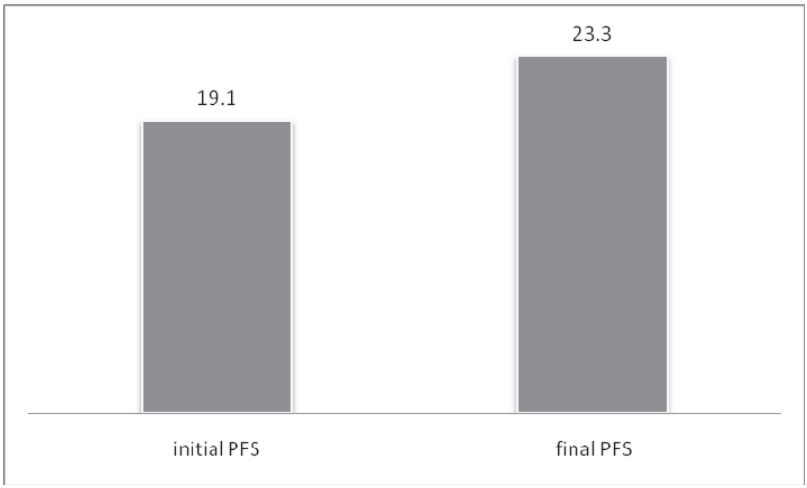
$$M_A = \frac{N_1 + N_2 + N_3 ..... + N_{10}}{10} = \frac{119 + 88 + 85}{10} = \frac{292}{10} = 29.2$$

Test 4. Travel in support through swings on parallel bars (see Figure 2-21 below).

$$M_A = \frac{N_1 + N_2 + N_3 ..... + N_{10}}{10} = \frac{21.21 + 16.64 + 18.97}{10} = \frac{56.82}{10} = 5.682$$

$$M_A = \frac{N_1 + N_2 + N_3 ..... + N_{10}}{10} = \frac{19.42 + 15,.5 + 17.41}{10} = \frac{52.09}{10} = 5.209$$

**Figure 2-19. Pushups to support the parallel (Test 2)**

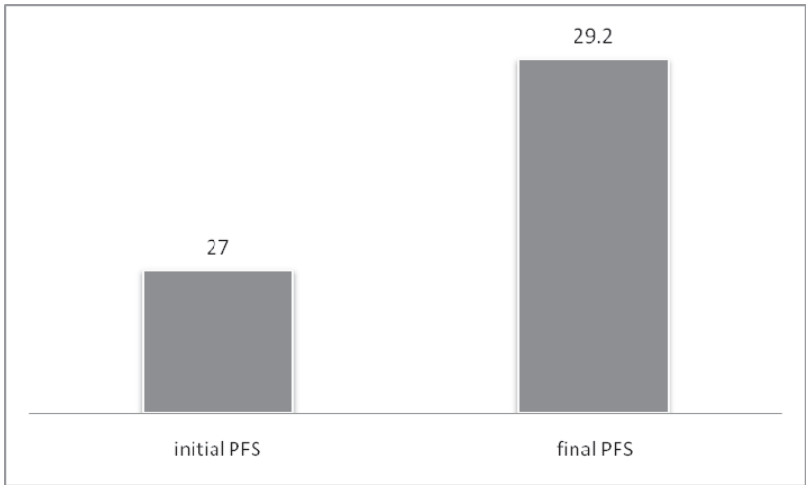



## Conclusions

A scrutiny of the evolution of great gymnasts who have stood out on the arena of the various European, world and Olympics championships allows us to say that a high performance gymnast "model" has been developed. Apart from the extensive technical knowledge, flawlessly put into practice, the pleasant and well-shaped appearance or the properly balanced nervous system, the strong individual, capable of great and very complex efforts in order to respond to the rigors of important competitions, stands out. This research has shown that an optimum correlation between the physical support and the technical objectives, the modification of the systems of action, work methods and methodology, and their adaptation to the age specifics and to the young gymnasts' training level lead to the optimization of the technical training of children within the artistic gymnastics division of "Steaua" No. 3 Sports Club, 4th category (aged eight to eleven). In order to demonstrate the validity and efficiency of the undertaken measures, an evidence and control norms system was applied which sequentially and finally illustrated the reached performance level. The system of evidence and control norms applied was very useful, leading to the proper learning of envisaged skills. The formation of correct

support posture was envisaged, as well as the familiarization with the base mechanism and balance development. Pursuant to the experiment, it can be stated that support development exercises can be regarded as the "key" in men's artistic gymnastics training. The methodological training approach means that the algorithmic methods, scheduled learning and customized training are now essential in training due to the demanded quality level.

**Figure 2-20. Abdomen 2 (Test 3)**




Test 5. Support on grips, moving legs between the arms backwards-forwards (see Figure 2-22 below).

$$M_A = \frac{N_1 + N_2 + N_3 ..... + N_{10}}{10} = \frac{60 + 44 + 32}{10} = \frac{136}{10} = 13.6$$

$$M_A = \frac{N_1 + N_2 + N_3 ..... + N_{10}}{10} = \frac{94 + 67 + 57}{10} = \frac{218}{10} = 21.8$$

## References

Corlaci, I. (2010). *Methods Gymnastics Sporting Disciplines: Artistic Gymnastics*. Bucureşti: Moroşanu.

Cuk, I. & Karacsony, I. (1995). *Pommel Horse Exercises: Methods, Ideas, Curiosities, History*. Ljubljana.

Grigore, V. (2001). *Artistic Gymnastics: Fundamentals of Sports Training*. Bucureşti: Semne.

**Figure 2-21. Travel in support through swings on parallel bars (Test 4)**

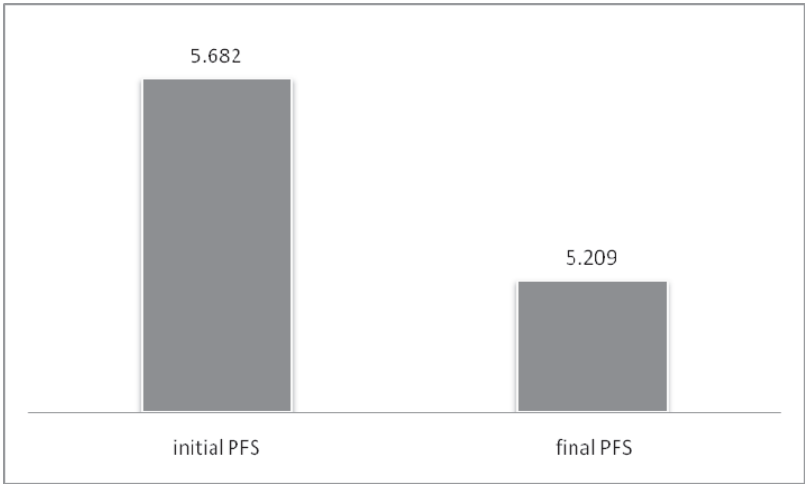
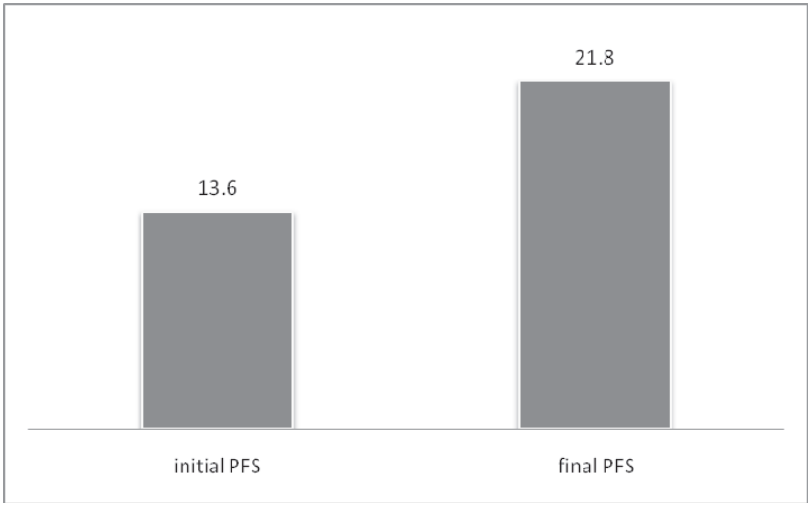



**Figure 2-22. Support on grips, moving legs between the arms backwards-forwards (Test 5)**



# REVIEW OF DANCE SPORT INFLUENCE ON LATERALITY DEVELOPMENT IN JUNIORS I (TWELVE TO THIRTEEN YEARS OLD)

MARIA GRIGORE

## Introduction

> Dance is a form of communication: between you and your body, between you and the other people. It is a non-verbal, spontaneous communication, involving the participation of both consciousness and sub-consciousness, a communication in a relaxed, securing situation, created by music rhythm and the social convention that associates dance with moments of entertainment, of fun.
>
> (Dobrescu 2006)

> Dance sport brings together both physical beauty represented by the expressive movements of dancers in line with the music and spiritual, moral beauty represented by the feelings and emotions that are transmitted through dance.
>
> (Saulea 2005)

According to the studies of Horghidan (2000), the main components of psycho-motricity are: body schema, laterality, ideomotricity, motor intelligence and organization of motor responses.

Regarding the use of the appropriate terminology for coordinative capabilities, Şerbănoiu (2002) makes an overview of the concepts commonly found in experts' analyses, introduced below:

- coordination movement, with reference to changes in positions of body or of its various segments in space and time
- psycho-motor coordination explained by neuro-physiological processes that ensure the performance of movements
- coordination
- coordination skills

- abilities
- coordinative capabilities.

In terms of basic components of psycho-motricity, the child must adjust their body schema as a result of somatic modifications and functional changes. Although the psychology notices that the body schema reaches maturity around the age of twelve, it is known that changes of this type also exist after this stage due to the action of conditional factors (Horgidan 2000). Epuran & Stănescu (2011) present the evolution of motricity and the components of psycho-motricity at different ages, out of which we retain aspects related to the onset of puberty in order to know from what level of development to start junior I dancers' training. Mihaiu brings into question the effect of training interruption on dancer's biological and motor potentialities, translated by:

> diminution of the capacity for effort, of motor skills level, of movements accuracy and coordination, of actions smoothness and expressiveness. Given the interdependence of the training components, we consider that the losses of physical training accompany the errors in technical executions and the lack of fluency and plasticity of movements.
>
> (Mihaiu 2010)

From the angle of motor skills review, the coordinative capabilities represent the multi-factorial component of fitness, together with the conditional and intermediate capabilities, as they are the clearest expression of superior nervous segments' importance in the performance of any voluntary motor action. Experts consider that the conditional elements provide the movement contents, while the coordination elements ensure the size of fair distribution, intelligence values and opportunity in motion (Zimmer 1987). In order to determine the types of dance sport training sessions and their influence on the development of psycho-motor skills, the components of dancers' training were analyzed according to Năstase's opinions (2010). Going through the stages of motor skills creation in dance develops the ideo-motricity and coordinative capabilities, due to the complexity of motor actions that must be executed simultaneously in different planes and directions. The inter-segmentary coordination, ambidexterity, space-time orientation, and the capacity to assess the distance and movement directions condition the technical executions and they improve as a consequence of the application of technical training means (Năstase 2010). The purpose of the research was to establish some categories of diversified exercises meant to positively

influence dancer's psychomotor skills; to establish the optimum share of the means of training capacities development within the structure of preparation session; to identify the structure of juniors I sports training that can enable the application of psychomotor training specific sequences whose effects complete dancer's motor repertoire and contribute to the increase of technical accuracy and difficulty, of the artistic value of executions in competitions and the kinesthetic sense.

We assume that the laterality will become effective if we create diversified programs of exercises meant to positively influence dancer's psychomotor skills. The research methods used were:

- Study of specialized literature
- Direct and indirect observation
- Experimental method
- Method of evaluation by measurements and tests
- Statistical-mathematical method
- Graphic method.

## Organizing and conducting the research

For validating or invalidating the research hypothesis, two groups of subjects were established—an experimental group and a control, each consisting of twelve subjects, aged twelve to thirteen (see Tables 2-8 and 2-9, and Figure 2-18 below). All subjects are members of the "Step in Two" Sports Club. The experiment was conducted for one year between February 2011 and February 2012.

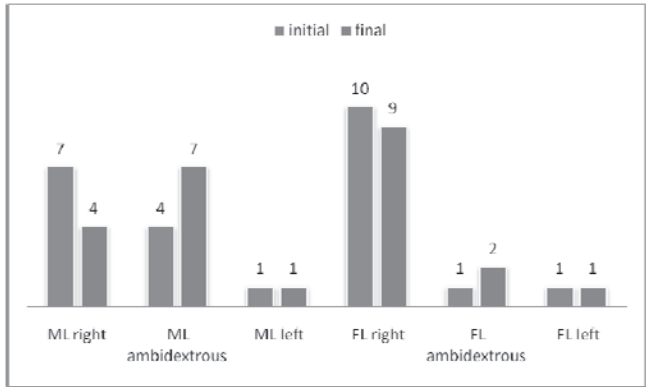
**Table 2-8. Laterality psycho-motor factors of the control group**

| Categories of psycho-motor training factors | | Control group | | | | Difference (%) |
|---|---|---|---|---|---|---|
| | | Initial results | | Final results | | |
| | | Indicator | % | Indicator | % | |
| Manual laterality | right | 8 | 66.67 | 7 | 58.33 | -8.34 |
| | ambidextrous | 3 | 25 | 4 | 33.33 | +8.33 |
| | left | 1 | 8.33 | 1 | 8.33 | 0 |
| Floor laterality | right | 10 | 83.33 | 10 | 83.33 | 0 |
| | ambidextrous | 1 | 8.33 | 1 | 8.33 | 0 |
| | left | 1 | 8.33 | 1 | 8.33 | 0 |

**Table 2-9. Psycho-motor factors in the achievement of laterality factors**

| Categories of psycho-motor training factors | | Experimental group | | | | Difference (%) |
|---|---|---|---|---|---|---|
| | | Initial results | | Final results | | |
| | | Indicator | % | Indicator | % | |
| Manual laterality | right | 7 | 58.33 | 4 | 33.33 | -25 |
| | ambidextrous | 4 | 33.33 | 7 | 58.33 | +25 |
| | left | 1 | 8.33 | 1 | 8.33 | 0 |
| Floor laterality | right | 10 | 83.33 | 9 | 75 | -8.33 |
| | ambidextrous | 1 | 8.33 | 2 | 16.67 | +8.34 |
| | left | 1 | 8.33 | 1 | 8.33 | 0 |

**Figure 2-23. Psycho-motor factors share in the achievement of laterality factors of the control group and the experimental group, for the two tests**




The testing of manual laterality revealed that there are differences between the subjects of the control group and of the experimental group in terms of the percentage of right-handed and ambidextrous subjects. The initial comparison showed that the control group included 66.67% right-handed persons while the experimental group had 58.33%; there is a difference of -8.34 between the two groups of subjects. The ambidextrous use of hands had a share of 25% in the control group and 33.33% in the experimental group, a difference of +8.33 respectively. There is a relatively high homogeneity of the two groups of subjects at the initial testing because there are small differences between right-handed and ambidextrous subjects. The percentage of left-handed subjects did not change from one testing to the other. At the final test, the right-handed subjects' share

decreased up to 58.33% in the control group and 33.33% in the experimental group, marking a difference of -25% between groups. The ambidextrous subjects were 33.33% in the control group and 58.33% in the experimental group, a fact that indicates a difference of +25% between the two groups. As for the performances of the control group, initially there was a 66.67% preference for executing the motor tasks with the right hand, while a percentage of 58.33% dancers with right manual laterality was recorded finally. The difference of -8.34 between the right-handed persons identified initially and finally is the result of the laterality modification of a subject of this group.

Manual ambidexterity was identified at the beginning of the experiment as the psychomotor skill of 25% of the control group components, and at the end of the experiment recorded a value of 33.33%. Given that the share of left-handed persons in the control group did not change between the two tests, having the value of 8.33 and the calculated difference was equal to 0, we are entitled to consider that one of the right-handed subjects showed a predilection for using both hands equally when it came to solve the motor tasks designed especially for this purpose and could be classified as belonging to the ambidextrous category. The difference of +8.33 between the shares of ambidextrous subjects at the two tests proves that the manual laterality of the control group has been positively influenced by traditional dance sport training means, but in a reduced manner compared with the experimental group. In terms of performances of the experimental group, initially there were 58.33% preferences for executing the motor tasks to the right, while finally it recorded a percentage of 33.33% dancers who expressed the predilection to make the given task to the right. The difference of -25 between the right-handed dancers identified initially and finally is the result of laterality modification of several subjects belonging to this group.

Manual ambidexterity had been identified at the beginning of the experiment as the psychomotor skill proved by 33.33% of the experimental group components, while in the end a value of 58.33% was recorded. Given the fact that the share of left-handed subjects in the experimental group did not change between the two tests, having a value of 8.33 while the calculated difference is equal to 0, we are entitled to consider that several right-handed subjects showed a predilection to use both hands equally when it came to solving the motor tasks, so they could be classified as ambidextrous. The difference of +25 between the shares of ambidextrous subjects at the two tests proves that the experimental group motor tasks in dance sport have been significantly influenced by the

experimental module of development of psychomotor skills and training program attended by junior I dancers throughout the period of experiment.

The testing of floor laterality demonstrated that there are small differences between the results of control group subjects and the experimental group subjects in terms of right-handed, left-handed and ambidextrous persons' percentage. Initially there were no differences between the two groups in terms of achievement of motor tasks with the lower limbs. At the end of the experiment, the number of right-handed subjects of the experimental group dropped to 75%, a difference of -8.33 related to the control group. The ambidextrous subjects were 16.67% in the experimental group, with 8.34% more than the control group for which it was recorded the same value as in the initial testing, namely 8.33%. The percentage of left-handed subjects did not change for any subject from a testing to another. In the control group there were initially 83.33% predilections for achieving the motor tasks with the right foot, a percentage that was repeated during the records from the end of the experiment. The difference between the two tests, equal to 0, between the percentages of the dancers identified with right floor laterality is the proof that this motor skill was preserved throughout the experiment in the case of the control group. Floor ambidextry was identified at the beginning of the experiment as the psychomotor skill of 8.33% of the experimental group components; at the end of the experiment, the same values were recorded. The left-handed share, in terms of floor laterality, also did not change from one test to another for the control group, keeping the value of 8.33. The difference equal to 0, between the shares of ambidextrous subjects in terms of floor laterality at the two tests, proves that the laterality of the experimental group has been positively influenced by the application of the intervention manner meant to develop the capacity to use the right or left foot appropriately when executing motor actions. The training sessions with classic means of preparation in dance sport did not lead to the modification of floor laterality of the subjects included in the control group. Statistical calculations showed that in the experimental group there initially existed 83.33% predilections for performing motor tasks with the right foot; finally a value of 75% dancers with right floor laterality was recorded. The difference between the two tests, equal to 83.33, between the percentages of the dancers identified with right floor laterality, is the result of the influence exerted on the laterality of a subject belonging to this group. Floor ambidextry had been identified at the beginning of the experiment as the psychomotor skill of 8.33% of the experimental group components; the end of the experiment recorded a percentage of 16.67%. Given that the share of left-handed subjects in the

experimental group did not change between the two tests, having a value of 8.33, while the calculated difference is equal to 0, we are entitled to appreciate that several right-handed subjects showed a predilection for using both feet equally when it came to solving the motor tasks especially designed for this purpose, and they could be classified as ambidextrous. The difference of +8.33 between the two tests of the ambidextrous subjects in terms of floor laterality proved that the laterality of the experimental group has been positively influenced by the application of the intervention method.

## Conclusions

1. The changes recorded in terms of manual laterality especially, but also floor laterality, in the case of the dancers of both experimental and control groups, demonstrate the dance influence on the development of the laterality of Juniors I (twelve to thirteen years old) and argue for the efficiency of the experimental module of intervention for the development of psychomotor skills.
2. The progress of the experimental group regarding manual laterality is due to the exercises created especially to influence the neuro-motor control of upper limbs, dance exercises called "frames" (position specific to standard dances) in which arm-actions are limited. Thus, all motor tasks to be performed in this way lead to a greater facility to manifest ambidexterity in passing easily from a natural position to a non-specific or an unusual position in dance.
3. The fact that floor laterality improved to a lesser extent than the manual one can be explained by the existence of a single influence exerted on feet, namely the performance of the choreography steps reversing roles between partners (the boy dances girl's steps and the partner executes the boy's steps).
4. Movements fluency, the technical accuracy of dance steps and figures, the plasticity and form of the gestures specific to dance sport require a use without hesitation of the segments, especially of hands and legs. On the dance floor, the dancer is forced to step with the right or the left foot depending on the available space, the choreography, and their partner's movement; thus the dancer finds themself in the situation to change their hold frequently, and to trigger their partner's actions with the right or left hand, for which reason we state that the execution requires ambidexterity.
5. We are able to conclude that the identification of some correlations of the eleven to twelve year old dancers' psychomotor skills indicates

the development of these motor skills in system, in the case of the experimental group, as a consequence of the application of the training program especially designed for this purpose.

## References

Dobrescu, T. (2006). *Dimensiuni ale comunicării prin limbajul corpului* [Dimensions of Communication through Body Language]. Iaşi: Tehnopres.

Epuran, M. & Stănescu, M. (2011). *Învăţarea motrică—aplicaţii în activităţi corporale* [Motor Learning: Applications in Body Activities]. Bucureşti: Discobolul.

Horghidan, V. (2000). *Problematica psihomotricităţii* [Psychomotricity]. Bucureşti: Globus.

Mihaiu, C. (2010). *Contribuţia dansului sportiv la creşterea motivaţiei de realizare şi îmbunătăţire a imaginii de sine* [Contribution of Dance Sport to the Increase of the Motivation for Achievement and Self-Image Improvement]. PhD Thesis, UNEFS, Bucureşti.

Năstase, D. V. (2010). *Dansul sportiv. Curs pentru specializare 1* [Dance Sport. Specialization Course 1]. Piteşti: Editura Universităţii din Piteşti.

Saulea, D. (2005). *Relaţia Dans sportiv—capacităţile coordinative în învăţământul universitar de neprofil* [Relation of Dance Sport—Coordinative Skills in Non-Specialized University Education]. PhD Thesis. Bucharest: ANEFS.

Şerbănoiu, S. (2002) *Capacităţile coordinative în sportul de performanţă.* [Coordinative Capacities in Performance Sport]. Bucureşti: AFIR.

Zimmer, M. (1987). Despre structura calităţilor de coordonare şi posibilitatea înţelegerii lor [About the Structure of Coordination Skills and the Possibility of their Understanding]. *Performance Sport* 268: 35–39.

# THE ROLE OF THE STATIONARY BIKE AND THE TREADMILL IN CARDIORESPIRATORY ENDURANCE OPTIMIZATION AND BODY COMPOSITION MODELLING

CLAUDIU-VICTOR HORTOPAN
AND LAURENŢIU-DANIEL TICALĂ

## Introduction

The approached topic refers to the improvement of both the cardio-respiratory endurance and the body composition modelling in overweight females employed as economists, by using the stationary bike and the treadmill.

Aerobic fitness represents a person's capacity to take in oxygen through the lungs, which is then transported by means of the circulatory system to the muscles where it will be used to oxidize the carbohydrates and the lipids for energy production (Damian 2006, 128).

The body composition measurement provides indications about the practiced sport and health norms. A periodical evaluation should be made every six months to a year to accurately appreciate the evolution of the different body compartments (identification of the fat and lean mass loss or the fat mass increase) (Cordun 2011, 103).

This chapter aims at presenting some training programs meant to optimize the cardio-respiratory activity and the body composition modelling. The hypothesis is that the training individualization contributes to the optimization of cardio-respiratory endurance and body composition modelling. The research methods are:

- The test method (Astrand-Rhyming index, James index, a formula modified in 2004).
- The statistical-mathematical indicators: central tendency indicators, arithmetical mean, dispersion indicators, standard deviation and the

coefficient of variability, while for the data association intensity, we used the Pearson coefficient of correlation.
- The simple ANOVA (ANalysis Of VAriance) method, which is part of the variation and co-variation group of methods.
- Graphical representation.

**Content of the Experiment**

The research, conducted between March 15, 2010 and March 13, 2011 (forty-seven weeks) at the Oxygen Club fitness gym, started with the initial testing followed by forty-seven weeks of training, according to the schedule and ended with the final testing.

The research included thirty female subjects aged thirty-one to forty with a sedentary professional activity—economists. Subjects were divided into two work groups, the control and the experimental groups, which were relatively homogeneous from the age point of view. The tested subjects were healthy, were non-smokers and had not practiced physical exercises in the previous two years. The training methods used were: continuous or uniform effort (steady-state) and aerobic (cardio-respiratory).

The means used for the cardio-respiratory endurance development and body composition modelling were the following:

- Continuous pedalling by keeping the speed constant (learning the control keys on the electronic panel and getting accustomed to the bike).
- Continuous pedalling by monitoring the heart rate between 60 and 70% of the maximum heart potential.
- Continuous pedalling by monitoring the heart rate between 70 and 80% of the maximum heart potential.
- Continuous pedalling by monitoring the heart rate between 80 and 90% of the maximum heart potential.
- Continuous pedalling by monitoring the heart rate between 60 and 80% of the maximum heart potential.
- Continuous pedalling by monitoring the heart rate between 70 and 90% of the maximum heart potential.
- Continuous pedalling by monitoring the heart rate between 60 and 90% of the maximum heart potential.
- Continuous pedalling by monitoring the heart rate between 75 and 90% of the maximum heart potential.
- Continuous treadmill walking without elevation (learning the control keys on the electronic panel and getting accustomed to the treadmill).

- Continuous treadmill walking with and without elevation, by monitoring the heart rate that should be between 60 and 70% of the heart maximum potential.
- Continuous treadmill walking with and without elevation, by monitoring the heart rate that should be between 70 and 80% of the heart maximum potential.
- Continuous treadmill walking with and without elevation, by monitoring the heart rate that should be between 80 and 90% of the heart maximum potential.
- Continuous treadmill walking with and without elevation, by monitoring the heart rate that should be between 60 and 80% of the heart maximum potential.
- Continuous treadmill walking with and without elevation, by monitoring the heart rate that should be between 70 and 90% of the heart maximum potential.
- Continuous treadmill walking with and without elevation, by monitoring the heart rate that should be between 60 and 90% of the heart maximum potential.
- Continuous treadmill flat walking alternating with mild running, by monitoring the heart rate between 60 and 90% of the maximum heart potential.
- Continuous treadmill flat walking alternating with mild running, by monitoring the heart rate between 75 and 90% of the maximum heart potential.
- Continuous treadmill flat walking alternating with mild running, by monitoring the heart rate between 75 and 90% of the maximum heart potential.
- Mild treadmill flat running, by monitoring the heart rate between 60 and 80% of the maximum heart potential.
- Mild treadmill flat running, by monitoring the heart rate between 60 and 90% of the maximum heart potential.

Both devices (stationary bike and treadmill) were used for 30 to 65 minute training sessions.

## Results

The aerobic capacity was calculated by means of the Astrand-Rhyming index relying on the relationship between heart rate and $VO_{2max}$.

The obtained results show that, in the initial testing, both groups present almost similar mean values: 2473.33 ml/min control group, 2620.00 ml/min experimental group, except for the subjects Z.D., B.L. and V.L. (from the experimental group), who registered values slightly better than the others.

Differences between the means obtained by the control group subjects in the initial and final tests are small, being 565.00 ml/min, compared to the results obtained by the experimental group subjects, in the same two tests, at 1386.68 ml/min.

Differences between the means obtained by the two groups in the final testing show that the experimental group had clearly better results at 968.35ml/min.

As for the body composition, calculated by using the James formula modified in 2004, the obtained results show that, in the initial testing, both groups present almost similar mean value—James index 51.53 for the control group and 52.24 for the experimental group.

Differences between the means obtained by the control group subjects in the initial and final tests are small at 2.01, as compared to the results obtained by the experimental group subjects, in the same two tests at 6.39 Kg.

Differences between the means obtained by both of the groups in the final testing show that the experimental group results are better at 3.6 Kg.

## Data Analysis and Interpretation

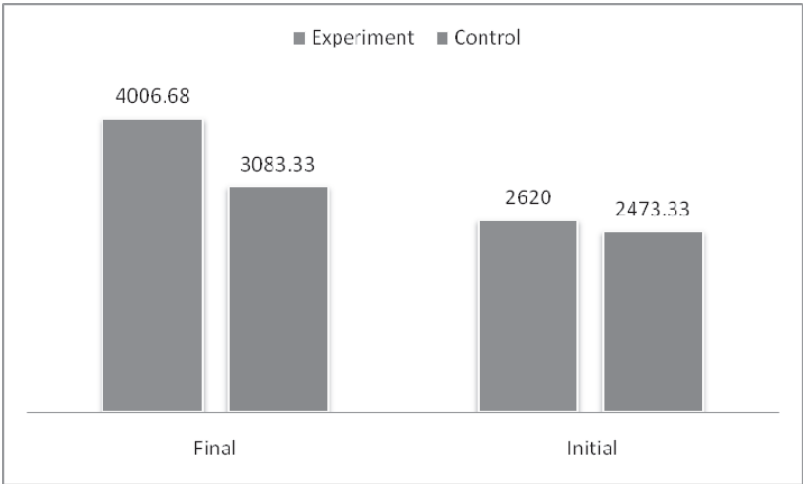
The Astrand-Rhyming index results, statistically processed by means of the simple ANOVA (ANalysis Of VAriance) method, are presented in Figure 2-24 and Table 2-10 below (corresponding to the graph), emphasizing the following aspects:

- The arithmetical means obtained by both of the groups (control and experimental) in the initial testing show almost similar values.
- In both of the tests, $C_v < 10\%$ indicates a great homogeneity for the two investigated groups.
- In the final testing administered to both of the groups, the value ratio between F and critical F shows significant differences between the two groups.

In this case, F > critical F, which means that the work hypothesis is accepted, the result being significant from the statistical point of view.

We mention that the result of statistical processing for the Astrand-Rhyming index, where F = 28.29 and critical F = 4.20, determines a P < 0.05, validate the hypothesis according to which the training individualization contributes to the cardio-respiratory endurance optimization.

**Figure 2-24. Astrand-Rhyming index, value arithmetical mean, control and experimental groups (ml/min)**




The James index results, statistically processed by means of the simple ANOVA (ANalysis Of VAriance) method, are presented in Figure 2-25 and Table 2 below (corresponding to the graph), emphasizing the following aspects:

- The arithmetical means obtained by both of the groups (control and experimental) in the initial testing show almost similar values.
- In both of the tests, $C_v < 10\%$ indicates a great homogeneity for the two investigated groups.
- In the final testing administered to both groups, the value ratio between F and critical F shows significant differences between the two groups.

**Table 2-10. Astrand-Rhyming index results**

| Groups | Number of Subjects | Sum | Arithmetical mean | $C_v$ | | |
|---|---|---|---|---|---|---|
| Control group | 15 | 46250 | 3083.33 | 0.12% | | |
| Experimental group | 15 | 60100 | 4006.68 | 1.37% | | |
| ANOVA | | | | | | |
| | *SS* | *Df* | *MS* | *F* | *P* | *Crit. F* |
| | 6394083.33 | 1 | 6394083.33 | 28.29 | <0.05 | 4.20 |
| | 6327666.67 | 28 | 225988.10 | | | |
| Total | 12721750.00 | 29 | | | | |

In this case, F > critical F, which means that the work hypothesis is accepted, the result being significant from the statistical point of view.

We mention that the result statistical processing for the James index, where F = 33.06 and critical F = 4.20, determines a P < 0.05, these results validating the hypothesis according to which the training individualization contributes to body composition modelling.

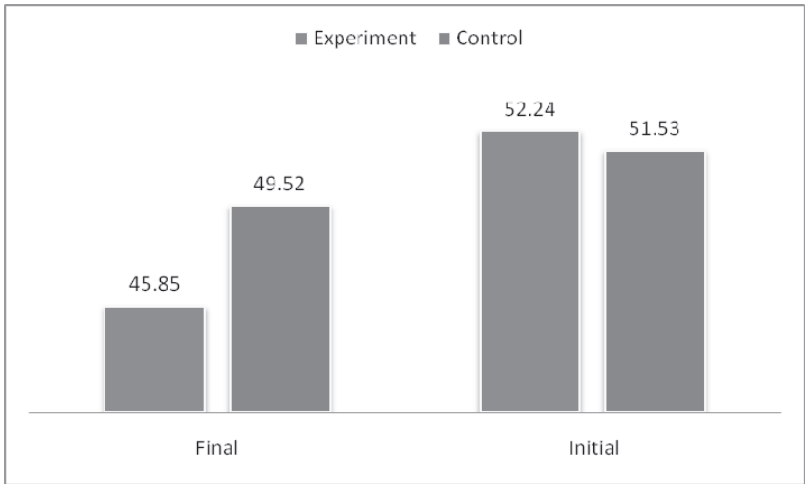
**Table 2-11. James index results**

| Groups | Number of subjects | Sum | Arithmetical mean | $C_v$ | | |
|---|---|---|---|---|---|---|
| Control group | 15 | 742.75 | 49.52 | 3.69% | | |
| Experiment group | 15 | 687.73 | 45.85 | 3.62% | | |
| ANOVA | | | | | | |
| | *SS* | *df* | *MS* | *F* | *P* | *Crit. F* |
| | 100.91 | 1 | 100.91 | 33.06 | <0.05 | 4.20 |
| | 85.46 | 28 | 3.05 | | | |
| Total | 186.37 | 29 | | | | |

## Conclusions

- Concerning cardio-respiratory endurance and body composition, the hypothesis according to which the training individualization contributes to the optimization of both the cardio-respiratory endurance and the body composition modelling is validated.
- Differences between the results obtained by the control group subjects in both tests (initial and final) are not spectacular compared to the differences between the results obtained by the experimental group subjects, and we think that this fact is determined by the training programs administered to the experimental group during the research period.

**Figure 2-25. Body composition, James index, arithmetical mean in control and experimental groups (MNG (kg))**




## Recommendations

- In the first part of the training process, we should use the stationary bike to protect the body joints.
- The stationary bike and the treadmill utilized three times a week determine an improvement of the cardio-respiratory endurance indices and the body composition efficient modelling.
- The treadmill represents an alternative to walking and jogging in the open, when the weather is not favourable or for other reasons.
- In order to succeed in improving the cardio-respiratory endurance and efficient body composition modelling, stationary bike and treadmill training should be corroborated with the conditioning training (for muscular endurance development).

## References

Bompa, T. (2002). *Teoria şi metodica antrenamentului—Periodizare* [Theory and Methodology of Training: Periodisation]. Bucureşti: Ex Ponto.

Bota, C. (2002). *Fiziologie generală. Aplicaţii la efortul fizic* [General Physiology: Applications to Physical Effort]. Bucureşti: Ed. Medicală.

Cordun, M. (2011). *Bioenergetică şi ergometrie în sport* [Bioenergetics and Ergometry in Sport]. Bucureşti: CD PRESS.

Damian, S. (2006). *Super FIT. Esenţialul în fitness şi culturism* [Super FIT: Fundamentals in Fitness and Bodybuilding]. Bucureşti: Corint.

Dragnea, A. & Teodorescu, S. (2002). *Teoria sportului* [Theory of Sport]. Bucureşti: FEST.

Manno, R. (1996). *Les bases de l'entraînement sportif* [Fundamentals of Spoprts Training]. Bucureşti: E.D.P.

# PRIORITIES AND PERSPECTIVES OF SCIENCE, HUMAN EXCELLENCE AND UNIVERSITY SPORTS SOCIETY IN SUPPORTING SCIENTIFIC RESEARCH

IOAN-ION LADOR AND TATIANA DOBRESCU

## Introduction

The Science, Human Excellence, and University Sports Society (SHEUSS) of Romania is an academic Non-Government Organization (created through a Court Order); professional, non-lucrative, autonomous, non-profit, and apolitical, it was founded on the belief that Romanian society should be based on a more profound knowledge of scientific research, communication, publishing and top athletic performance. The Society was created to stimulate research investigations through its dominant components, focused on science, human excellence and top athletic performance, through interdisciplinary approaches, different theoretical and methodological perspectives, pertaining to biological, physiological, psychological, pedagogical, anthropological, sociological, linguistic, ethical, ecological concepts (Lador 2011).

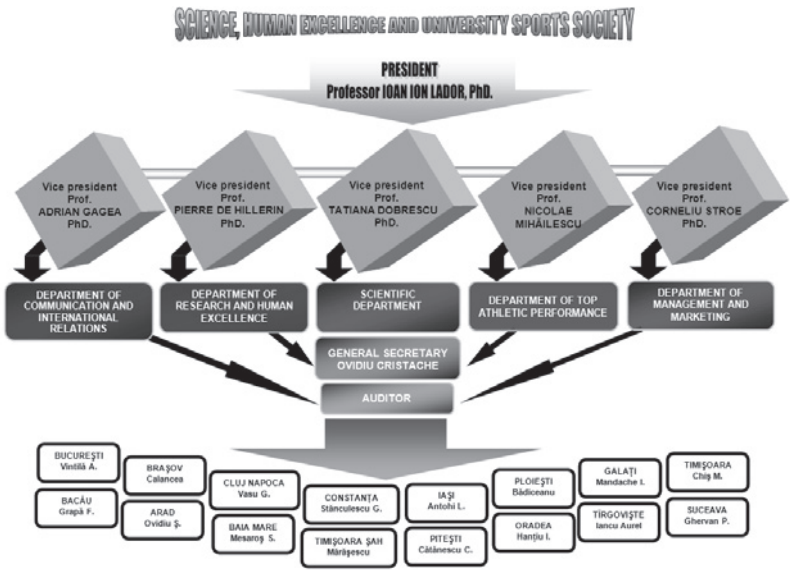
Research, development and innovation are political priorities in the European Union and in Romania. We are aware of the fact that both the identity of a society based on knowledge, realization of macro-social development policies, and top athletic performance are dependent on the effectiveness of scientific research, the only thing that can generate new knowledge.

In this context, SHEUSS invites us to reflect, inform ourselves, study, and publish scientific researches, a basis for any top athletic performance. Systemically, it is configured as in Figure 2-26 below.

SHEUSS is based on the concept referring to excellence as a concise expression of quality, top performance, and of high values in general. In our opinion, the concept of human excellence comes from a transformation and evolution through exigency of the old Latin saying *mens sana in*

*corpore sano* into "excellence in mind and body." What we want to say is that human excellence, in simple words, is an association and harmonious manifestation of mental and physical skills, of certain attitudes and aptitudes, and of human talent taken as a whole. In this, mental skills such as intelligence and knowledge, and physical skills such as motor skills for sports are the most obvious, while the spiritual, moral, and emotional traits are harder to observe, but certainly should not be excluded. When talking about intelligence, we also have in mind at least three of its ingredients: memory, attention, and creativity (Lador et al. 2011).

**Figure 2-26. Diagram of the Science, Human Excellence and University Sports Society**




## Material and Method

In the harmonization of the educational system to EU standards, national mechanisms have been created which include performance management and reform requiring a fundamental area of science, physical education and sport. Strengthening of the fundamental domain-specific system has been imposed promoting new national concepts of assessment focused on excellence and scientific competition (Lador 2010).

It is well-known that human performance lies at the bottom of excellence in the scientific fields involved in the research itself and that the passage from performance to professionalism can be achieved only by competition. We believe that the performance achieved during the last decade and proved through the results achieved in the fundamental field of science of Physical Education and Sports (F.F.S.P.E.S) entitles us to suggest the promotion from the present state of performance to the concept of excellence in physical education and sports (Lador 2008).

In scientific activity, the need for excellence is focused on two components; the first refers to communication, meaning sessions, conferences, congresses, etc., and the second is focused on publishing books, textbooks, treatises, monographs, and courses assessed on the national and international level by scientific competition (Lador 2009).

In this study, we started from the hypothesis stating that the identification of the components of a managerial analysis focused on the scientific research in Physical Education and Sports would facilitate the elaboration of a strategic program by the SHEUSS for implementing the concepts of excellence and scientific competition in this field.

For the elaboration of a strategic program, the study pertaining to it was based on the SWOT management analysis on the level of academic environment in P.E.S. In the presentation, we intended to reference to two component parts of the SWOT management analysis, both strong points and opportunities, as well as the purpose of the study.

Strengths:

- Scientific university research is a fundamental component, having a major contribution to completing the work of education of the younger generation.
- The results obtained in scientific research are an important indicator of quality of university and its funding criteria.
- Evaluation performance level of scientific research, also called performance criteria, is based on a specific methodology.
- Promotion and dissemination of interdisciplinary research on improving the methodology of sports training, participation in competitions, and the restoration and recovery of athletes in the national and international scientific events.
- The reform of the PESF and the P.E.S. teaching boards, the necessity of their orientation towards research, and the didactic activities and innovative specialized services oriented towards the community.

- The transformation of the PESF and the P.E.S. Teaching boards into a structure that attracts talented researchers through the national and/or international programs.

Opportunities*:*

- Integrating the sport sciences and increasing the contribution of scientific research in support of sport performance.
- Some regulations of the educational institutions in the country assess performance with scientific research and sports as an essential component of business and academic community members, providing an important criterion for assessing their performance and professionalism.
- The elaboration of certain strategic objectives, one of the most important being the improvement of research quality within the PEFS,
- Establishing some performance indicators for the research which, being in harmony with the international standards, should lead to excellence in research, to founding excellent research schools.
- The focus on the academic assessment of the ISI, IBD publications*,* of some inventor's license and some innovative services within the PES, which should be implemented in the social and economic environment.
- Establishing a strategic list of topics for research which should involve a certain degree of interdisciplinary.
- Identification of the fields of excellence, the schools of science and the schools of excellence in research with trends on European and international level that, on long term, could ensure the competitive aspect.

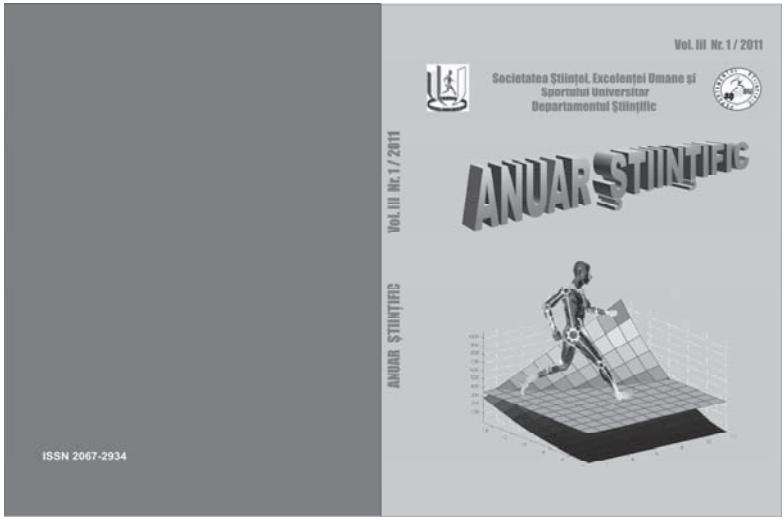
## Results and Discussions

The goals of the study as strategic suggestions constitute priorities for the SHEUSS, as follows:

- The elaboration, on the national level of a Calendar of national scientific events and a Rulebook for scientific competitions, in compliance with the provisions of the legislation in use on national and international level ;
- Creating the organizational framework for conducting the scientific competition at an institutional level;

- Ensuring an optimal research infrastructure on an international level that should lead to excellence through high results, which should be published in specialized magazines
- Founding Excellence Research Schools.
- Introducing the concept of scientific competition in the organization of the National Forum as final competition is another step of the research towards excellence, also achieved through the elaboration and advertising of the volume *Anuar Ştiinţific* ("Scientific Yearbook") (see Figure 2-27 below) and the journal *Science, Excellence, Sport* (see Figure 2-28 below) in which the results of the best pieces of work in the Romanian academic environment are published.

**Figure 2-27. The volume *Anuar Ştiinţific* ("Scientific Yearbook")**




The SHEUSS offers consultancy for communication activities focused on scientific competition (studies and researches presented during sessions, conferences, congresses) and consultancy for publishing activity (textbooks, books, treaties, monographs, etc.) (see Figure 2-29 below)

SHEUSS aims to consult, promote, and support the editing and publishing of scientific papers of a high scientific level, or that can have a high social and professional impact (Gagea 2011).

**Figure 2-28. The journal *Science, Excellence, Sport***

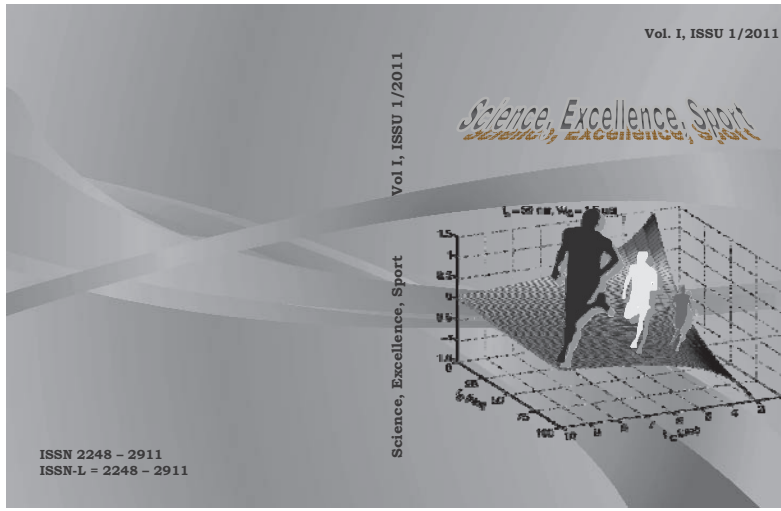
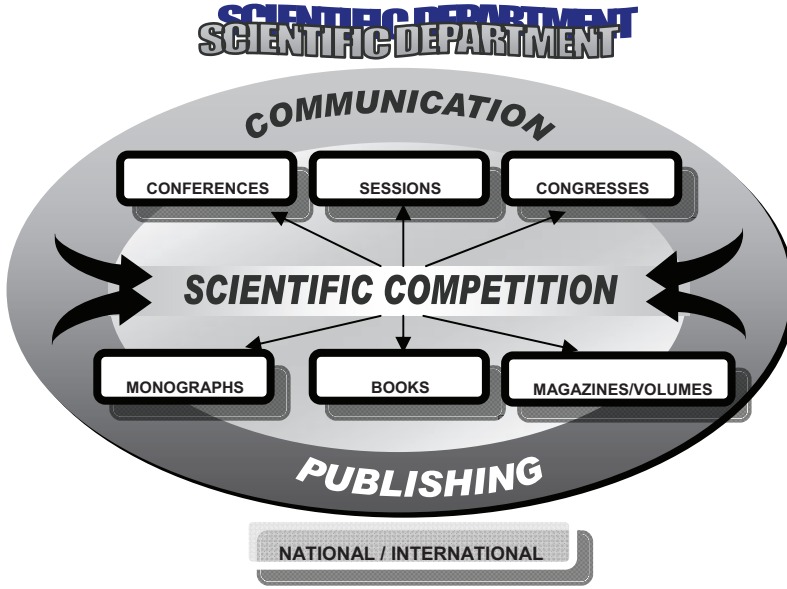



**Figure 2-29. Diagram of the scientific department**



What our Society tries to do is consolidate in our country the internationally accepted academic criteria, eliminate randomness, and diminish the importance of quantity over quality. Without a doubt, getting published by a prestigious publishing house or periodicals that are indexed in international databases offers "international visibility," and being quoted offers a prescriptive or constructive "criticism," and therefore guarantees a certain level of quality through the exigency of the reviewers, and the number of this kind of publications expresses the amplitude of preoccupations for publishing, and indirectly, for scientific research. (Gagea et al. 2010) We also support the use of international scientific community criteria, the synthesis of current knowledge about the approached subject, and personal contribution, in the sense of novelty and progress. We allowed ourselves, however, to add certain aspects that are specific to our field such as the fact that applying the new knowledge, and the verified results from reliable studies, has priority over publishing. From this point of view, we must take into account the urgent needs, the specific and local problems that need scientific solutions (Lador et al. 2011). The SHEUSS offers guarantees of neutrality and objectivity to the people who want to challenge their research. One of the procedures is based on competition, in which the hierarchy of values is established by a board of experts competent in the matter at hand. The problem of assessment remains open; firstly, it is about selecting for recommendation and supporting for publication the most valuable papers accepted by the competition. Secondly, alongside the internationally accepted criteria, the synthesis of the current specialized literature (assessing the current level of knowledge), and the personal contributions, in the sense of novelty and progress, there are also specific criteria as mentioned above (ibid.)

## Conclusions

The research focused on excellence as a desideratum which, once implemented in the fundamental field of Science Physical Education and Sports, reinforces and brings stability and performance focused on professionalism and competition for the Romanian educational system. It was scientifically proven that human performance, which supports the education-research-sports performance trend, leads to excellence. The implementation of this strategic program ensures the turning of performance from education-research-sport into a branch aimed towards excellence in the fundamental field of physical education and sports. Specific conclusions drawn in prior research confirm that applying the news concept of excellence and scientific competition will allow one

ranking and promotion of values specific to our basic education system. We appreciate that the news concept provides a domain specific educational system, its scientific resources strengthening and promoting the benefit system and personal interest, institutional and general system in Romania. In the end, we conclude that by promoting the concept of excellence and scientific competition we will bring about a great contribution to the social and economic development of Romania.

## References

Gagea, A. (2011). *Tratat de cercetare ştiinţifică în educaţie fizică şi sport* [Treatise of Scientific Research in Physical Education and Sport]. Bucureşti: Discobolul.

Gagea, A., Marinescu, Gh., Cordun, M., Gagea, G., Szabo, G. & Păunescu, M. (2010). "Recreational Sport Culture in Romania and some European Countries." *Revista de Cercetare şi Intervenţie Socială* 31: 54–63.

Lador, I. (2008). "Orientări strategice în asigurarea calităţii managementului academic, centrat pe construcţia socio-economică a României, în domeniul fundamental de ştiinţe EFS" ["Strategic Trends in Academic Management Quality Assurance: Romania's Socio-Economic Construction in the PES Fundamental Domain"]. *Gymnasium* X (1): 5–14.

—. (2009). "Conceptul naţional de evaluare şi recunoaştere profesională prin competiţie ştiinţifică, în domeniul fundamental educaţie fizică şi sport" ["National Concept of Professional Evaluation and Accreditation through Scientific Competition in the Fundamental Domain Physical Education and Sport"]. *Anuar Ştiinţific* I (1): 6–12.

—. (2010). "Tendinţe în cercetarea focalizată pe excelenţă în domeniul fundamental de ştiinţe EFS" ["Trends in Research Focused on Fundamental Domain PES"]. *Anuar Ştiinţific* II (1): 5–11.

—. (2011). "A new concept for the sustainability of the Romanian education system through the Science, Human Excellence, and University Sports Society." *Science, Excellence, Sport* I (1): 7–19.

Lador, I. Gagea, A., Joseph de Hillerin P., Dobrescu, T., Mihăilescu, N. & Stroe, A. (2011). "Research, Communication and Publishing through the Science, Human Excellence and University Sports Society." *Science, Excellence, Sport* I (1): 19–34.

# FUNCTIONAL RECOVERY FEATURES IN CHILDREN WITH SPASTIC PARAPARESIS

VASILE MARCU, DANA NECULA AND EMILIA-GEORGIANA TUDORAN

## Introduction

Spastic paraparesis is a form of cerebral palsy representing a chronic posture and movement disorder caused by central nervous system lesions. This engenders a group of non-progressive chronic neurological disorders influenced by the growth and development process, characterized by an inadequate control of mobility and posture due to central nervous system damage produced during prenatal, pregnancy or the perinatal period.

The present work proposes the study of ways to prevent the unwanted side effects of incorrectly learned walking, namely spastic paraparesis, in which the lower limbs of a child present the following symptoms: curved hips (which determines their characteristic shearing) may present either an exaggerate extension or a characteristic genu flexum, and the adduction and internal rotation of the hips will lead gradually also an external rotation of the shanks. The equine leg may also be joined by other deviations too. Harrow's taxonomy has six levels in the psychomotor domain of voluntary human movement that can be observed belonging to the acquisition domain:

- Reflex movements medullar, intersegmental, suprasegmental reflexes.
- Fundamental movements inborn engrams and motor scheme movements of locomotion, prehension or manipulation, dexterity.
- Perceptive skills kinaesthesia discrimination-lateralization, symmetry-visual discrimination, visual memory, perceptive persistence, auditory and tactile discrimination.
- Physical qualities.
- Dexterity movement.
- Nonverbal communication.

The movement technique contains engram, patterns and elements—the moment, the phase or period—parts of movement, the genesis of the movement, the physiological content and forms of the movement-reflex instinctive, hereditary movements, and voluntary movements (Marcu 1997).

The goal of this work is to present the stages of spastic paraparesis recovery through the correct alignment of the pelvis and obtaining a normal tone of its muscles as well as of the lower limbs so that the pattern of neuro-motor development should be learned correctly.

We analyzed 180 children, diagnosed with paraparesis, aged between one and eighteen.

The analysis achieved within the present work concerning the importance of the correct pelvis alignment and the acquirement of a normal tone of the lower limbs and pelvis muscles allows the issue of some final conclusions, which may be synthesized, such as:

- Effective decontracturation of spastic muscles, which should allow the involved muscles in effecting anatomical movements.
- The intermediary stages, standing on the knees and in the knight position, respecting the presented principles, which lead to the correct alignment of the pelvis and the lower limbs.
- Orthostatism acquiring and education or re-education of walking, respecting the same alignment principles, thus avoiding incorrect walking.

The general physical therapeutic objectives for the above-mentioned disorders can be grouped as follows (Marcu & Dan 2007):

- Educating and re-educating the posture and body alignment and its segments.
- Educating and rebuilding the corporal scheme, laterality and space orientation.
- Knowing the corporal scheme.
- Development of normal movements in order of their appearance and of importance to the child.
- Changing and annulment of the abnormal posture, reorganizing the correct posture.
- Learning and educating the skill of relaxing in equilibrium after obtaining the correct balanced position with the control of the correct posture all along the movement.

- Educating the balance, the equilibrium after obtaining the correct balanced position with the control of the correct posture along movement.
- Preventing deformities in small children and permanent amelioration in older children.
- Preventing or postponing the surgical procedure using the orthopaedic devices for correct training and the functional angle and optimal stretching of the NMAK apparatus.
- Educating the locomotion of any form and possibility until the independent walk is obtained using walking devices.
- The correct education or re-education of breathing.
- Education of sensibility and proprioception.
- Using the sequential muscular groups in the functional and correct position (Jackson, Field & Neumann 2009).

In the study, we used neuro-proprioceptive relief techniques meant to facilitate the psychomotor skills favourable to neuromuscular development schemes close to the normal one. For children aged nought to three, the accent was on the Bobath technique that allows the physical therapist a gentle and also demanding approach to the child that will help them to acquire the key positions in development (Robănescu 2001).

We also emphasised pressure along the movement axis, respectively the Margaret-Routh technique. Cases of spastic paraparesis in children are common within cerebral palsy since on reaching the motor area of the lower train, the locomotion and body alignment problems become even more complex as a psychomotor skill. Thus, the neuro-proprioceptive relief techniques are appropriate in cases with muscle tone deficiency, postural stability, movement amplitude, coordination, but also muscle strength and endurance through the agony-antagonist muscles, although everything induces the normalization of the alpha motoneurons discharge. All these neuro-proprioceptive relief techniques are subject to four stages of motor control, respectively mobility, stability, controlled mobility and ability, each having specific techniques (Solberg 2008).

Neuro-proprioceptive relief techniques with excited character, respectively slow reverse and slow reverse with opposition, are designed to apply maximum resistance to movement. The result is a concentric contraction of the antagonists of the hypotonic muscle group, with relief effect on the weak agonists:

- Repeated contractions applied according to assessment of the muscle strength, starting with rapid and short stretches of the agonist,

accompanied by verbal commands of the physical therapist to get a cumulative between the voluntary contraction and the effect of myotatic reflex—muscle values 0-1.
- For a muscle that already receives force, the relaxation of the spastic muscle gains strength and also shape, the resistance applied to the movement facilitating the gama system and the primary spindle afferents stimulating additional alpha motoneurons.
- Sequences for strengthening has as a neurophysiologic substratum of irradiation phenomenon triggered by the isometric contraction from the activated motoneurons of strong muscles to the weak.
- Agonistic reversal performed by concentric contractions at all amplitudes is aimed at the increasing of the alpha and gamma motor-neuronal action as a consequence of applied resistance.
- Recreational movement is opposition performed by counter-opposition of the physical therapist on the big movement direction.
- Isometric contraction in the shortened area aims to restore the attention of the neuromuscular spindle of the shortened area.
- Progression with resistance performed by the physical therapist within the locomotion form for an increased attention of the cortical area responsible in its control.

Neuro-proprioceptive relief techniques with inhibitive character:

- Rhythmic rotation in segment axis.
- Relaxation-opposition maximizing the isometric intensity.
- Relaxation-contraction applied only to the antagonist muscle limiting movement.
- Rhythmical stabilization through isometric contractions on the antagonist and agonist muscles in the point that limits the movement to weaken the activity of the alpha motoneurons of the antagonist hypertonic muscles.

Neuro-proprioceptive relief techniques with general character:

- Rhythmical initiation with slow-passive stretching movements for the hypertonic muscle, alternative with those of the hypotonic muscle that receives excitatory influences.
- Alternated isometrics that follow both contraction with the relief of the motoneurons but also position stability through articular receptors of the articular surfaces.

- A sequence that aims to coordinate the components of a movement scheme to establish correct engrams through repetitions.

Facilitating factors include movements aimed at triggering the sensory stimuli that will increase or reduce motor response:

- Proprioceptive elements—stretching, endurance, vibration
- Exteroceptive elements—touch, brushing, paravertebral tapping
- Combined elements—pressure on the tendons
- Telereceptive elements—hearing, sight, smell.

The Kabat Method develops a complex neurological recovery methodology in which the main source of proprioceptive information is strong muscle contraction (Pasztai 2006). The motor control expresses the way the higher cortical floors control and monitor the movement and at the same time how the external environment influences the decisions of the upper nerve floors. Sbenghe (1999), referring to the muscular control, says that it is the ability to activate a limited group of motor units of a single muscle without activating other muscles. Coordination requires a correct contact of the agonist muscle accompanied by the relaxation of the antagonists and contraction of the synergistic and stabilizers. An engram is a neurological organization of a scheme programmed by muscle activity. Body balance is the function that allows human beings to have self-awareness in space and to control themselves. The balance control is provided by three sensory systems: visual, proprioceptive and vestibular. Equilibrium reactions are automatic responses that serve to maintain or regain balance during the realization of positions or movements. Static balance and postural control are made by muscles that contract differently in relation to the head position in space. The body's bipedal position has no passive stability, but changes and adapts constantly through levers that follow biomechanical laws and the weight and the gravity centre swings as given by gravitation.

## Discussion and Results

Starting from the idea that from birth, motor control develops itself in stages corresponding to neuromotor development during the brain surface maturation, the small child will develop some reflexes and motor reactions that will adapt them to the environment. Knowledge of the normal child's neuromotor development is vital for a physical therapist but also for the parent, because brain surface development is dependent on motor experience and the muscular weakness is often a sum in varying degrees of

neurological damage, but also a lack of knowledge through the lack of cognitive experience and the movement. Posture and movement development during the early years ensures balance and interaction, as well as environmental adaptation. The entire study conducted on the activity of 180 children, challenged by superficiality for multiple reasons, in an essential moment of psychomotor nature. Motor control deficiencies create other movement schemes, and the body always adapts its position and balances on neurophysiologic mechanisms, but not necessarily and properly. Central-type spasticity, respectively cerebral palsy, occurs in cerebral motor neurons related to a sensory-motor decontrol and is expressed as a sustained and intermittent involuntary muscle activity. The physical therapy program, in terms of this research, focuses on the comfort of the small patient between nought and three at a rate of 68%. The program was based on the Bobath Method, focusing on:

- Decontractions performed more gently.
- Acquiring the right skills and their awareness through sensory stimulation as well as different perceptions in different environments and circumstances.
- Balance reactions and postural control at each stage of neuromotor development.
- Explanation and assignation of each motor act age adjusted by play and motivation.
- Attention stimulation in every moment of their body and segment perception with mandatory representation in the mirror.
- Each changing of the centre of gravity made possible the transition from tirare to cvadrupedie and bipedal standing are to be performed by a large number of repetitions, but also by a large environmental variation and means/situations.
- Continuous adaptation of the program and its individualization to the personality type of each child.
- Correction of deficiencies in the sagittal plane knee and genurecurvatum genuflexum, deficiencies in the frontal plane and genuvalgum genuvarum.
- The foot deficiencies systematizes into two broad categories related to the modification of the support surface and include flat feet, equine foot, talus foot, hollow foot, longitudinal axis change with abducted foot, addus foot, valgus foot, respectively varus foot.

For children raised in orthostatism but not receiving an appropriate program, the state of bipedal standing compromised by poor alignment

and poor balance, the only option was remodelling. This was difficult in terms of forming deficient body engrams and erroneous habits, the child being eager to move and play. Of the 32%, about 20% managed a realignment of the body, but the process took years and had negative results at the spine level. These children, aged five and over, have always encountered difficulties for various reasons, such as:

- Physical therapy started late.
- Insufficient decontractions at the level of the lower-limb muscles not being given proper importance to the muscle balance of the adductor muscle, internal right, insufficient decontraction of the semitendinous-, semimembranous-biceps femoris and the soleus-gastrocnemious;
- Non-consolidating and lean toning of the pelvic stabilizers muscle.
- Ignoring the importance of the psoas-iliacus muscle.
- Superficial shift from the cvadrupedie to the position and correct movement on the knees.

We might understand that every movement in the case of the child with cerebral palsy requires an objective assessment of balance in terms of qualitative aspects that will facilitate the choice privilege of applying methods of recovery.

## Conclusions and Recommendations

Every child has a moment when their brain realizes that it is ready to move on into the next stage of development, from the psychomotricity point of view. Until that moment, the physical therapist and parent have to prepare them correctly. The present study illustrates the difficult task of the therapist obliged to have a good knowledge of the reactions and child's possibilities with motor deficiency in order to engage them firstly unconsciously and then by their own will and motivation to autonomy.

We would recommend the following:

- Continuous evaluation of muscle values.
- Try to participate in the program from their desire to walk and know themself in order to self-improve.
- Confidence in the high potential of children.

Adjuvant methods have been:

- Infiltration with botulin toxin even at an early age is very useful in somatic developing, given that the cerebral palsy does not worsen, but the physiologically increasing process creates difficulties for the muscle which does not develop in the rhythm of bone elongation.
- Waves shocks.
- Immobilization for ten days in plaster bandages.
- Use of orthoses and imposing a fair position.

## References

Mansfield, P. J. & Neumann, D. A. (2009). *Essentials of Kinesiology for the Physical Therapist Assistant.* London–Amsterdam: Mosby.

Marcu, V. & Dan, Mirela. (Eds.). (2007). *Kinetoterapie/Physiotherapy* [Kinesiotherapy/Physiotherapy]. Oradea: Editura Universităţii din Oradea.

Marcu, V. (1997). *Bazele teoretice şi practice ale exerciţiului fizic in terapia fizică* [Theoretical and Practical Bases of the Physical Exercise in Physical Therapy]. Oradea: Editura Universităţii din Oradea.

Pasztai, Z. (2006). *Rolul stretching-ului muscular în normalizarea funcţiei static-kinetice a sistemului neuro-mio-artro-kinetic la copiii cu disfuncţie musculo-scheletală* [The Role of the Muscular Stretching in Normalizing the Static-kinetic Function of the Neuro-mio-arthro-kinetic System in Children with Musculoskeletal Dysfunction]. Iași: Universitatea "Alexandru Ioan Cuza."

Robănescu, N. (2001). *Reabilitarea neuromotorie* [Neuromotor Rehabilitation]. Bucureşti: Editura Medicală.

Sbenghe, T. (1999). *Bazele teoretice si practice ale terapiei fizice* [Theoretical and Practical Bases of Physical Therapy]. Bucureşti: Editura Medicală.

Solberg, Gill. (2008). *Postural Disorders and Musculoskeletal Dysfunction*: *Diagnosis, Prevention and Treatment.* Philadelphia, PA: Churchill Livingstone.

# PROFILE OF THE PRACTITIONERS OF ENDURANCE SPORTS IN ROMANIA

SIMONA PETRACOVSCHI

## Introduction

In post-communist Romania, new sports practices have emerged and developed according to the current socio-economic and political contexts. If, at the level of government social policies, one can notice weak influences on population and on the practices in the field of physical activities, and the lack of involvement in and inadequacy to the realities and needs of the population, still new forms of sports practices are born, reborn or transformed in the current context. This is also the case for outdoor or nature sports that, besides hiking and trips in the mountains, allow the use of nature as a medium of reference for endurance sports. Outside the urban environment and the limits of the stadium, the individual looks for new forms of testing their limits in full communion with nature.

Andrews (2008, 54) describes physical cultural studies as being: "dedicated to the contextually based understanding of the corporeal practices, discourses, and subjectivities through which active bodies become organized, represented and experienced in relation to the operations of social power." Adopting an interdisciplinary approach, physical cultural studies seek to identify "the role played by physical culture in reproducing, and sometimes challenging, particular class, ethnic, gender, ability, generational, national, racial, and/or sexual norms and differences" (ibid.) In this context, the present study aims to analyse the way in which a new sports practice is born in the current context and who its actors are.

The current problems that physical cultural studies face in Romania require an interdisciplinary approach, so that outdoor activities represent a sector of analysis because of cultural legacy. In the communist era, outdoor activities required, besides hikes and trips, sports orientation as a competitive discipline encouraged and practiced as such since school,

through school sports clubs generally attached to the Children's Palace (a form of organisation of the extracurricular activities in the communist era that still exists today in some cities). The problem of mass sports in communism (Foldesi Szabo 1991), i.e. the low percentage of practitioners because of the mandatory nature that these activities had had (Massiera et al. 2008) and because, in post-communism, the percentage of practitioners is still low (Gfk România 2010) made us analyse the implications of the socio-economic field on current sports practices and question the relationship between occupied statuses within the society and access to sports practices, because the place that they occupy within the society condition the type of relationship that the individual has with their own body and due to whom the new practices will be born. But who are the people that guarantee these new practices?

The purpose of this chapter is to establish the characteristics of the practitioner of endurance sports in Romania, the reasons for practicing them and establishing the most popular endurance sports branches among Romanians.

Social class determines the formation of habits (Bourdieu 1979), and this is incorporated in sports practices. Endurance sports suppose prolonged and sustained efforts, planning and regular participation, with results appearing after a certain amount of time.

## Research Hypothesis

The socio-economic situation in Romania favours the emergence of a new type of sports practices specific to a certain social category that, by occupying time with long training periods, participating in competitions and financing them, generates a new sports branch.

## Material and Method

We applied the questionnaire method to 152 practitioners of endurance sports. We applied a 32-point questionnaire during the "Hercules" Mountain Marathon and Semi-Marathon, which took place in Băile Herculane (Caraş-Severin County, Romania) on May 21, 2011. Of the total number of respondents, 80.21% were male, and the rest (19.79%) were female.

## Discussion

Table 2-12 below shows that the practitioners within the age segment of eighteen to twenty-nine represent a high percentage (35.35%); this is the period that coincides with the building of one's professional life. Furthermore, the period between thirty to thirty-nine is the age of change; this is the best represented segment among practitioners of endurance sports (37.7%).

This is also a period of maturity from a moral and physical point of view; endurance requires physical maturity and they do not recommend practicing it during growth and development, though we should mention that all age segments practice endurance sports.

As regards civil status, 57.29% were married, 39.58% were not married, 3.13% were divorced, 72.92% did not have children, 11.46% had one child, 12.5% had two children, while 3.13% had three children or more. This shows that endurance athletes are mostly bachelors and do not have children; thus, independence and availability are paramount, factors that facilitate training and taking part in competitions. Still, taking into account that the most representative age group is thirty to thirty-nine, a period coinciding with emotional stability (family, children); an inverse ratio can be noticed in the case of endurance athletes: 39.58% were not married and 72.92% did not have children.

**Table 2-12. Ratio of endurance athletes surveyed according to age groups**

| Age group | Percentage |
|---|---|
| 18–29 | 35.36% |
| 30–39 | 37.37% |
| 40–49 | 15.15% |
| >50 | 12.12% |
| **TOTAL** | **100%** |

The educational level of the investigated persons reveals that they are people with a university degree and with jobs for which they had a degree; 53.13% are employees with a university degree, as can be seen in Table 2-13 below.

Data regarding the practicing of a performance sport during childhood or teenage years highlights the fact that 60.42% did not practice such a sport. We might conclude that it is a maturity and complex sport, which

presumes and gives birth to a series of "qualities," a drive that appears during maturity.

The distribution according to the area of origin of endurance athletes shows that 98% of the respondents live in the urban area, and 1.94% live in the rural environment. This can be the result of a number of causes—in the urban area, the concentration of the population is higher, and financial status is higher and facilitates access to competitions; in cities, the high level of stress pushes people to search relaxation in various ways (sports, in our case). Practicing endurance sports is an escape from daily routine, as the majority of group training and contests (mountain marathon, cross-country, triathlon, cycling) takes place in nature, generally in mountain regions, within the category of outdoor activities (see Table 2-13 below).

**Table 2-13. Professional status of people surveyed**

| Job Profession | Percentage |
|---|---|
| Highschool student | 7.29% |
| University student | 8.33% |
| Worker | 5.21% |
| Employee | 4.30% |
| Employee with higher education degree | 53.13% |
| Self employee | 16.67% |
| Pensioner | 1.00% |
| Unemployed | 4.17% |
| **TOTAL** | **100%** |

Table 2-14 indicates that the number of practitioners increases in direct proportion with the size of city; thus, we can say that the highest percentage of practitioners of endurance sports comes from crowded urban areas although the best represented city is Zărneşti (Romania), a small town with 25,000 residents. Zărneşti has a long tradition among endurance sports practitioners because every year this is the starting line of the Piatra Craiului Marathon, the most demanding mountain marathon from Romania and one of the most technical in Europe. Thus, around this contest, there has been emulation in Zărneşti and the runners from this town are constant participants in the national mountain marathon, with satisfactory results.

## Conclusions

Data on the civil status of the respondents presented above show that the profile of the endurance practitioner in Romania is the average-aged man, single, with no children, with a university degree and a profession according to his studies, and who, in childhood or teenage, did not practice performance sports.

Most practitioners of this type of activity come from urban areas (see Table 2-14 below). This could be due to a number of causes—in the urban area, the concentration of the population is higher, the financial status is higher, and it facilitates access to competitions; in cities, the high level of stress pushes people to search for relaxation in various ways (sports, in our case). Practicing endurance sports is an escape from daily routine, as most group training and contests take place in nature, generally in mountainous regions (mountain marathon, cross-country, triathlon, cycling).

**Table 2-14. Most representative cities in Romania in terms of endurance sport practitioners**

| City/Town | Percentage |
|---|---|
| Bucureşti | 42.10% |
| Timişoara | 31.57% |
| Zărneşti | 6.57% |
| Arad | 5.26% |
| Braşov | 3.28% |
| Ploieşti | 1.97% |
| Caransebeş | 1.31% |
| Lugoj | 1.31% |
| Sibiu | 1.31% |
| Reşiţa | 1.31% |
| Giurgiu | 0.65% |
| Târgovişte | 0.65% |
| Predeal | 0.65% |
| Severin | 0.65% |
| Târgu Mureş | 0.65% |
| Miercurea Ciuc | 0.65% |
| **TOTAL** | **100%** |

The option to practice this type of sport is intrinsic. The ambition and will to self-surpass and test one's limits are all traits reflected in personal/professional life, whereby 83% had a university degree and had

the will to self-improve. This opposes European people who choose to run in order to lose weight (54%) while, in the present study, only 4.51% of subjects do it for the same reason.

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## References

Andrews, D. L. (2008). "Kinesiology's inconvenient truth and the physical cultural studies imperative." *Quest* 60 (1): 45-60.

Bourdieu, P. (1979). *Distinction: A Social Critique of the Judgment of Taste.* Cambridge, MA: Harvard University Press.

Foldesi Szabo, G. (1991). "From Mass Sport to the 'Sport for All' Movement in the 'Socialist' Countries in Eastern Europe." *International Review for the Sociology of Sport* 26: 239–257.

*GfK România*. http://www.gfk-ro.com/public_relations/press/multiple_pg/006085/index.ro.html.

Massiera, B., Ionescu, S. & Cernăianu, S. (2008). Etude comparative des pratiques et représentations du sport en Roumanie et en France: les conséquences d'un héritage politique différent [A Comparative Study of the Practices and Representations of Sports in Romania and France: Consequences of a Different Political Heritage]. *Revue d'études comparatives Est-Ouest* 39 (2): 173–200.

# GROUP PERCEPTION OF OVERWEIGHT STUDENTS EXPERIENCED DURING PHYSICAL EDUCATION AND SPORTS CLASS

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## Introduction

According to statistics made public in 2010 by the C. I. Parhon National Institute of Endocrinology, out of five hundred million obese people worldwide, four million come from Romania, and 50% of Romanians (approximately 10,000,000) are overweight. Of these, according to World Health Organisation studies, 20% are obese and 30% are overweight. Equally worrisome is obesity in children. One in four children is overweight or obese. Under these circumstances, Romania ranks 3rd in the EU in terms of frequency of obesity. There are various types of stigmatization and social marginalization of overweight children (Puhl & Lathner 2007), and the psychosocial aspects they have to go through imply an increase in depressive symptoms, lower self-esteem and body image (Davison & Birch 2002; Eisenberg et al. 2003, 2006). Physical activities are recommended for these students with the purpose of losing weight and improving health (Deckelbaum & Williams 2001). However, during physical education classes taken with students that have a normal weight, they suffer mocking and constant attacks about their weight and are marginalized or excluded (Fox & Edmunds 2000; Bauer, Yang & Austin 2004; Faith et al. 2002). Our research focuses on encouraging the students that are marginalized because of their weight to participate in physical activities to be accepted by other students, to integrate themselves and to portray their qualities. During this process, the physical education teacher's role is significant (O'Brian, Hunter & Banks 2007) in designing activities and actions that involve all team members, ensuring that

everyone has a role according to their possibilities. It is essential to study the problems faced by overweight children during physical education classes, their difficulties in taking part and getting involved in the class because they are not the only ones involved in this process. An efficient method for real and spectacular results for the integration of marginalized preteens is movement, under its various forms, done both in physical education class at the school, and especially in extracurricular activities. This is a great opportunity for students to fully express and externalize themselves. The WHO conclusion, through which obesity was acknowledged as a chronic illness in 2005 and declared a global epidemic in 2006, only emphasizes the importance of this issue which is far from being just a physical illness. The overwhelming school curriculum does not emphasize the individual, and through extracurricular activities one can add influences on free expression and the discovery and self-discovery. Physical activity facilitates the connections between students / children and helps group dynamics to focus on tolerance and value through acceptance. Self-esteem and the feeling of competence are developed once accepted in the game by all of the children, regardless of the intellectual level, thus putting camaraderie qualities first. The equal inclusion of all children in physical games, their active participation and the emphasis on all qualities and helping the group adjust to the mutual physical or mental limits can show that movement and sport activity do facilitate networking and communication, which enhances free expression and breaks the barriers of direct approach, as in school.

## Materials and Methods

The research methods used were qualitative, i.e. the case study method and the observation method. The work technique of the case studies was the semi-structured interview based on the previously established interview guide. Discussion with each participant was recorded, and the material was transcribed and subjected to content analysis. The average duration of the interview was approximately 35 to 45 minutes. We had 24 students who took part in the qualitative case study, out of which 12 were girls and 12 boys, aged between 12 and 13 years (born in 1998 and 1999). The group is relatively homogeneous, comprising students from all four years of study. After calculating the BMI one can see that of the group of 24 students, 5 are overweight (3 girls and 2 boys), and one is obese. The beginning of the activity carefully directed towards the reorganization of the values and models took place during November.

## Discussion

By using the interview method, we have tried to detect the ways in which overweight students are perceived by the rest of the group. One can observe that the formal group knows itself quite well, being formed in the first grade, these students currently being in fifth grade, with a total of 24 students and 3 transfer students that arrived at the beginning of the year, out of which none are overweight. The group has a well-known informal leader who, by at the beginning of the year, also became the formal leader, both as class representative and as an opinion leader. Based on the initial interview, one could see that the informal groups from the entire class of students are formed based on common and short-term interests and social class, and differences, such as weight, lead to marginalization. Isolating students with such a social label leads to low self-esteem, and affects confidence on the long term. Based on the interviews conducted, four main directions were clearly identified concerning the overweight students during sports activities.

### Marginalization of overweight students in picking teams

When teams are formed through the free choice of students, it appears that the ones that are chosen first are students with sports abilities and consequently the overweight students are chosen among the last, thus becoming a burden for the team captain who in the end "chose" them by elimination. They are distributed to the team because "they are fat and can't do anything," "no one will choose them anyway," "the other colleagues will mock the entire team they will be a part of," and worst of all "I am ashamed of them." Students ask themselves "why choose them when no one else wants them?" because "all other colleagues will mock them." It seems that, by choosing a fat student in the team, it automatically sets the team up for defeat; moreover, "However goodhearted they are, why should I choose them? I also want to be part of a good team!" Letting students choose the teams for themselves and picking the team captains from among the best students will create, from the beginning, a scale of values, from best to worst, the latter being inevitably chosen last. This creates a rift between the students with great sports ability and those who are not necessarily lacking in qualities and potential but are merely feeling inferior and ignored by the others due to discrimination.

**Lack of sports skills of overweight students**

The fact that, generally speaking, the overweight students are exempt from sport and do not take up any physical activity is negatively appreciated by the other students: "They don't do any sports" and "they don't even know how to run." Another problematic thing is the way these students are perceived by the sports teachers, who instead of working more with them simply exempt or spare them: "Even the teachers say that they only stuff themselves," "you can see their fat through the blouse." At this age, the level of cruelty and meanness manifests itself as: "His parents don't even buy him a jump suit because he wouldn't even fit in it." Having an overweight student as an opponent only causes amusement because "they have no way of winning, they're obese," "they have no place on the field" and "as an opponent? They're great because they spin in circles" and "Ha ha, they're as big as the goal." Having an overweight student as an opponent is synonymous with victory because they have no chance of winning, only "if you assemble an overly large team." As far as worrying about losing to a fat opponent is concerned, comments like, "We give them a sandwich and we make them run after it" brings us to the conclusion that competing against a fat student automatically leads to winning and having an overweight student as a team member is a sign of defeat.

**Lack of activity of overweight students and the lack of interaction with others**

Overweight students, however, are not perceived as being very sociable because "they complain all the time," do not express themselves easily and never make the first step: "They just sit there and expects us to go up to them." Because of preconceptions, overweight students are isolated by the group, and they manage to integrate themselves with difficulty. Most of the time not even the physical education and sports teachers manage to integrate them into the group. This widens the rift between them and the rest of the group by the fact that they are not giving them a task due to the preconception that they will not be able to finish them. This further increases the group's lack of trust in their ability as well as the overweight student's trust in their own abilities.

**Avoiding interaction with overweight students because of fear of being associated with them by others**

Even when the other students make an effort to socialize, they ask themselves "where should I go with them, because everyone will laugh at me?" Furthermore, they also believe that the only activity the overweight students are interested in is eating: "Where should we go? All they do is eat" and ask themselves, "Why don't they go out with their fat friends?" It would make things so much easier if everyone stayed with their own group. One can see that from the very beginning the socializing process within the group is difficult and the overweight students are marginalized and should socialize among themselves. There has always been a difference between the desire to be accepted by the social group and reality, and the educational factors have the purpose of struggling to help the children adapt to the conditions of the educational environment. In spite of this desideratum, there has always been a "marginalized" category, exclusion from the group standards being made according to various criteria.

## Conclusions

One can see that an essential criterion in estrangement from the main interests of the group of students is the relationship between the basic sport activity and the level of body development, with children with a high body mass index being rejected by the group of same-aged children. An age of delicate but also profound bio-psycho social changes, preadolescence raises difficult questions for young people that are going through this process and they need an external influence that either confirms or invalidates "the enigmas" of their age. The physical education and sports class can be the place where body differences are stigmatized most by students, and if the physical education teacher does not understand the importance of involvement and determination in these students' participation in the educational process they will under no circumstance be able to help them through the socializing process or help them change to a more active lifestyle. They will encourage absenteeism or exemption from physical education class and subsequently sedentary occupation.

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## References

Bauer, K. W., Yang, Y. W. & Austin, S. B. (2004). "How Can We Stay Healthy When You're Throwing All of This in Front of Us? Findings from Focus Groups and Interviews in Middle Schools on Environmental Influences on Nutrition and Physical Activity." *Health Education Behaviour* 31: 34–46.

Davison, K. K. & Birch, L. L. (2002). "Processes Linking Weight Status and Self-Concept among Girls from Ages 5 to 7 Years." *Developmental Psychology* 38: 735–748.

Deckelbaum, J. R. & Williams, C. L. (2001). "Childhood Obesity: The Health Issue." *Obesity Research* 9: 239S–243S.

Eisenberg, M. E., Neumark-Sztainer, D. & Story, M. (2003). "Associations of Weight-Based Teasing and Emotional Well-Being among Adolescents." *Archives of Pediatric & Adolescent Medicine* 157: 733–738.

Eisenberg, M. E., Neumark-Sztainer, D., Haines, J. & Wall, M. (2006). "Weight-Teasing and Emotional Well-Being in Adolescents: Longitudinal Findings from Project EAT." *Journal of Adolescent Health* 38: 675–683.

Faith, M. S., Leone, M. A., Ayers, T. S., Heo, M. & Pietrobelli, A. (2002). "Weight Criticism during Physical Activity, Coping Skills, and Reported Physical Activity in Children." *Pediatrics* 110: e23.

Fox, K. R. & Edmunds, L. D. (2000)." Understanding the World of the 'Fat Kid': Can Schools Help Provide a Better Experience?" *Reclaim Child Youth* 9: 177–181.

O'Brian, K. S., Hunter, J. A. & Banks, M. (2007). "Implicit Anti-Fat Bias in Physical Educators: Physical Attributes, Ideology and Socialization." *International Journal of Obesity* 31: 308–314.

Puhl, R. M. & Latner, J. D. (2007). "Stigma, Obesity, and the Health of the Nation's Children." *Psychology Bulletin* 133: 557–580.

# Individual and Collective Levels in Team-Building through Physical Education

Cristiana Pop

## Introduction

One of the most frequent requirements quoted by job offers in large companies is the ability to work as a team member. The fundamental difference between a team and a group is that, in a team, each group member is assigned a position which corresponds to a specific task. At the same time, there are established rules, and the qualities and skills of each person are used to achieve different goals for the team. All these features are found in physical education and all physical activities involving the cooperation of at least two partners. Therefore, games have been chosen as a means of developing students' ability to work together for the success of a joint action, at the same time involving the improvement of individual performance. The natural world provides an example whereby a team is more than a sum of individuals, as in a flock of geese which, by flying in a V formation, adds 71% flying range than if each bird flew alone.

As there are many examples in professional sports, even in the case of exceptional talent, the smooth and effective functioning of a team cannot be guaranteed in advance (McNeish 1974). Even less when the team is very heterogeneous in terms of availability, knowledge, skills and abilities are necessary for a consistent game. If the most advanced players practice only among themselves, without assisting beginners, it will take much longer to bring them to a level of ensuring everyone a good game; not only the appearance of exercise, but given the success and satisfaction of execution or tactical schemes (Pop 2007).

The teacher, by their methodical knowledge of physical education and educational management, determines an accelerated learning and a reduction in the gap between the two categories of students.

## Methods

Freshman student groups, with whom we work in physical training, consist of young people of mostly the same age and in some cases the same gender, but who do not know one another beforehand. Characteristic for the students as a social group is their common target for evolving in the educational, intellectual and professional fields. Their integration in the university environment, as a cultural space, and contacting academic personalities offers young students totally new cultural and social experiences, significantly different from previous ones.

When they come to the first lessons, the students are in the early stages of forming a group, trying to develop relations between them. Students participating in lessons with sports content will be structured and will act in conjunction and as a team. From my observations, this overlap leads to a better understanding and relationship between the group members.

The groups are made up randomly, and the physical skill level is more often dissimilar. Students with less experience or no experience in the chosen game compare themselves with the most advanced and realize they need to improve. The individual opinion of the team members regarding the leadership qualities of the teacher will rely on how they meet those needs. The easiest way invoked by some students from the very beginning is escape from an activity in which that they cannot demonstrate their aptitudes. ”I have never played volleyball, I cannot do this well (even from the first attempt),” “I’m tired” or “I didn’t come to this university for sports” are just some examples of the repertoire used to avoid the damage to their own image in the eyes of others. Based on my observations, males react in this way more often than females.

To gain the students’ involvement in lesson tasks, you must show concern for their executions, give them positive or negative feedback as appropriate, make suggestions to resolve difficulties, listen actively and make sure you have been understood. A reliable method for verifying the correct understanding of the message is to ask for a brief review of the indications that you gave (a feedback agreement) (Pâinișoară 2004).

In my opinion, the feedback offered by the teacher should be immediate, direct and individualized when it comes to individual practice, and when the team is the goal, to focus on its functioning as a system. We emphasize the importance of correct technical execution (as a personal contribution) to the success of the team’s tactical assignment. Thus, the student will be motivated to improve their executions not only for themselves but for the entire team. Moving forward in the technical aspect, the student will gain confidence and assume responsibility for several

interventions during the game. A good percentage of successful actions will prove their usefulness in the team's mechanism, which can lead to strengthening ties with teammates.

Achievements and original solutions should be highlighted and appreciated by positive feedback through praise, a word or gesture of encouragement, or applause. Students should be supported, generally, by the personal effort to find the appropriate solutions to their technical implementation possibilities, and recognition of these achievements will be a means of strengthening in learning and motor development. In cases where their conduct on the field was worthy, congratulate them and thank them for their efforts individually and as a team. Teamwork gives positive results where skills and knowledge complement each other.

Team spirit is gained over time and is a form of intrinsic motivation, with the role of mobilization of energy that otherwise individuals would be willing to invest. In other words, in physical education you can spend more energy as a member of a team in a competition with another team than training for personal benefit. This spirit is induced by mutual aid which teammates grant one another for training in the race, but also for the fun of the game. This pleasure can be maintained by the teacher by cultivating an atmosphere of enthusiasm and good humour; sometimes a little joke can boost the team's morale when things are not going well. Not to be overlooked, especially in the case of students, is the fact that physical education is a means of recreation and compensation of intellectual effort, sometimes intense and prolonged.

## Results

Uniting methodological and managerial requirements at the beginning of the second semester, I asked the students who were part of the experimental group to organize a volleyball competition. From a methodological point of view, a competition is a good way to end a learning stage because the students will have the possibility to apply the knowledge, abilities and skills acquired during the physical education classes. This will be used in unexpected and new situations, and against different teams. A competition is a frame within which the teammates will assess themselves and their solutions in a real game situation.

From the managerial point of view I considered that by involving students in organizing a competition they will automatically foresee, organize, coordinate, motivate others and evaluate the result of an activity, taking the steps of a managerial plan by themselves.

Another advantage of this project was that the impact of a student competition will be improved if the idea is horizontally (student-student) spread, instead of vertical (teacher-student) communication.

The participation was voluntary, and the main condition was that all members of one team were in a same study group. The subjects were studying at a cybernetics faculty, being colleagues in other theoretical classes. The study concentrates on girls because they represent the majority in the university.

In choosing volleyball I used data from a questionnaire about the students' preferences:

- 70.5% prefer activities with no contact or with individual involvement, like aerobics or fitness
- 21% prefer volleyball.
- The rest (8.5%) prefer basketball.

Activity based on a team game was received with moderate enthusiasm. The main reasons against this were that there is a preference for following the teacher's moves, or to work in a slow, personal rhythm instead of learning new lines of action, rules or something which requires attention, focus and imagination. After the first semester and after the students tried the game, playing volleyball was a voluntary choice. At the same time, the control group performed in PE classes of fitness and aerobics activities, an individual effort for personal benefits. The two groups, the experimental and the control, each consisted of twenty-one students.

I decided with the steering committee the most appropriate competition interval, bearing in mind their professional program. The fifth week was a good choice, following a few weeks of training, before the mid-semester exams and allowing some necessary actions such as announcements, flyers, listings, program and regulation.

We initially registered eight volleyball teams, each having a leader and between seven and ten members. All represented their professional, formal group of the same faculty. The competition was in eliminatory system; therefore we had a total of six matches in three days—three group matches on day one, semi-finals on day two and the final on day three.

The collected data shows how the competition created motivation for physical effort. The participation of the experimental group increased significantly with 57% in the competition week, compared to the control group which followed a normal, non-competition program. In the weeks before we had a good involvement and attendance in PE classes to prepare the team for a good performance.

Also after the competition, the trend was maintained; the difference between the two groups regarding the lessons was an average increase of 14.3% attendance. A possible explanation for this could be the discovery of team spirit and the joy of playing a game with other people.

At present, when the daily pursuits of our younger generation are mainly sedentary, and obesity is widespread, spending time playing a sport could bring freshness to their lives and the physical effort could provide enough satisfaction for it to become an internal motivation. For our mission, as teachers, every young person who spends more time engaged in sport is a professional success. We did succeed, without a high cost, in involving sixty students in competition. Not only was the quantitative participation important, but so was the technique and tactical gains. This kind of experience helps students develop their leadership qualities, and offers them the authority, opportunity and motivation for assertion, initiative and creativity.

## Discussion

Risk conditions, which are sometimes involved in sport, induce cohesion within the team or group. When winning physical integrity often depends on teammates, and the sense of solidarity among group members develops. Even in professional sport teams, which are often multi-ethnic groups, the importance of goals, optimal motivation and common effort in exceptional conditions induce tolerance and unity, facilitating communication. The images we have of others are highly conditioned by our culture, but physical culture has a distinctive form of communication, which makes cooperation even in multicultural teams easier.

The professor, by personal example, determines how relations between them and the group of students will develop, and they will react depending on how the teacher behaves. Most young students seek a role model, and have a positive reaction when they meet it. There is the belief that group members tend to copy, even unconsciously, the attitude and behaviour of the leader, with the understanding that whatever they do is right. A possible explanation is that 87% of information is visually perceived, even when words are in discrepancy with actions, and interlocutors will believe what they see.

The principle is simple—you have to behave in the same manner you want those you teach to behave (Bush & Bell 1994). Like it or not, you are an example to them, and it is essential that the message you convey through your behaviour is positive and worth following. The teacher must prove themselves and the enthusiasm, initiative, involvement, energy,

confidence, fairness, caring, competence and fair play they expect from students or athletes. As Francis Bacon said in the sixteenth century: "He that gives good advice builds with one hand; he that gives good counsel and example builds with both, but he that gives good admonition and bad example builds with one hand and pulls down with the other."

Building a team is a process that starts at the individual level, and the first step is accepting the idea that everyone has a different set of values and needs. While individual qualities and skills will be used for team goals, each member will receive from the team honest feedback from which they can assess their strengths and weaknesses. A team and its spirit are built on interpersonal relationships and through communication based on respect and trust among teammates. The teacher or coach, as team leader, through their attitude and style will determine the climate in which these relations will be favoured or hampered.

Experiences shared by team members resonate differently in each of their consciences. If the observations, thoughts and feelings that these experiences determine remain at an individual level, the team will remain a sum of individuals. Sharing with others the effects of what common experience causes at an intimate level helps to create interpersonal relationships, mutual understanding and finally embracing the idea of cooperation to bring things to an end (Bull 1999).

Working in a team could be considered an objective in PE classes, especially at the higher education level. It is a valuable skill, which fulfils the employers' requirements related to integration in a team and performing as a member of it. A sports team also has the advantage of an easier understanding and acceptance of young people. It is a cultural achievement to present relevant knowledge in an active form of learning, especially for a generation which is set on a "fast-forward" pattern.

A possible systematic view of the information presented about the individual and collective levels in the process of building a team are presented in Table 2-15 below.

**Table 2-15. Possible systematic view of information about individual and collective levels in the process of teambuilding**

| Level | Individual | Team |
|---|---|---|
| Team objectives | Confluence | Synergy |
| | Individual's feeling of belonging to a team | Creative energy expressed by a group whose strength and ability is greater than the sum of individual qualities of team members |
| | Honest and reliable feedback | Individual qualities and skills used to meet common tasks |
| | Coach's attitude and approach will have an effect on team spirit | Team spirit develops through open and enhanced communication channels between team members |
| Building a team | A part of the coach's task | A path of communication with team members |
| | Each individual is supported to interact constructively with other team members | Help and support each other in solving common tasks, participation and discussion of common experiences (observations, ideas, emotions) inside the team |
| | The individual's awareness of the potential that the team plays as a whole | The team is built on interpersonal relationships |

## Conclusions

- The study points out a few methods for making some individuals work as a team.
- The experiment shows that a sports team is an efficient instrument for developing the teamwork capacity of young students.
- The chapter includes a new approach regarding the relationship between the individual and collective levels in building a team process.
- The teacher's (coach's) personality and personal example is a serious issue for building a team and maintaining a good working spirit.
- Teaching PE (and sports) means not only technique and tactics, but also the energy, interest and heart you invest in achieving a

performance. The art of teaching uses the subtle power and synergy of a team to reach common goals.

## References

Bull, S. J. (1999). *Sports Psychology: A Self-Help Guide*. Ramsbury: Crowood Press.

Bush, T. & Bell, L. (Eds.). (1994). *The Principles and Practice of Educational Management*. Thousand Oaks, CA: Sage Publications.

McNeish, R. (1972). *An Inspirational Short Story about Effective Teamwork ...* http://www.team-building-bonanza.com/inspirational-short-story.html.

Pâinișoară, I. (2004). *Comunicarea eficientă* [Efficient Communication]. Iași: Polirom.

Pop, Cristiana. (2007). *Management educațional. Ipostazele manageriale ale profesorului de educație fizică și sport* [Educational Management: Management Hypostases of the Teacher of Physical Education and Sports]. București: Oscar Print.

# LEARNING OF THE FORWARD HANDSPRING VAULT ON THE BASIS OF BIOMECHANICAL INDICATORS OF SPORTS TECHNIQUE KEY ELEMENTS IN WOMEN'S ARTISTIC GYMNASTICS

VLADIMIR POTOP

## Introduction

Artistic gymnastics is currently experiencing a new level of development in terms of the content and assessment of exercises. The new modifications of the Code of Points addressing the difficulty of technical elements, the granting of bonuses and the specific requirements of each apparatus have determined new directions and trends of technical training on competitive apparatuses (Potop 2008). Handspring vaults represent the most dynamic and athletic event in gymnastics polyathlon, as well as the shortest, with the execution of a vault taking about 5 to 6 seconds. A correct vault requires the gymnast's good physical training, especially in the strength of legs, shoulders, abdomen-back and very good spatial and temporal orientation. Due to their execution, the vaults represent one of the most spectacular events of gymnastic competitions (Potop 2007; Vieru 1997). In any branch of sports the quality of the learning process influences performance. In sports activities, learning is generally called "motor learning," resulting in the development of skills based on sensory, kinesthetic and proprioceptive components; the end of a movement is the signal that triggers the next movement (Niculescu 2003). In sports practice, some simplification strategies have been applied in the learning and improvement of technique, meant to reduce the conditional, sensory or coordinative strain (Dragnea & Mate 2002). The positions of movement orientation were shown and studied within the structure of gymnastics exercises (Boloban 1990; Sadovski et al. 2009, 42), with regards to

starting position (SP), multiplication of body position (MP) and final position (FP).

In order to split gymnastics elements into parts, we can use several criteria such as pedagogical, psychological, physiological and biomechanical. The increase of objectification goes from the pedagogical criteria towards the biomechanical. That is why the biomechanical criteria are used for dividing the gymnastics elements into parts. Thus, the technical structure of gymnastics elements contains three levels—periods, stages and phases (Suchilin 2010). Research and practice show that the effectiveness of learning complex gymnastic elements increases if the phasic structure of elements is checked during the process of technical training. Consistent with these elements, periods of movement, with or without support, in the technical structure of gymnastics exercises can be identified. Some exercises are performed in handstand position only (for example, giants, strength elements, circles). When performing the exercises with or without support, the periods alternate (e.g. acrobatic vaults and handstands, release movements and dismounts) (Arkaev & Suchilin 2004).

An important step in the initial technical training is the learning of the universal components of basic movements (Hidi, in Grigore 2001). These components are the following: landing, hurdle onto springboard, handspring, swings, hanged swing or combined positions and handstand. All gymnastic elements, handspring vaults and acrobatic exercises can be taught under the form of algorithmic programs. By applying this method we put into practice the didactical principles whose observance leads, as we know, to a faster, more accurate learning of motor skills (Dungaciu 1982; Vieru 1997; Gaverdovskij 2007). Effective learning at different stages of technical training can be provided only in the conditions in which the stages of learning and its content are closely linked with the efficiency criteria (Platonov 2004). Analyzing the technique of gymnastic exercises depending on biomechanical positions uses the arithmetical "entry" that involves operations of improvement of concrete issues (Smolevskij & Gaverdovskij 1999). The goal of this chapter is the learning and improvement of forward handspring vaults based on the biomechanical indicators of key elements of sports technique in women's artistic gymnastics. In view of this, we shall emphasize the key elements of sports technique of the analyzed vault and the elaboration of the algorithmic program for learning its phases.

## Methods and Techniques

This scientific approach led to the organization of a case study in School Sports Club no.7 of Bucharest, applied to a single female gymnast aged 11, category Junior III, over three months during February 2012 to April 2012, monitoring the gymnast's performances in training sessions and competitions. This vault was used as a requirement for Juniors IV, level 1 and 2 and is used at the present moment as a preparatory and warm-up exercise when learning other vaults of different groups. In our research, we used the method of bibliographic study regarding the technical training, notions of biomechanics and didactics of learning in artistic gymnastics. In terms of the biomechanical study, we used the World-in-motion program (Physics ToolKit) of 2D video analysis (see Figure 2-30 below) and the graphical representation Excel. The methodology of learning the forward handspring vault was used to create the algorithmic learning program that deals with the sequence of preparatory exercises meant to provide motor support, enhancement and improvement, and common mistakes.

**Figure 2-30. Bio-mechanical analysis of forward handspring vault (World-in-Motion)**


Algorithmic program of forward handspring vault learning consists of the following:

- First series—providing motor support in terms of upper and lower limbs strength, scapular and abdominal belt strength and back strength.
- Second series—actual learning per phases. Landing, run with first flight and second flight, then execution of the element in easier conditions on blocks, gym bench with or without help (Gaverdovskij 2002).
- Third series—enhancement and improvement of the vault by performing it on the vaulting table without help. Making the vault with turn during the first flight or during the second flight or with salto in the second flight, etc.

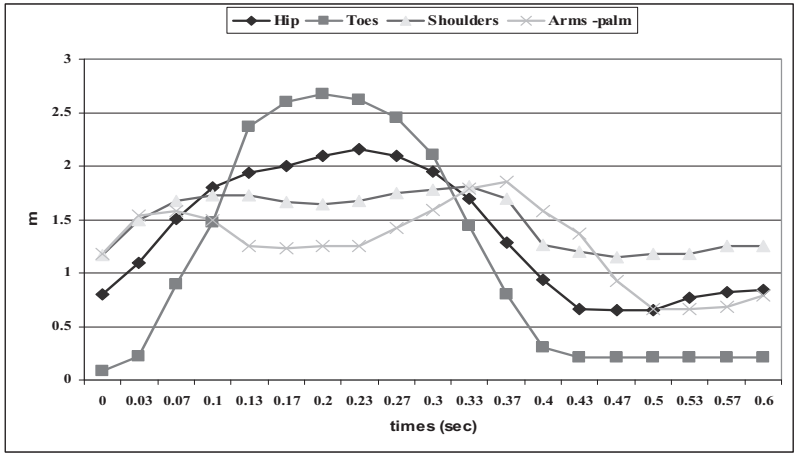
Common mistakes are: start position with bent knees and on entire foot during hurdle onto springboard; bent torso during hurdle onto springboard; piked position in the first flight and extension in the second flight; arms wide apart and bent elbows during handspring; landing with feet apart. Help is granted laterally during the first flight to ensure a better turn, with a hand on chest and another on the thigh. At repulsion moment, athlete's hands are grabbed and pushed upward and forward. Help in the second flight is granted after repulsion, with a hand behind the neck and another at the pelvis level, focusing on the increase of height and length of the second flight. Following up a study on the dynamics of technical element learning and the content of training on various apparatus using the transfer, it has been found that not all handspring vaults made during training sessions were used in competitions, and the applicability of the transfer has not been revealed (Potop 2005).

## Results and Discussion

The biomechanical analysis of the forward handspring vault highlighted the following key elements of the technique associated to this vault: start position (SP)—hurdle onto springboard and handspring (repulsion moment); multiplication position (MP)—during first or second flight and final position (FP)—landing. Figure 2-31 and Table 2-16 below show the trajectories of body segments and their values during different phases of vault in terms of hip, foot, shoulders and hand joints. The analysis of the vault shows nineteen video sequences (frames [Fr.]) divided into phases, corresponding to the key elements of vault technique: SP at 0.0 sec.—hurdle onto springboard; MP—first flight within 0.033 to 0.1 sec interval; SP—handspring at 0.133 sec.; MP—second flight within the interval of 0.233- 0.567 sec and FP at 0.6 sec.—landing. The results of the kinematic parameters of the body position show that the moment of maximum height

of the centre of gravity (the hip) in the second flight is 2.158 m, and the vault length related to table at landing is 1.593 m.

**Figure 2-31. Trajectories of gymnast's body main joints**



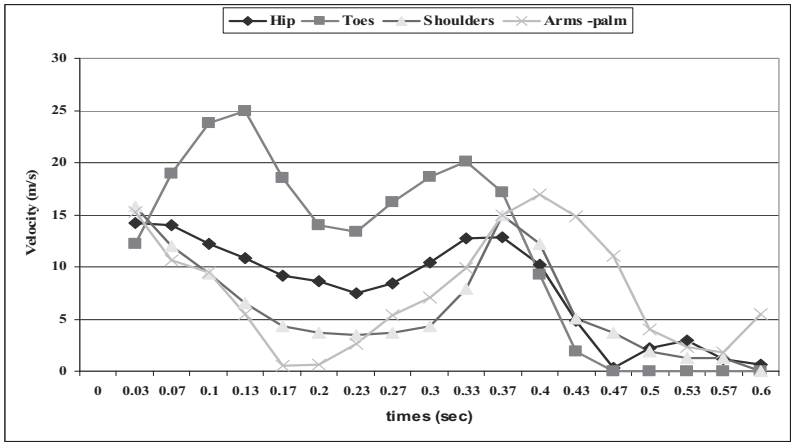

As for the results of execution velocity of body segments when hurdling onto the springboard, the low values of leg tips entails blocking up while the increased values of hip joints and arms-shoulder joints make the off-flight of the stretched body over the table possible. The stretched position during the second flight is held by maintaining the optimum velocity of arm and leg tips while the values of the other joints decrease significantly up to the landing (see Figure 2-32 below).

In terms of the results of body segments force, we noticed increased values in hip joints (115.706 N) and foot joints (304.382 N) during off-flight from springboard, while shoulder joints and fist joints had smaller values of 125.45 N and 188.278 N respectively. These forces make the forward turn of the stretched body possible. The values decrease gradually until flight acme, followed by a descending phase before landing (see Figure 2-33 below).

## Conclusion

The results of this study reveal the main biomechanical indicators of key elements of the forward handspring vault in artistic gymnastics. The study also presented the preparatory exercises for each phase of the vault, as well as the execution mistakes and help during these phases.

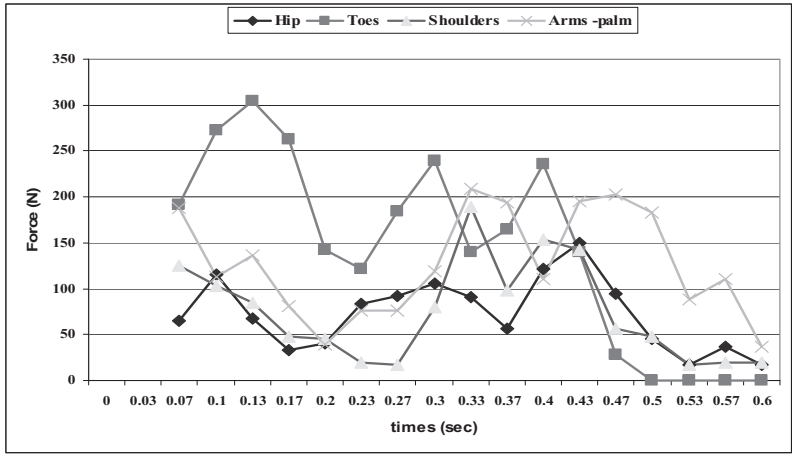
**Figure 2-32. Results of analyzed joints velocity**




## Table 2-16. Body position in space - time

| No. | Times (sec) | Vault phases | Hip | | Toes | | Shoulders | | Arms -palm | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | X(m) | Y(m) | X(m) | Y(m) | X(m) | Y(m) | X(m) | Y(m) |
| 1 | 0 | Beat | -2.072 | 0.805 | -1.918 | 0.086 | -1.97 | 1.165 | -1.661 | 1.182 |
| 2 | 0.033 | | -1.747 | 1.096 | -1.85 | 0.223 | -1473 | 1.49 | -1.148 | 1.541 |
| 3 | 0.067 | Flight I | -1.456 | 1.507 | -1.867 | 0.891 | -1.062 | 1.678 | -0.736 | 1.576 |
| 4 | 0.1 | | -0.771 | 1.798 | -1.833 | 1.473 | -1.719 | 1.73 | -0,445 | 1.49 |
| 5 | 0.133 | Handspring on vaulting table | -0.462 | 1.935 | -1.319 | 2.364 | -0.445 | 1.73 | -0.206 | 1.25 |
| 6 | 0.167 | | 0.086 | 2.004 | -0.634 | 2.603 | -0.291 | 1.661 | -0.188 | 1.233 |
| 7 | 0.2 | | 0.308 | 2.09 | -0.137 | 2.672 | -0.171 | 1.644 | -0.171 | 1.25 |
| 8 | 0.233 | | 0.599 | 2.158 | 0.291 | 2.62 | -0.051 | 1.678 | -0.154 | 1.25 |
| 9 | 0.267 | Flight II | 0.873 | 2.09 | 0.719 | 2.449 | 0.034 | 1.747 | -0.154 | 1.422 |
| 10 | 0.3 | | 1.113 | 1.952 | 1.233 | 2.107 | 0.171 | 1.781 | -0.069 | 1.593 |
| 11 | 0.333 | | 1.267 | 1.696 | 1.422 | 1.439 | 0.308 | 1.815 | 0.12 | 1.793 |
| 12 | 0.367 | | 1.387 | 1.285 | 1.49 | 0.805 | 0.685 | 1.696 | 0.531 | 1.85 |
| 13 | 0.4 | | 1.404 | 0.942 | 1.524 | 0.308 | 1.13 | 1.267 | 1.079 | 1.576 |
| 14 | 0.433 | | 1.49 | 0.668 | 1.593 | 0.206 | 1.319 | 1.199 | 1.541 | 1.37 |
| 15 | 0.467 | | 1.49 | 0.651 | 1.593 | 0.206 | 1.439 | 1.148 | 1.815 | 0.925 |
| 16 | 0.5 | Landing | 1.524 | 0.651 | 1.593 | 0.206 | 1.559 | 1.182 | 1.73 | 0.668 |
| 17 | 0.533 | | 1.524 | 0.771 | 1.593 | 0.206 | 1.559 | 1.182 | 1.764 | 0.668 |
| 18 | 0.567 | | 1.524 | 0.822 | 1.593 | 0.206 | 1.61 | 1.25 | 1.576 | 0.685 |
| 19 | 0.6 | | 1.524 | 0.839 | 1.593 | 0.206 | 1.61 | 1.25 | 1.781 | 0.788 |

**Figure 2-33. Resultant of analyzed joints force**




These methodological aspects proved that the efficient use of the biomechanical study of the forward handspring vault in women's artistic gymnastics helps us to determine the key elements of sports technique, depending on the group including the analyzed vault. We recommend the use of video equipment during training sessions, if possible even specialized programs for the analysis of biomechanical indicators, the detection of errors and the improvement of technical execution. The use of the methodology of algorithmic learning can serve as a guideline methodology and help to streamline the learning process of gymnastic exercises.

## References

Arkaev, L. Ja. & Suchilin, N. G. (2004). *Kak gotovit' chempionov: euwkshf i tehnologija podgotovki gimnastov vysshej kvalifikacii* [How to Create Champions]. Moskva: Fizkul'tura i sport. 233–257.

Boloban V. N. (1990). *Sistema obuchenija dvizhenijam v slozhnyh uslovijah podderzhanija statodinamicheskoj ustojchivosti* [System of Training Movements in Difficult Conditions to Maintain the Static-Dynamic Stability]. Kiev: Avtoreferat dissertaci.

Dragnea, A. & Mate, S. (2002). *Teoria sportului* [Theory of Sport]. Bucureşti: FEST.

Dungaciu, P. (1982). *Aspecte ale antrenamentului modern în gimnastică* [Aspects of Modern Training in Gymnastics]. Bucureşti: Sport-Turism.

Gavardovskij, Ju. K. (2002). *Tehnika gimnasticheskih uprazhnenij* [Gymnastics exercises technique]. Moskva: Terra-sport. Moskva.

—. (2007). *Obuchenie sportivnym uprazhnenijam. Biomehanika. Metodologija. Didaktika* [Sports Training Exercises. Biomechanics. Methodology. Didactics]. Moskva: Fizkul'tura i sport.

Grigore, V. (2001). *Gimnastica artistică: Bazele teoretice ale antrenamentului sportiv* [Artistic Gymnastics: Theoretical Bases of Sports Training]. Bucureşti: Semne.

Niculescu, G. (2003). *Gimnastica artistică: Repere teoretice şi metodice* [Artistic Gymnastics: Theoretical and Methodical Guidelines]. Bucureşti: Ervin Press.

Platonov, V. N. (2004). *Sistema podgotovki sportsmenov v olimpijskom sporte: obwaja teorija i ee prakticheskie prilozhenijaju* [Training System of Athletes in Olympic Sports: General Theory and its Practical Application]. Kiev: Olimpijskaja literatura.

Potop, V. (2005). *Învăţarea motrică şi transferul în gimnastica artistică de performanţă* [Motor Learning and Transfer in Performance Artistic Gymnastics]. Bucureşti: Bren.

—. (2007). *Reglarea conduitei motrice în gimnastica artistică feminină prin studiul biomecanic al tehnicii* [Adjustment of Motor Behaviour in Women's Artistic Gymnastics by Biomechanical Study of Technique]. Bucureşti: Bren.

—. (2008). *Gimnastica artistică feminină: Elemente teoretice şi metodice* [Women's Artistic Gymnastics: Elements of Theory and Methodology]. Bucureşti: Bren.

Sadovski, E., Boloban, V., Nizhnikovski, T. & Mastalezh, A. (2009). Poznye orientiry dvizhenij kak uzlovye jelementy sportivnoj tehniki akrobaticheskih upazhnenij [Postural Orientation Movements as Key Elements in Sports Technique of Acrobatic Gymnastics Exercises]. *Teorija i praktika fizicheskoj kul'tury 12*: 42–47.

Smolevskij, V. M. & Gaverdovskij, Ju. K. (1999). *Sportivnaja gimnastika.* [Artistic Gymnastics]. Kiev: Olimpijskaja literatura. 112–121.

Suchilin, N. G. (2010). *Gimnastika: teorija i praktika:* metodicheskoe prilozhenie k zhurnalu "Gimnastika" [Gymnastics: Theory and Practice: Methodological Supplement to "Gymnastics"]. *Federacija sportivnoj gimnastiki Possii* 1: 5–13.

Vieru, N. (1997). *Manual de gimnastică sportivă* [Manual of Sports Gymnastics]. Bucureşti: Driada.

# FORMING CREATIVE SKILLS IN PHYSICAL EDUCATION AND SPORTS STUDENTS

GLORIA RAŢĂ, BOGDAN-CONSTANTIN RAŢĂ, MARINELA RAŢĂ AND GABRIEL MAREŞ

## Introduction

This chapter presents a study on the formation of creative skills in students, i.e. professional communication in the field of Physical Education and Sports. Creativity, understood as "the aptitude or skill to produce something new and valuable" (Roşca 1981, 16), is an aptitude because it depends on the characteristics of human personality, and is a skill because it can be educated over time through specific mental efforts. It depends on the "mental processes that lead to solutions, ideas, concepts, artistic expressions, theories, or products that are unique and have never been seen before. Creativity is very difficult to assess because it is a very diverse subject," but it also has different forms of manifestation and is largely "unexploited by most people" (Carter 2004, 146). It can be improved over time by practicing specific methods and means designed to form the ability and the possibility for innovation. It depends on the individual's creative reasons "expressed by a need of new and an orientation towards new … through originality" (Popescu-Neveanu 1978, 155). They are manifested in their progress and daily activity for professional training. Professional training, a process based on "conceiving new, untried solutions, on associating the information found in memory with the new ones, on searching for new solutions, on emitting, testing, and retesting several alternatives prefiguring certain results" is the subject of transformation and adaptation. The performance of the creative formative act involves specific cognitive "functioning" and curiosity for discovering new things (Raţă 2011, 16–17). Creativity relies on the general disposition of the personality as manifested in the skill and ability to organize mental processes for making new, original combinations, original and effective information assemblies starting from the existing elements and leading to the elaboration of solutions that have never been

used. It depends on each person's ability to assimilate and process information. In this sense, the rapid and extensive evolution of all fields of activity determine the appearance of the science of creativity, studying the "techniques, processes, and forms of creation … embracing also the knowledge offered by various currents, such as brainstorming and others" (Popescu-Neveanu 1978, 158). The teacher, at any level, but especially as a teacher-trainer, must develop their ability to determine the student's assimilation of information that they in turn would use in their teaching activity. This professional training constitutes the key to success and personal development, but also a permanent concern to ensure the formation of motivation, interest, and joy to accomplish something noteworthy. "The will to educate the creative spirit in the didactic process led to the combination of certain methods that would fight inhibitions, favour the free association of ideas, and ensure individual and collective expression of the people. This is how we can fully use unconscious resources, but also individual real possibilities" (Raţă 2011, 104), possibilities that must be known by the teachers and students.

## Methods and Techniques

This experimental study aimed at forming creative skills in a group of students (in physical education and sports, and motor performance study programs), and to give them the ability to create drills/physical acting systems for a certain theme. We started from the hypothesis that students' involvement in the creation process of a set of drills can contribute to the formation of creative skills, but also allow them to be more involved in the process of professional training. As research methods we used the study of literature, record charts for activities, the statistical-mathematical method, and the graphical representation method. We chose to analyse the arithmetical mean and the difference between the arithmetical mean in the initial testing and that in the final testing. The study was conducted on a group of thirty students (divided into two subgroups—an experimental group of 15 students and a control group of 15 students), between February and May 2012, at the Faculty of Health, Movement, and Sports Sciences of the Vasile Alecsandri University of Bacău, Romania (in rooms equipped with magnetic boards, video projector, computers, overhead projector). In the students' assessment, we used the "student's activity chart." Each student from the experimental group, throughout the fourteen seminar lessons, had to create and describe, in ten minutes, drills for a certain theme included in the secondary school syllabus. The creation of drills for learning the performance technique for several events,

procedures, and technical elements from gymnastics, track and field, and handball over the course of ten minutes are recorded in Table 2-17. During each seminar lesson, we assessed the number of drills created and the description mistakes. For the control group, we used the activity chart for the first and the last seminar only.

**Table 2-17. Student's activity chart**

| **Name:** | | | **Date:** | |
|---|---|---|---|---|
| **Activity chart for student no. 1**<br>**Create a set of drills for learning the crouch start** | | | | |
| **Description of the drill** | **Number of drills** | **Explanation of the drill** | **Teacher's assessment** | |
| | | | **Mistakes** | **Assessment** |
| From standing position, behind the start line, taking the crouch start position and verifying your balance in the "on your marks" position.<br>From standing, taking the crouch start position, verifying your balance, lifting your pelvis at shoulder level, and taking the "ready" position, at will.<br>From crouch start, start running at your will, whenever you are ready. | 3 | 8 | 3 | 6 |

The charts were gathered at the end of every seminar and assessed by the teacher. They were returned, with annotations, during the next seminar so that the students could see and correct their mistakes. For this study, we took into consideration the first and last chart filled by each student. The filling time for each chart was ten minutes, but the information presented by the students was different and personalized. The grade given by the teacher envisaged description and explanation of the drill, mistakes made, self-assessment, teacher's assessment of the description and explanation, and assessment of the conversation. In this research, we assessed the initial level of the students through initial testing conducted during the first seminar, and to emphasize the effectiveness of implementing the activity charts for the experimental group through final testing conducted during the last seminar. Continuous, formative testing conducted during every seminar (also based on the activity charts not taken into consideration in this chapter), aimed at recording the progress made by students from one seminar to another. We succeeded in involving the students in their professional training and in the formation of creation skills regarding physical exercises on specific themes by implementing a methodology of practical application of a method based on the creation of drills.

## Results and Discussion

After gathering data from the activity charts, we presented the experimental group results in Table 2-18, and the control group results in Table 2-19. We centralized and interpreted the results recorded in the student's activity chart by each subject. In the experimental group, the results presented in Table 2-18 show that regarding the "number of created drills," the arithmetical mean is 3.60 in the initial testing, and 8.13 in the final testing. The extreme values of 2 and 6 drills in the initial testing prove, as does the average value of 3.60, the lack of habit and skill regarding the creation and description of drills in a given amount of time. The average value and the extreme values in the final testing show an improvement in creative ability; regarding the "number of mistakes" made in describing the drills, the arithmetical mean has a value of 5.20 in the initial testing, and of 3.20 in the final testing, with extreme values between 3 and 8 in the initial testing, and between 1 and 6 in the final testing. The average value and the extreme values in the final testing are smaller than those in the initial testing, which shows an increase in the students' level of attention when describing and explaining drills. We would also like to point out the fact that, although the number of drills created by the students increased, the number of mistakes decreased. Regarding the "self-assessment," meaning the grades given by the students to themselves, the average in the initial testing was 7.20, which is lower than in the final testing (8.13). As we can see, even if the average value increased, the progress was still quite small (0.93 points). The maximum value in the initial testing was 9 points, and the minimum value was 5 points, whereas, in the final testing, it was 9 and 7 points respectively. Regarding the "teacher's assessment of the description and explanation," we can see that the arithmetical mean was 5.40 points in the initial testing, and 7.80 in the final testing. The difference of 2.40 points between the two evaluations emphasizes the progressive formative aspect in the students throughout the experiment. The maximum value in the initial stage was 8 points, and in the final stage was 10 points, while the minimum value was 4 and 6 points, respectively. Regarding the "teacher's assessment of the conversation," as we can see, the average values recorded in the initial testing were 4.67 points, and in the final testing 7.13 points, with extreme values between 3 and 7 in the initial testing, and between 5 and 9 in the final testing.

In all five items, there was an improvement in the point value, both for the average and the extreme values, from the initial to the final testing. The average values improved between 0.93 and 4.53 points. The students

improved more with regards to describing and explaining the drills, and less regarding self-assessment. In the control group, the results recorded and presented in Table 2-19 show that, regarding the "number of created drills," the arithmetical mean was 4.00 in the initial testing and 5.87 in the final testing. The extreme values of 2 and 6 drills in the initial testing prove, as does the average value (4.00), the lack of habit and skill regarding the creation and description of drills in a given amount of time. The average value and the extreme values in the final testing (5.87 points and 5 and 8 points, respectively), are slightly larger than those in the initial testing (1.87 points), which shows an improvement in creative skills. Regarding the "number of mistakes" made in describing the drills, the arithmetical mean has a value of 5.00 in the initial testing and 4.40 in the final testing, with extreme values between 3 and 8 in the initial testing, and between 3 and 6 in the final testing. The average value and the extreme values in the final testing are smaller than those in the initial testing, which shows a slight improvement in the attention level regarding the description and explanation of the drills. We would also like to point out that, though the number of drills created by the students increased, the number of mistakes decreased. Regarding "self-assessment," the average value in the initial testing was 6.40, which is lower than the one in the final testing (7.20). As we can see, even if the average value increased, the progress was still quite small (0.80 points). The maximum value in the initial testing was 8 points, and the minimum value was 5 points, whereas, in the final testing, it was 9 and 6 points respectively. Regarding the "teacher's assessment of the description and explanation," we can see that the arithmetical mean was 5.60 points in the initial testing and 6.93 points in the final testing. The difference of 1.33 points between the two evaluations emphasizes the progressive formative aspect in the students throughout the experiment. The maximum value in the initial stage was 7 points and, in the final stage, 8 points, while the minimum value was 4 and 5 points, respectively, which also shows a slight improvement. Regarding the "teacher's assessment of the conversation" we can see an average value recorded in the initial testing of 5.33 points and, in the final testing, of 7.07 points, with extreme values between 3 and 8 in the initial testing and between 6 and 9 in the final testing.

**Table 2-18. Initial and final results in the experimental group**

| Number | Number of drills described and explained | | Number of mistakes made in describing and explaining the drills | | Self-assessment | | Teacher's assessment of the description, explanation | | Teacher's assessment of the conversation | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Initial | Final | Initial | Final | Initial | Final | Initial | Final | Initial | Final |
| 1 | 4 | 8 | 6 | 2 | 8 | 9 | 5 | 9 | 5 | 7 |
| 2 | 2 | 8 | 4 | 1 | 7 | 9 | 4 | 8 | 6 | 8 |
| 3 | 5 | 10 | 7 | 2 | 8 | 9 | 6 | 9 | 3 | 8 |
| 4 | 3 | 7 | 6 | 3 | 8 | 8 | 5 | 8 | 4 | 7 |
| 5 | 2 | 6 | 5 | 3 | 6 | 7 | 4 | 6 | 3 | 8 |
| 6 | 6 | 11 | 8 | 2 | 9 | 8 | 6 | 9 | 4 | 7 |
| 7 | 3 | 7 | 5 | 6 | 7 | 8 | 5 | 7 | 5 | 8 |
| 8 | 2 | 6 | 4 | 3 | 5 | 7 | 4 | 8 | 4 | 5 |
| 9 | 3 | 8 | 6 | 4 | 7 | 9 | 6 | 7 | 5 | 6 |
| 10 | 4 | 9 | 5 | 2 | 8 | 9 | 6 | 9 | 6 | 9 |
| 11 | 3 | 8 | 6 | 6 | 7 | 8 | 5 | 7 | 4 | 6 |
| 12 | 5 | 11 | 3 | 1 | 8 | 9 | 8 | 10 | 7 | 9 |
| 13 | 2 | 5 | 4 | 5 | 6 | 7 | 4 | 6 | 4 | 5 |
| 14 | 6 | 9 | 5 | 3 | 8 | 8 | 7 | 8 | 5 | 8 |
| 15 | 4 | 9 | 4 | 5 | 6 | 7 | 6 | 6 | 5 | 6 |
| A.m. | 3.60 | 8.13 | 5.20 | 3.20 | 7.20 | 8.13 | 5.40 | 7.80 | 4.67 | 7.13 |
| Diff. | 4.53 | | 2.00 | | 0.93 | | 2.40 | | 2.46 | |
| S | 1.40 | 1.77 | 1.32 | 1.66 | 1.08 | 0.83 | 1.18 | 1.26 | 1.11 | 1.30 |
| V. max. | 6 | 11 | 8 | 6 | 9 | 9 | 8 | 10 | 7 | 9 |
| V. min. | 2 | 5 | 3 | 1 | 5 | 7 | 4 | 6 | 3 | 5 |

A.m. = arithmetical mean; Diff. = difference between the initial testing average and the final testing average; S = standard deviation; V. max. = maximum value; V. min. = minimum value.

The values for the five items show that there was an improvement, both in the average and extreme values, from the initial to the final testing. The average values improved between 0.80 and 1.87 points. The students improved more with regards to describing and explaining the drills, and less regarding self-assessment. "The level of the creative skills, assessed in 2011 in the 3rd year students was better than the level found in the 1st year students," which is the result of "professional training" (Raţă et al. 2011, 30). This makes us look permanently for new ways of conducting

formative activities, thus checking this new method of action again and again.

## Conclusions and Suggestions

After analyzing the data recorded in the thirty activity charts, we can draw the following conclusions: in the experimental group, there was an increase in the five assessment items' average values between 0.93 and 4.53 and in extreme values from the initial to the final testing. In the control group, there was an increase in the five assessment items average values between 0.80 and 1.87 and in extreme values from the initial to the final testing. The increase of extreme and average values from the initial to the final testing shows the formation of a habit and skill regarding the creation and description of drills in a given amount of time. The students in the experimental group showed better progress than the ones in the control group. Progress recorded in the experimental group proves that the use of student's activity charts in each seminar stimulates the formation of creative skills in students and better involves them in the process of professional training.

## References

Carter, P. (2004). *Teste de inteligenţă şi psihomotricitate – Evaluaţi-vă personalitatea, aptitudinile şi inteligenţa* [Tests of Intelligence and Psychomotricity : Assess Your Personality, Aptitudes and Intelligence]. Bucureşti: Meteor Press.

Popescu-Neveanu, P. (1978). *Dicţionar de psihologie* [A Dictionary of Psychology]. Bucureşti: Albatros.

Raţă, Gloria, Raţă B.-C., Iancu P., Iancu H. & Raţă, Marinela. (2011*).* A comparative study regarding the manifestation of creative skills in the 1st and 3rd year physical education and sports students. *Gymnasium: Journal of Physical Education and Sport 1 (XII)*.

Raţă, Gloria. (2011). *Creativitate în activităţile specifice educaţiei fizice, sportului şi kinetoterapiei* [Creativity in Activities Specific to Physical Education, Sports and Kinesitherapy]. Bacău: Alma Mater.

Roşca, A. (1981). *Creativitatea generală şi specifică* [General and Specific Creativity]. Bucureşti: Editura Academiei.

**Table 2-19. Initial and final results in the control group**

| Number | Number of drills described and explained | | Number of mistakes made in describing and explaining the drills | | Self-assessment | | Teacher's assessment of the description, explanation | | Teacher's assessment of the conversation | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Initial | Final | Initial | Final | Initial | Final | Initial | Final | Initial | Final |
| 1 | 4 | 6 | 5 | 5 | 7 | 8 | 6 | 7 | 5 | 6 |
| 2 | 3 | 5 | 5 | 3 | 6 | 7 | 5 | 7 | 7 | 8 |
| 3 | 6 | 8 | 6 | 6 | 8 | 8 | 7 | 8 | 5 | 6 |
| 4 | 4 | 6 | 7 | 5 | 6 | 7 | 5 | 6 | 5 | 7 |
| 5 | 3 | 5 | 6 | 6 | 5 | 6 | 5 | 7 | 4 | 6 |
| 6 | 6 | 7 | 8 | 6 | 8 | 9 | 6 | 7 | 3 | 6 |
| 7 | 5 | 6 | 6 | 4 | 7 | 6 | 5 | 7 | 4 | 7 |
| 8 | 3 | 5 | 3 | 3 | 5 | 6 | 4 | 6 | 6 | 8 |
| 9 | 3 | 5 | 4 | 5 | 7 | 6 | 5 | 6 | 5 | 7 |
| 10 | 3 | 6 | 4 | 4 | 8 | 8 | 7 | 8 | 5 | 8 |
| 11 | 4 | 5 | 5 | 5 | 6 | 8 | 4 | 5 | 5 | 6 |
| 12 | 6 | 7 | 4 | 3 | 7 | 8 | 6 | 8 | 8 | 9 |
| 13 | 3 | 5 | 5 | 4 | 5 | 7 | 5 | 6 | 6 | 7 |
| 14 | 4 | 7 | 3 | 4 | 6 | 8 | 7 | 8 | 6 | 7 |
| 15 | 3 | 5 | 4 | 3 | 5 | 6 | 7 | 8 | 6 | 8 |
| A.m. | 4.00 | 5.87 | 5.00 | 4.4 | 6.4 | 7.2 | 5.60 | 6.93 | 5.33 | 7.07 |
| Diff. | 1.87 | | 0.80 | | 0.80 | | 1.33 | | 1.74 | |
| S | 1.30 | 1.22 | 0.84 | 1.22 | 1.14 | 0.84 | 0.89 | 0.71 | 1.10 | 0.89 |
| V. max. | 6 | 8 | 8 | 6 | 8 | 9 | 7 | 8 | 8 | 9 |
| V. min. | 2 | 5 | 3 | 3 | 5 | 6 | 4 | 5 | 3 | 6 |

A.m. = arithmetical mean; Diff. = difference between the initial testing average and the final testing average; S = standard deviation; V. max. = maximum value; V. min. = minimum value.

# MODELLING FUTURE TEACHERS' AGGRESSIVENESS: A TASK OF PHYSICAL EDUCATION AND SPORT TRAINING PROGRAMS

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AND MIHAELA-CRISTINA PĂUNESCU

## Introduction

The recent years have brought issues related to violence in the psychosocial environment of the Romanian schools more and more frequently to the attention of specialists in educational sciences. The general notion of "violence" refers to any behaviour exerted for the purpose of damaging or destroying victims. In order to highlight school violence complexity and diversity, we evoke a series of typologies that, depending on the attack manifestation plan and in correlation with the damage type affecting the victim, can differentiate between physical and verbal psychological violence, and between institutional and non-institutional violence. Another typology of the school violence behaviours, which combines many criteria such as the aggression plan (verbal/physical one), the opening degree (direct/indirect one) and the aggressor's implication type (active/passive one), was made by J. Hebert (in Neacşu 2010). To understand the causes and effects of institutional violence, we should firstly study the pupils' representations on this phenomenon, because their declarations related to school violence have a strong subjective character—in other words, we should permanently take into account the concept of perceived and subjective violence. (Leone et al. 2000) A study conducted in 2006 by the National Institute of Statistics, in cooperation with UNICEF, shows that 70% of school teachers and principals do not admit they have unsuitable behaviours toward their pupils, or admit that such cases are very rare. However, more than 22% of pupils declare that in their school certain teachers frequently ironize, insult

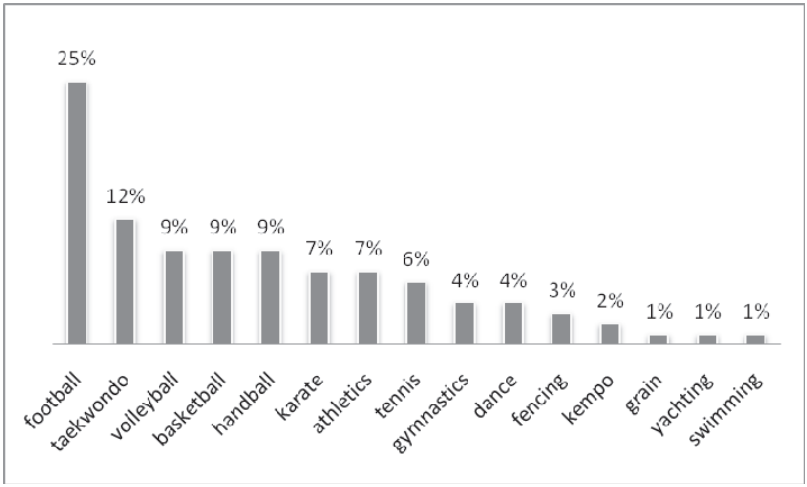
or humiliate them by using inappropriate expressions and 19% of them declare they were the victims of such behaviours, but not frequently. The aspects emphasized by the study conducted in Romania are also researched in the context of other European countries. According to a report of the Russian Federation Government, 16% of pupils are submitted to physical violence and 22% to emotional violence from their teachers. The studies by the University of Bordeaux prove that, among the 35,000 interrogated French pupils, 10% declare they were humiliated (more girls than boys). A similar answer is given by 45% of Slovenian pupils. Another experimental study conducted on high school pupils shows that the most frequent forms of aggression manifested by teachers toward their pupils are in descending order: speaking in a loud voice, non-objective evaluation, pupil intimidation, insults, offence and menaces addressed to them, exclusion from the classroom, use of obscene words, ignoring pupils, permanent nervousness and irony (Catalano, Loeber & McKinney 1999). Some specialists consider that this aggression results from their lack of psycho-pedagogic training (Neacşu 2010). In this context, we aim at bringing into discussion aggression, as a personality trait, and the possibilities to model it within the process through which students are trained for a teaching career. The physical education and sport teacher's profile includes professional competences and personal qualities. According to the specialty literature, these components provide for a successful teaching career. Students' training for this profession represent an educational process oriented to the development of their psycho-pedagogic and specialty competences. Thus, depending on the aimed-for specialty, the content of the study disciplines also present, besides the general elements, a series of specific elements contributing to specialty training. On the other hand, students are admitted to this training process with their global personality traits, on which there is no explicit intervention. At the same time, the current data show that pupils prefer the teachers with certain personality traits, indicating that a process meant to model these traits is absolutely required. The purpose of our paper is to highlight the main types of aggression expressed by the future physical education and sports teachers' behaviour, in order to design an educational process also assigned to diminish this personality trait.

## Material and Method

To reach our purpose, we used the Buss-Perry aggression test (1992). The questionnaire represents a 29-item tool destined to measure the following dimensions: physical aggression, verbal aggression, anger and hostility.

Each item is scored on a scale from 1 to 5. In the present study, the questionnaire was administered to 69 students in physical education and sport, in the second year of a psycho-pedagogic study program, our aim being to identify the future teachers' aggression levels and to orient the training process toward their personal development. Students aged twenty to thirty-five practiced different sports, such as football (25%), taekwondo (12%), volleyball (9%), basketball (9%), handball (9%), karate (7%), athletics (7%), gymnastics (6%), field tennis (6%), sport dance (4%), fencing (3%), kempo (2%), bobsleigh, yachting, swimming (1%). Among the subjects included in the research, 48% were women and 52% men. Figure 2-34 shows that physical aggression is predominant (28%), being followed by hostility (27%), anger (26%) and verbal aggression (19%). The data descriptive statistics proves that there are significant differences among the subjects' results in relation to the four types of aggression. This figure emphasizes that item 10, "If somebody hits me, I hit back," has the greatest weight (181 points), being followed by item 25, "I can think of no good reason for ever hitting a person" (169 points). At the opposite side, we find item 6 (113 points), "Given enough provocation, I may hit another person," and item 14 (88 points), "I get into fights a little more than the average person." It is not at all hazardous that the physical aggression subscale has the largest representation among the investigated subjects. We think that this happens because the students practiced or practice different sport branches.

**Figure 2-34. Subject distribution according to the practiced sport**



## Results and Discussion

After the test administration, we obtained the following results. Athletes are known to have an increased physical aggression as a consequence of their involvement in the practice of physical exercises that suppose the opponents' full contact. The Hostility subscale is made up of 8 items. In Figure 2-35 below, we can see that item 28 has the greatest weight (170 points), being followed by item 13 (168 points) and item 17 (160 points). At the opposite side, we find item 26. Hostility measures subjects' feelings of ill-will, enmity or injustice. Correlated to the specialty literature, the hostility characteristics can be expressed through an inventory-list of adjectives that should include the following: anxious, irritable, impatient, excitable, capricious, kind, tense (Neacşu 2010) (see Figure 2-35 below). At the same time, the obtained data reveal that the items composing each aggression type have a different prevalence (see Figure 2-36 below). Concerning the 7-item subscale for anger measurement, we can notice that item 1, "I am an even-tempered person," gathered 241 points, being followed by item 4 (195 points), "I flair up quickly but also get over it quickly." Item 23 (103 points), "I have trouble controlling my temper," collected the smallest number of points (see Figure 2-37 below). It is well-known that the anger subscale measures the anger emotional and affective component, as well as the subjects' psychological control and readiness for aggression. The verbal aggression subscale is made up of five items and measures the aggression instrumental-verbal component. Our study results show that item 3, "I tell my friends openly when I disagree with them," has the greatest weight, by cumulating a total of 249 points. Item 11, "When people annoy me, I may tell them what I think of them," has a total of 191 points. The last place comes to item 15, "I can't help getting into arguments when people disagree with me," that gathered 121 points. These subscale items clearly reveal that verbal aggression expresses states of inner helplessness. Regardless of the practiced sport profile, the collected data show that physical aggression has the greatest prevalence (see Figure 2-37 below).

## Conclusions

The in-depth aggression study shows that this personality trait has four important sides, each with different manifestation levels, namely: physical aggression, hostility, anger and verbal aggression. The obtained results indicate that physical aggression is the main way in which the subjects of our research express their aggression. As asserted by the authors of the

Aggression Measurement Scale (Buss & Perry 1992), anger and aggression are two of the violence precursors. Having in view that students seem to have the quickest reaction to aggressive physical contacts, in the process through which they are trained for the teaching career we should underline both the regulatory aspects of the school instruction process and the legal consequences of violent reactions against pupils. As to the investigated subjects, we think that their increased physical aggression results from practicing sport. In order to prevent the transformation of this trait into a risk factor for future careers, the educators are recommended to include some topics, meant to render the students aware of this risk potential, into the content of some study disciplines, such as fundamentals of pedagogy, counselling and guidance, education psychology, the psychopedagogy of adolescents, young people and adults. On the other hand, they are recommended to promote some experiential instruction situations allowing students to better know themselves and to learn how to control their emotional reactions. Although the students consider that they have assertive behaviours in most cases, verbal aggression takes an important place in their profile. That is why it is suitable to highlight, particularly in the process through which students are trained for a teaching career, the necessity to introduce a discipline concerning didactic communication. The students who constantly react in a violent way, in different professional or familial situations will have counselling services at their disposal that should support them to better control their emotional states. Because aggression is a mouldable trait, we agree to the idea that the psycho-pedagogic competences should be approached by integrating them into the specialty areas. If the teacher's specialty training is solid, their hostility and anger, especially at the beginner level, will be diminished. Through the competences they possess and exert under a mentor's coordination, the trainee teacher will become more self-confident and conduct attractive and efficient lessons. Thus, it will not be necessary for him to use aggressive reactions to persuade his pupils that they also need to work during the physical education classes. Psycho-pedagogic and specialty competences will support the process of teaching specific content in an instructional environment where the pupil is respected from the physical and emotional points of view.

## References

Buss, A. H. & Perry, M. P. (1992). "The Aggression Questionnaire." *Journal of Personality and Social Psychology* 63 (3): 452–459.

Catalano, R. F., Loeber, R. & McKinney, Kay C. (1999). "School and Community Interventions to Prevent Serious and Violent Offending." *Juvenile Justice Bulletin* 1: 12.

*Cauzele violenţei şcolare* [Causes of School Violence]. http://articole.famouswhy.ro/cauzele_violentei_scolare/.

International Bureau of Education. (1997). *Violence at School: Global Issues and Interventions*. Lanham, MD: Bernan Press.

Leone, P. E., Mayer, M. J., Malmgren, K. & Meisel, Sheri M. (2000). "School Violence and Disruption: Rhetoric, Reality, and Reasonable Balance." *Focus on Exceptional Children* 33 (1): 1–20.

Neacşu, I. (2010). *Introducere în psihologia educației și a dezvoltării* [Introduction to the Psychology of Education and Development]. Iași: Polirom.

**Figure 2-35. Graphical representation of the items measuring the hostility aspects**

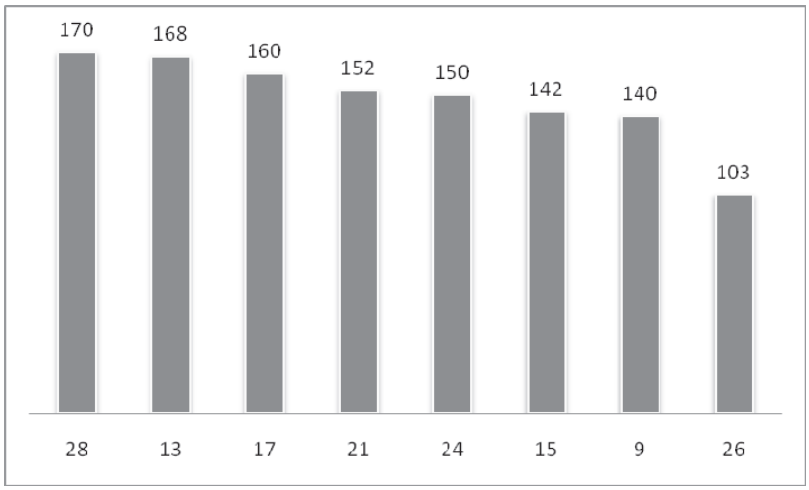


**Figure 2-36. Graphical representation of the items measuring the physical aggression aspects**

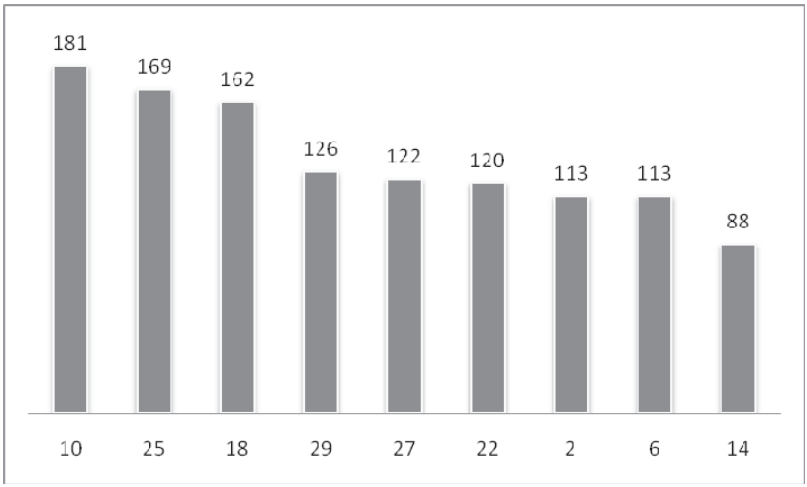



**Figure 2-37. Graphical representation of the items measuring the anger aspects**

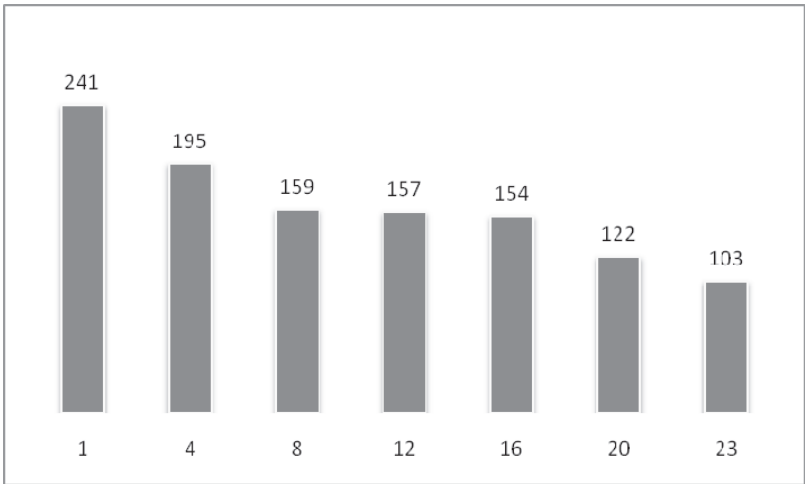


**Figure 2-38. Graphical representation of the items measuring the verbal aggression aspects**

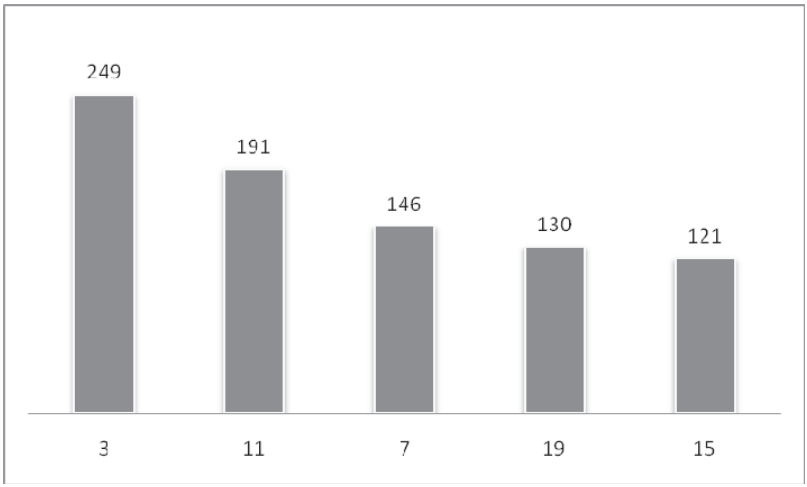
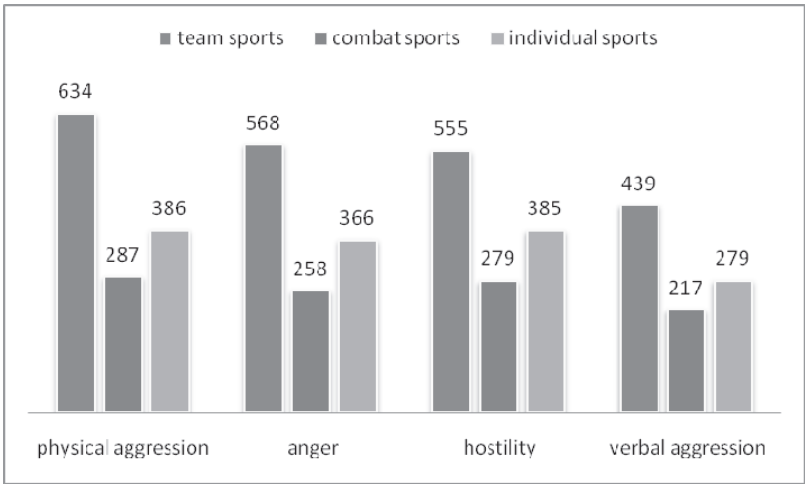



**Figure 2-39. Aggression prevalence depending on the sport profile**



# PERFORMANCE LEVEL ANALYSIS AND OPTIMIZATION OF THE BUCHAREST UNIVERSITY BASKETBALL TEAM: A MODEL

ADRIANA STOICOVICIU

## Introduction

Starting from the idea that the competitive factor represents a central element of society, present in any domain as a regulation and social development factor, sports activities organized in schools and universities aim at enhancing all the aspects, attitudes and behaviours predominantly characterizing the individual's psychic and socio-professional life.

Within the Bucharest University, we organized representative teams on sports disciplines. These teams were made up of selected students, regardless of education cycle, with a high motricity level and an appropriate technical-tactical preparation.

Our basketball team participates every year in all university competitions where, despite the high-level contest determined by the presence of professional players, it has been ranked, in recent years, among the first five best teams in the country. By taking into account that our female players are not professional, we can assert they have obtained positive results, but this does not stop us from wishing for an improvement in their performances.

## Purpose of the Research

This chapter aims at identifying the causes that could represent the main factors susceptible to hinder the obtaining of better performances (to be ranked among the first three teams in the University National Championship), but also at finding some solutions meant to improve the results of the Bucharest University basketball team.

## Method and Subjects

We started with the SWOT analysis as an efficient method for the strategic planning oriented to the identification of potentials and priorities and to the creation of a common vision on the development strategy achievement.

The next analysis tool for our activity characterization was represented by the Fishbone diagram construction as a method illustrating the main and the secondary causes of a certain effect. This was performed in a group, through the brainstorming process, in order to identify the basic causes of some problems.

Then, we used the Pareto analysis, a technique allowing us to register the number of problems and causes as well as their frequency.

Finally, we drew up a countermeasure plan by searching for solutions and actions to be put into practice as soon as possible.

Our investigated subjects were 15 girl students of the Bucharest University basketball team participating in the University National Championship and, twice a week, in the preparation program within the training sessions planned in the academic year.

## Results

A first step in the establishment of the current situation was to make an inventory of weaknesses, strengths, opportunities and potential threats in the aimed-for process. In the beginning we used the SWOT analysis as an efficient method for the strategic planning oriented to the identification of potentials and priorities and to the creation of a common vision on the development strategy achievement. We actually tried to answer the question “Where are we?” (see Table 2-20 below)

Having in view that sports training increased complexity as a result of performance improvement, the optimization of this process involves organizational factors, facilities and human resources meant to amplify its sphere, which exceeds the limits of an instructive-educative process. Under these conditions, sports activity can be regarded as a system where a primordial role is played by the subsystems called “training” and “competition,” which affect each other.

That is why the next analysis tool for our activity characterization was represented by the Fishbone diagram (see Figure 2-40 below), constructed as a method illustrating the main and secondary causes of a certain effect. This was performed in a group, through the brainstorming process, in order to identify the basic causes of some problems. It is also known under the name of “cause-effect diagram” (see Table 2-22). In this type of

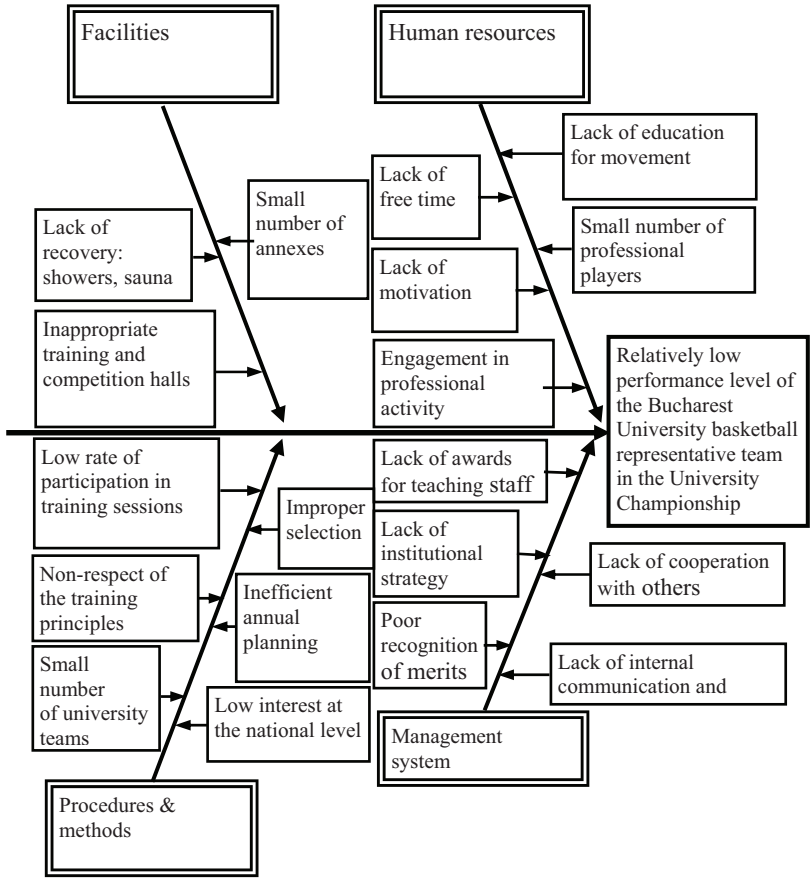
diagram, we recorded the problem to be solved (the relatively low performance level of the Bucharest University basketball team) and the main causes that were grouped in four categories (human resources, facilities, methods, management system), but also the secondary causes, deriving from the major ones.

**Table 2-20. SWOT analysis**

| Strengths | Weaknesses |
|---|---|
| - the existence of a specialized teaching staff<br>- students' desire to get involved in the competitive sports activity<br>- students with a motor experience and an appropriate physical preparation<br>- the existence of physical education within the curriculum<br>- the presence in the sports hall time schedules of some optimum positions for the training sessions of the representative teams | - inappropriate facilities<br>- the charged curriculum<br>- students' involvement in extracurricular activities<br>- a competitive system with a small number of games<br>- the reduced number of hours allocated to sports training<br>- the insufficient popularization of the sports phenomenon<br>- the lack of education and culture for physical and sports activities<br>- the lack of efficiency in attracting funds from sponsorships |
| **Opportunities** | **Threats** |
| - the existence of a tradition in the University competitive activity<br>- a large selection basis<br>- student stimulation by awarding them grades and credits<br>- the existence of a competitive system focused on the qualification for the national phase | - the insufficient funds for training and competitive activities<br>- the institutional activity reorganization |

To find out if there are many interrelated problems or one single common problem generated by multiple causes, with reference to the studied process, we used the Pareto analysis. Through this technique, we registered the number of problems and causes as well as their frequency. Thus, we tried to get the information divided on categories in order to count the repetition of a certain category. The collected data were ordered and this helped us identify the essential problems.

**Figure 2-40. Fishbone diagram**




The Pareto analysis relies on the 80/20 classical rule (80% of the effects come from 20% of the causes). Consequently, we dispose of the necessary information to prioritize the causes. For each one of the input data, we shall estimate the impact on the output data (Russell & Taylor 2008).

Following our analysis, we constructed the Pareto Diagram, which identifies each problem and its frequency.

Twenty-eight causes have thus resulted, among which we highlighted eight requiring solutions for improvement, but also some helpful means to estimate how they could solve the existing problems.

Table 2-21 below shows only one example of the multiple causes selected in order to acknowledge the phenomena and to identify the existing issues.

**Table 2-21. Cause – effect Matrix**

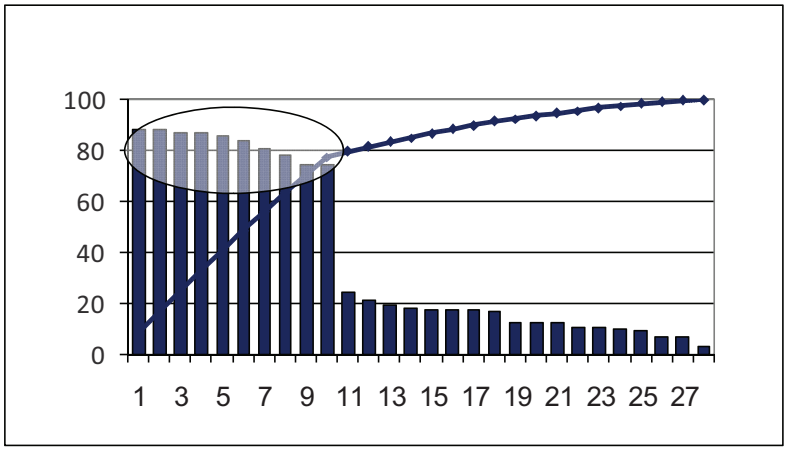
| CAUSE-EFFECT MATRIX | | PT 3 | ThT 3 | TaT 4 | CT 5 | PsT 3 | |
|---|---|---|---|---|---|---|---|
| **Type** | **Causes (input data)** | | | | | | |
| Human | Small no. of professional female players | 2 | 5 | 5 | 5 | 3 | 75 |
| | Charged curriculum | 3 | 4 | 4 | 4 | 3 | 66 |
| | Engagement in the professional activity | 3 | 4 | 4 | 4 | 3 | 66 |
| | Lack of motivation | 4 | 2 | 2 | 3 | 5 | 56 |
| | Lack of education for movement | 4 | 4 | 4 | 4 | 4 | 72 |
| | Lack of concordance between the no. of students involved in sports activity and the total students | 2 | 4 | 4 | 4 | 4 | 66 |

PT – Physical training, ThT – Technical training, TaT – Tactical training, CT – Competitional training, PsT – Psychological training

The examination of the causes that have determined a certain effect led to the creation of some specific methodologies for our activity analysis and diagnosis.

The strategic management is the process through which we can obtain effects materialized in the significant performance increase, the system position consolidation and the strategy implementation and control, to achieve the taken mission and to ensure the competitive advantage (Gregory 1992).

**Figure 2-41. Cause Diagram**




The strategic decision-making related to the mission-defining, the establishment of the strategic objectives and of the strategy necessary to accomplish them, and the application of the plan concretizing the respective strategy all rely on an ample process of analysis and evaluation of the competitiveness situation, and its capacity to cope with changes in the surrounding environment (Tague 2004).

## Conclusions

For some obvious causes (lack of motivation, small number of female players who practiced or still practice performance sports, lack of education for movement, low rate of participation in training sessions, improper selection, inappropriate facilities, etc.), we drew up a countermeasure plan by searching for solutions and for the actions to be put into practice as soon as possible.

To conclude, we want to emphasize that physical education includes a group of activities affecting the other aspects of education because it builds up and improves some qualities and skills which, through a specific transfer, will also have an impact on the individual's personal and professional life.

All these approaches focus on problems related to instruction process efficiency and compatibility with the requirements of a modern and highly qualitative education (see Table 2-22 below).

**Table 2-22. Countermeasure Plan**

| | Selected causes | Solutions (what) | Planned actions (how) |
|---|---|---|---|
| Internal | Lack of motivation | Increasing students' motivation level | Developing a motivation program based on the "3 Ls" principle—"Lean, Lead, Learn" |
| | Small number of female players | Increasing the number of female players who practice or practiced basketball | Developing an aggressive communication campaign among students and teachers |
| | Improper selection | | Cascading the campaign coordination responsibilities to the students, creating opportunities for their personal development |
| | Lack of education for movement | Lobby for movement, for sports | |
| | Low rate of participation in training sessions | Students' engagement in sports activities and their participation in conceiving extracurricular activities | Involving students in the implementation of some projects of the type Ideal Training, Mixed Tournament etc. by using some analysis and planning modern methods (Brainstorming, 5 WHY's, Pareto, Gant, etc.) |
| | Reduced number of training sessions and games | | |
| External | Inappropriate training and competition halls | Attracting funds for the internal and external plans | Proposing some projects for the fund attraction by the competent bodies |
| | Shortage of teaching aids | Efficient distribution of budgeted funds | Involving the department in the annual budgetary exercise |

## References

Gregory, F. (1992). "Cause, Effect, Efficiency & Soft Systems Models." *The Journal of the Operational Research Society* 44 (4): 333–344.

*Pareto Analysis Decision Making Techniques from Mind Tools*. http://www.mindtools.com/pages/article/newTED_01.htm.

*Pareto Analysis*. http://www.hci.com.au/hcisite2/toolkit/paretos.htm.
Russell, Roberta S. & Taylor, B. W. (2008). *Operations Management: Creating Value along the Supply Chain*. Hoboken, NJ: Wiley.
Tague, Nancy R. (2004). *Quality Toolbox*. Milwaukee, WI: ASQ Quality Press.

# HYDRO KINESIOTHERAPY IN THE REHABILITATION OF POSTURAL DEFORMITIES OF THE SPINE (SCHEUERMANN'S DISEASE)

TIBERIU TĂTARU, GHEORGHE MARINESCU, DANIELA ENE AND VALERIA BĂLAN

## Introduction

Scheuermann's disease is an ancient disorder (Tătaru 2012), which only in 1921 became notorious acquiring its name from the Danish specialist in radiology, Holger Werfel Scheuermann. Scheuermann's disease or juvenile kyphosis represents a primary link in a chain of consequences—structural impairments of the spine during teenage years determine spondylosis in adulthood and, most likely, senile kyphosis, osteoporosis and sometimes vertebral arthrosis in older individuals. Scheuermann's disease, mostly manifest in teenagers, involves a series of difficulties and troubles affecting the quality of life. Among the most significant are deformities of the spine and, implicitly, postural impairments, which generate a cause-effect relationship chain with serious implications at the level of the body biomechanics, of the joint and muscle function, and the incapacity of maintaining for a long time the orthostatism or sitting position. Scheuermann's disease describes an irreversible structural kyphotic curve. This definition is available when dealing with clinical evaluation—the curvature becomes reversible when we employ certain optimised and objectivised means specific to physical education and sports. Scheuermann's disease has two main forms—the classical and the atypical. These two forms depend on location, manifestation, kyphosis evolution record including symptoms occurring during teenage and after growth is complete. Considering Sorensen's criteria (in Tătaru 2012), the classical form is characterized by the presence of the kyphotic curvature with an angle of minimum 40°, the involvement of at least three vertebrae

in a row, each vertebra at 5° or more, thus determining a structural kyphosis. The vertebral disorder manifests at the thoracic or thoracolumbar level registering the maximum curve at the level of the thoracic area where the apex is frequently located near T7. In this case, the deformity is of a structural nature, obstructing reversibility and recovery through voluntary control. The atypical form (lumbar Scheuermann's disease) is at the level of the thoracolumbar junction or the level of the lumbar spine. It results from damages to the vertebral end plates and sometimes the intervertebral spaces (discs) generating the condition called Schmorl's anterior nodes (in Tătaru 2012), which do not comply with Sorenson's criteria, namely, spine curvature, the three vertebrae in a range and angles of proneness. Most often, the atypical form does not present kyphosis, therefore establishing the diagnosis becomes a difficult task. Radiology reveals the presence of Schmorl's nodes, the contraction of intervertebral areas and the increase of anteroposterior diameters of the damaged vertebral bodies, which may combine to result in the narrowing of the spinal canal at the level of the intervertebral discs. There are various radiological studies which signal a high level of incidence of symmetry impairments associated to the lumbar form of Scheuermann's disease. Thoracic degeneration represents the most frequently encountered form of the disease, the atypical being rare. According to the type of deformities and impairments, the cause of their occurrence, the age, the medical history of the disease and the applied treatments, and the potential correlation to other deformities are aspects that imply different approaches. The physical exercise approach in the rehabilitation process from Scheuermann's disease has not been approved by the field specialists over the years. They have given recommendations against the use of physical exercise as a factor triggering pain, which has always been considered a subjective braking factor in treating this disease. It is a mistake to consider total rest as a solution for reducing pain caused by the spine deformity. Physical effort relying on didactic rules and training adapted to the features of each form of disease (typical or atypical) contributes to solving the cause and to diminishing the effects generated by the disease. The design of individualized recovery programs considering the disease type and form represents a significant vector of research.

## Methods and Techniques

The research aims at demonstrating the fact that following the application of means specific to physical education within exercise programs, one may notice significant improvements of the effects determined by Scheuermann's disease. The creation of programs meant for each form of disease determines the increase of efficiency and significant improvements of the achieved results. The methods applied within the research are methods for documentation and methods for data collection. We have measured and tested the Cobb index, the occiput to wall index, the thoracic Schober index, the lumbar Schober index, the cirtometry index, the pain index, the Klapp index, and the Tomayer index. The experiment, as a method of confirming the hypothesis, is of observational, interpretative nature, involving several independent variables which have determined several dependent variables whose values and statistical significance are pointed out following the data processing and data statistical-mathematical interpretation (arithmetic mean, standard deviation, difference of means, dependent t test, Anova simple parametric test, Cohen's effect size index, variation coefficient). The study included two groups of subjects, one made up of 56 subjects affected by Scheuermann's disease, the typical form, who did not benefit from hydro-kinesiotherapy, and one of 24 subjects suffering from Scheuermann's disease, the typical form, who benefited from hydro-kinesiotherapy. The recovery and research activity was developed within the LARIMED Health Centre in Târgu-Jiu. The centre is equipped with multifunctional complexes, treadmill, ergometers, wall bars, adjustable and fixed bar, bench, canes, dumbbells, sandbags of different weights, medicine balls and Swiss balls, allowing for the elaboration of complex and diversified exercise programs. The swimming pool (25 m x 15 m), with progressive depth (starting from 60 cm to 1.8 m), presents the standard equipment (different floats, fixed bar, flexible bar, flotation rings, weights) and provides the adequate environment for water rehabilitation and hydro-kinesiotherapy programs. The physical exercise performed in the gym or the pool represents the main means of rehabilitation. Therefore, various exercise programs aground and in the water aim at the typical form of the disease. For the development and the application of the methods belonging to the hydro-kinesiotherapy program, we have considered the recommendations related to the specific program proposed by the specialists (Sbenghe 1987; Drăgan, in Tătaru 2012), as well as the recommendations of the hydro-kinesiotherapy Koury's six-stage care planning (1996, 61–62) which allows the achievement of an individualized therapy program for each patient in the short- or long-term according to the possibilities and needs.

## Results and Discussion

For the research relevance, we have abstracted and presented from the large number of collected and interpreted data only a part of the experiment. For this reason, we have pointed out the results of the testing between the groups submitted to the experiment—Scheuermann's disease, typical form—and the rehabilitation programs with or without hydro-kinesiotherapy (see Table 2-23 below).

**Table 2-23. Statistical-mathematical values corresponding to each index evaluated in the lot without hydro-kinesiotherapy**

| Measured indices | Test | Mean | Difference F-I | Std. Dev. | Vc | Effect size | t | p |
|---|---|---|---|---|---|---|---|---|
| Cobb | I | 63.35 | -11.77 | 7.97 | 12.59% | High to | 20.93 | <0.05 |
| | F | 51.58 | | 5.82 | 11.28% | very high | | |
| Occiput to | I | 13.63 | -4.11 | 4.79 | 35.14% | High to | 13.02 | <0.05 |
| wall | F | 9.52 | | 3.49 | 36.72% | very high | | |
| Thoracic | I | 1.74 | 2.04 | 0.67 | 38.51% | High to | 25.76 | <0.05 |
| Schober | F | 3.77 | | 0.60 | 15.86% | very high | | |
| Lumbar | I | 1.86 | 1.28 | 0.85 | 45.94% | High to | 19.69 | <0.05 |
| Schober | F | 3.14 | | 0.74 | 23.65% | very high | | |
| Cirtometry | I | 2.39 | 1.39 | 0.73 | 30.42% | High to | 21.30 | <0.05 |
| | F | 3.77 | | 0.57 | 15.05% | very high | | |
| Pain | I | 4.58 | 6.54 | 1.73 | 37.81% | High to | 26.53 | <0.05 |
| | F | 11.12 | | 2.14 | 19.23% | very high | | |
| Klapp | I | 0.89 | 1.04 | 0.75 | 83.65% | High to | 14.65 | <0.05 |
| | F | 1.93 | | 0.73 | 37.75% | very high | | |

**Std. Dev.—standard deviation hydro-kinesiotherapy, Dif. F-I—difference between the initial and the final testing, Vc—variability coefficient, t—t dependent test, p—critical reference threshold to which F value is reported**

The statistical values achieved following the statistical processing of data deriving from the final testing of the two groups for the measured parameters and testing of statistical hypotheses by means of ANOVA test give the opportunity to observe that the subjects' scores, following the rehabilitation programs applied to each group, indicate significant differences for all indices ($p<0.05$), except for the thoracic Schober index where $p>0.05$ (Table 2-24).

**Table 2-24. Statistical-mathematical values calculated for each index evaluated in the lot submitted to hydro-kinesiotherapy**

| Measured indices | Test | Mean | Difference F-I | Std. Dev. | Vc | Effect size | t | p |
|---|---|---|---|---|---|---|---|---|
| Cobb | I | 71.96 | -16.13 | 4.32 | 6.00% | High to | 24.95 | <0.05 |
| | F | 55.83 | | 4.76 | 8.53% | very high | | |
| Occiput to | I | 10.00 | -3.13 | 2.32 | 23.2% | High to | 12.84 | <0.05 |
| wall | F | 6.88 | | 2.11 | 30.7% | very high | | |
| Thoracic | I | 1.67 | 2.33 | 0.64 | 38.2% | High to | 14.00 | <0.05 |
| Schober | F | 4.00 | | 0.66 | 16.5% | very high | | |
| Lumbar | I | 3.13 | 0.67 | 0.68 | 21.7% | High to | 3.56 | <0.05 |
| Schober | F | 3.79 | | 0.78 | 20.5% | very high | | |
| Cirtometry | I | 1.46 | 2.92 | 0.51 | 34.9% | High to | 18.42 | <0.05 |
| | F | 4.38 | | 0.49 | 11.3% | very high | | |
| Pain | I | 2.75 | 10.25 | 1.33 | 48.3% | High to | 26.84 | <0.05 |
| | F | 13.00 | | 1.50 | 11.6% | very high | | |
| Klapp | I | 0.46 | 2.00 | 0.51 | % | High to | 16.61 | <0.05 |
| | F | 2.46 | | 0.51 | 20.7% | very high | | |

**Std. Dev.—standard deviation hydro-kinesiotherapy, Dif. F-I—difference between the initial and the final testing, Vc—variability coefficient, t—t dependent test, p—critical reference threshold to which F value is reported**

The difference between the means of the two groups, considering each parameter, indicates a better evolution of subjects submitted to a program based on hydro-kinesiotherapy, not including the Cobb index for which the better results are in the group following a program free from hydro-kinesiotherapy (see Table 2-25 below).

The effect size varies from very low to medium to high between the results of the two groups, and as a prevailing interval, we consider the low size to medium (72%). A very low-size effect is in the thoracic Schober index, for which the null hypothesis is approved, and the research hypothesis is rejected. We may notice that the results distribute similarly, relatively, in a homogenous or non-homogenous manner. As a conclusion, one may state that better results are in the subjects following a rehabilitation program associated to hydro-kinesiotherapy, being available for all parameters, excluding the Cobb index. Table 2-26 below presents the values of the arithmetic means of the final testing.

**Table 2-25. Comparative statistical-mathematical values of the two groups (with and without hydro-kinesiotherapy) in the lot submitted to hydro-kinesiotherapy versus the lot without hydro-kinesiotherapy**

| Measured indices | Test | Mean | Difference F-I | Std. Dev | Vc | Effect size | t | p |
|---|---|---|---|---|---|---|---|---|
| Cobb | WH | 55.83 | -4.25 | 4.76 | 8.53% | Low to | 9.99 | <0.05 |
| | OH | 51.58 | | 5.82 | 11.28% | medium | | |
| Occiput to | WH | 6.88 | 2.64 | 2.11 | 30.72% | Low to | 11.48 | <0.05 |
| wall | OH | 9.52 | | 3.49 | 36.72% | medium | | |
| Thoracic | WH | 4.00 | -0.23 | 0.66 | 16.48% | Very low | 2.31 | <0.05 |
| Schober | OH | 3.77 | | 0.60 | 15.86% | | | |
| Lumbar | WH | 3.79 | -0.65 | 0.78 | 20.55% | Low to | 12.62 | <0.05 |
| Schober | OH | 3.14 | | 0.74 | 23.65% | medium | | |
| Cirtometry | WH | 4.38 | -0.60 | 0.49 | 11.30% | Low to | 20.51 | <0.05 |
| | OH | 3.77 | | 0.57 | 15.05% | medium | | |
| Pain | WH | 13.00 | -1.88 | 1.50 | 11.57% | Low to | 15.26 | <0.05 |
| | OH | 11.12 | | 2.14 | 19.23% | medium | | |
| Klapp | WH | 2.46 | -0.53 | 0.51 | 20.70% | Low to | 10.45 | <0.05 |
| | OH | 1.93 | | 0.73 | 37.75% | medium | | |

**Where: WH—with hydro-kinesiotherapy; OH—without hydro-kinesiotherapy; Std. Dev.—standard deviation hydro-kinesiotherapy; Dif. WH-OH—difference between the group values; Vc—variability coefficient; F—calculated value during ANOVA test; P—critical reference threshold to which F value is reported**

**Table 2-26. Arithmetic mean values to the final evaluations undertaken by the two groups submitted to tests (with and without the hydro-kinesiotherapy)**

| | Without hydro-kinesiotherapy | With hydro-kinesiotherapy |
|---|---|---|
| Cobb index | 51.58 | 55.83 |
| Occiput to wall index | 9.52 | 6.88 |
| Thoracic Schober index | 3.77 | 4 |
| Lumbar Schober index | 3.14 | 3.79 |
| Cirtometry index | 3.77 | 4.38 |
| Pain index | 11.12 | 13 |
| Klapp index | 1.93 | 2.46 |

A comparison of processed data registered by the two groups (with or without hydro-kinesiotherapy) to the final evaluations reveals a value superiority of the group submitted to hydro-kinesiotherapy, except for the

Cobb index (justified by the discrepancy between the values considering the fact that the group submitted to hydro-kinesiotherapy is numerically reduced, than by the low values attributed to the results). The evolution of these data relies on the improvements registered at the level of all followed parameters, on the results of the final evaluations recommending the correlation between the gym exercise program and the hydro-kinesiotherapy program proposed by us. The reduced fluctuations registered by the statistical-mathematical indices between the two final tests show the fact that the indoor exercise program has succeeded in determining significant changes in subjects' posture and condition. However, one cannot neglect the benefits provided by the aquatic rehabilitation program. A significant improvement is seen when dealing with the cirtometry index, for the group performing hydro-kinesiotherapy, confirmed by the potential of the aquatic gymnastics in fortifying the respiratory system (due to hydrostatic properties proved by the water, previously presented). The size of the effect determined by this index varies from medium to high. Cobb, lumbar Schober, occiput to wall, pain, and Klapp indices recorded an effect size varying from low to medium, an aspect with outstanding clinical and practical significance. Less obvious are the differences registered for the thoracic Schober index, indicating a low effect size justified through mathematical calculation rather than lack of results or importance. We emphasize again the clinical and practical importance of increases in values, though they are not mathematically spectacular.

## Conclusions

After applying the exercise programs and testing the subjects of the two groups, we have concluded that, in the group performance without hydro-kinesiotherapy:

- The arithmetic means have registered improved values concerning all the evaluated parameters
- Any positive value, higher than 0, for the difference of means, represents a relevant indicator marking the evolution and the general tendency of values
- Data amplitude has shown a high level of homogeneity of the value group to the final testing, revealing an even evolution translated by the increase of all evaluated indicators;
- The variability coefficient has confirmed the tendency of achieving homogenous data to the final testing

- Cohen's "effect size" index has registered values varying between 1.73 (occiput to wall index) and 3.51 (pain index), indicating the evolution of values and their intensity.

And in the group performance with hydro-kinesiotherapy:

- The arithmetic means have registered significant increases varying from 0.46 (Klapp index) and 71.96 (Cobb index) to the initial testing, to 55.83 (Cobb index, whose diminution means the progress) with a minimum of 2.46 (corresponding to Klapp index)
- The difference of means involves high values varying between 0.67 (lumbar Schober index) and 16.13 (Cobb index)
- There is a progress of data amplitude between the two evaluations, from the initial interval of 1–15 to the final one of 1–19, which implies a value expansion of the achieved results
- The variability coefficient (as well as the standard deviation) has revealed the level of value homogeneity
- Cohen's "effect size" index has registered values between 0.73 (for the lumbar Schober index) and 5.48 (pain index), which indicate the quantity and quality of the progress achieved (without mentioning their significance).

Comparing the final testing of the two groups, one may observe the value superiority of the group submitted to hydro-kinesiotherapy, an aspect justified by the water effect on the body, in general, and on the spine, in particular. The evaluation, the data processing and the calculation of statistical-mathematical indicators confirm and support the efficiency of exercise programs proposed by us, though we admit the opportunity of conceiving different programs for different forms of disease.

## References

Koury, J. M. (1996). *Aquatic Therapy Programming: Guidelines for Orthopaedic Rehabilitation*. Champaign, IL: Human Kinetics.

Tătaru, T. (2012). *Oportunităţi şi limite în reabilitarea defectelor coloanei vertebrale în boala lui Scheuermann prin educaţie fizică* [Opportunities and Limits for the Rehabilitation of Spinal Misalignments when Dealing with Scheuermann's Disease through Physical Education Specific Means]. Teză de doctorat. Universitatea Naţională de Educaţie Fizică şi Sport Bucureşti.

# CHAPTER THREE

# SOCIAL MEDICINE

# USE OF ILLICIT DRUGS AND SUICIDAL MANIFESTATIONS IN YOUTH: A CROSS-SECTIONAL STUDY

AURORA-CARMEN BĂRBAT

## Introduction

Adolescence is a time of many transitions for both teens and their families (Thombs 1999). A retrospective review of studies showed the association of suicide attempts with suicidal ideation, previous suicide attempts, depression, mental disorders, life stress, abuse, impulsive behaviour, hopelessness and drug abuse (Kashani et al. 1998).

The health effects of drug consumption affect the individuals, their families and the societal level as a whole. National and international bodies such as the United Nations and the European Union are constantly trying to plan and implement policy measures aiming to reduce the negative consequences of drug use and abuse (Swendsen et al. 2012):

> The Pompidou Group at the Council of Europe provides a forum for European ministers, officials and other professionals where they can co-operate and exchange information about drugs. The main mission is to facilitate the triangulation between policy, practice and research in order to promote evidence-based policy with a focus on day-to-day practice, as well as local level policy and practice.
>
> (The 2003 ESPAD Report, 13)

The aim of this study is to examine high school students' suicidal behaviour related to the use of illicit substances.

## Methodology

The study included 2,908 high school students of Timiş County Romania, from grades 9 to 12, who took part in the survey in early 2005 (Bărbat 2010, 80–90) They a 126-item questionnaire in roughly sixty minutes (CORT 2004 Inventory) covering health risk behaviours such as family

environment, nutrition habits, substance use, physical activity, aggressiveness, depression, and sexual behaviour. We ensured student participation was both voluntary and anonymous. We found reliability coefficient values ranging from 0.55 to 0.9 (Ursoniu et al. 2009).

The design of the CORT 2004 Inventory relied on the following Romanian and international studies:

- The American study Monitoring the Future
- The European study ESPAD (The European School Survey project on Alcohol and other Drugs)
- The American study YRBSS (Youth Risk Behaviour Surveillance System)
- The Timiş County CAST study (Use of Alcohol, Drugs and Tobacco).

## Results

### Sample description

The sample (n=2908) contained 1,410 boys (48.5%) and 1,498 girls (51.5%) from cities 2,372 (81.6%), towns 404 (13.9%) and villages 132 (4.5%). The school profile included theoretical high schools 1,026 (35.3%), industrial high schools 1,124 (38.6%), vocational high schools 662 (22.8%), and confessional high schools 96 (3.3%). The response rate was 74.6%.

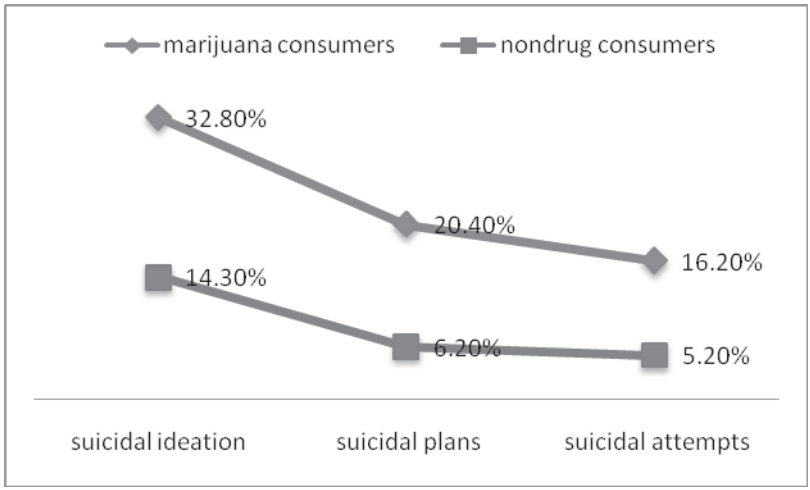
### Prevalence of any illicit drug use

From 151 declared drug users, 138 participants used cannabinoid derivatives (91.3%, 138 students), followed by ecstasy users (10%, 15 students), LSD users (8.6%, 13 students), and cocaine consumers (7.9%, 12 students). The percentage of consumers of any illicit drugs (4.5%) was higher in this study than the reported Romanian average (2%) for experimental use (once or twice per lifetime) within the ESPAD 2003 survey with a higher prevalence in males (5.2% vs. 3.4%); 3.4% of high school students have tried a drug only once or twice (experimental use). According to the ESPAD 2003 Report, they found comparable percentages in Cyprus and Turkey (2% each), Greece (3%), Norway and Switzerland (4% each) (The ESPAD 2003 Report, 383–386).

**Drug Use and Suicidal Behaviour**

From the 138 marijuana users, 45 (32.8%), alongside 392 non-drug users (only 14.3%), admit that suicidal ideation tormented them. Suicidal plans and attempts follow a symmetrical evolution in both marijuana and non-drug users, with significantly decreased values (see Figure 3-1 below).

**Figure 3-1. Suicidal behaviour related with illicit drug (non) use (p≤0,000)**



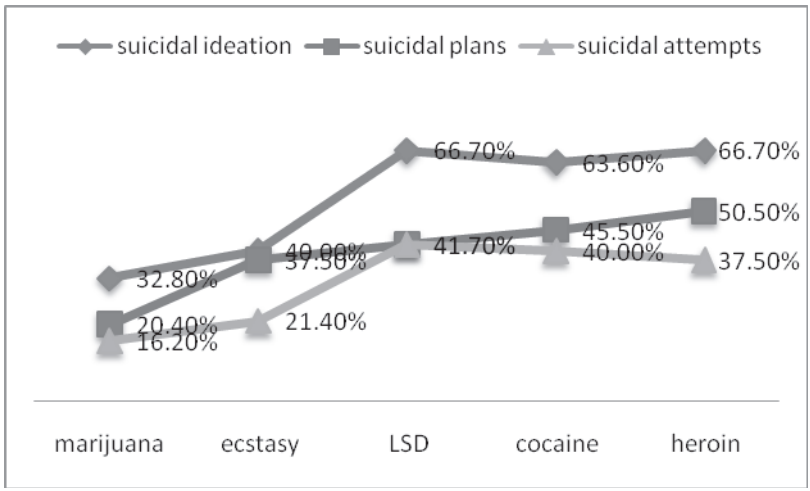

In 2009, suicide as cause of death among teenagers aged fifteen to nineteen registered six cases per hundred thousand in Romania (OECD Family database CO4.4; teenage suicide, 2).

Additional to these data, an entire body of international studies suggest an association between depressive disorders and cannabis use in adolescents. In a 2002 Australian research analysing mental health in teenagers using cannabinoids, the authors reported that: "Use increased rapidly with age, was more common in adolescents living with a sole parent and was associated with increased depression, conduct problems and health risk behaviours …" (Rey 2002, 220). At the same time: "The association between cannabis use and suicidal ideation may be linked to common risk factors such as borderline personality disorder traits, socio-demographics and family factors" (Chabrol, Mabila & Chauchard 2008, 15). As already expected, the most dangerous illicit psychotropics linked with suicidal behaviours were LSD, cocaine and heroin (see Figure 3-2 below).

## Conclusions

The use of any illicit drug by adolescents from Western Romania is a reality (5.2%): 4.7% of Timiş County high school students admitted the use of cannabis. According to the ESPAD 2011 Report in 2011, the lifetime use of cannabis in Romanian adolescents reached 7%. During the same period, the prevalence of any illicit drug use was 5%, 3% higher than in 2003 (The ESPAD 2011 Report 2012, 12).

**Figure 3-2. Suicidal behaviour related with illicit drug use (p≤0.000)**




Given the increasing frequency of marijuana use, parents, teachers, social workers and therapists need to make enquiries about its use, particularly among adolescents, in order to prevent both wide and further drug use.

Clinicians should think about the risk of depression in adolescents who use illicit drugs and also enquire about their use in depressed adolescents.

### Limitations

Even though data are satisfactory, given that the high rate of participation in the study makes it relevant with regard to the high school students group from the Timiş County (Romania), they should not be extended to other groups of adolescents as due to the cross-sectional nature of the study, associations do not reflect causal relationships. At the same time, we may have generated some errors based on self-reported behaviours.

## Acknowledgement

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## References

Bărbat, A. C. (2010). *Adolescenţii şi drogurile—repere socio-psihologice* [Adolescents and Drugs: Socio-Psychological Milestones]. Timişoara: Victor Babeş.

Chabrol, H., Mabila, J. D. & Chauchard, E. (2008). "Influence of Cannabis Use on Suicidal Ideations among 491 High-School Students." *Encephale* 34 (3)*:* 270–273.

Kashani, J. K., Suarez, Lourdes, Luchene, L. & Reid, J. C. (1998). "Family Characteristics and Behaviour Problems of Suicidal and Non-Suicidal Children and Adolescents." *Child Psychiatry & Human Development* 29 (2): 157–168.

OECD, Social Policy Division Directorate of Employment, Labour and Social Affairs. (2011). *CO4.4: Teenage Suicide.* http://www.oecd.org/els/familiesandchildren/43200195.pdf.

*Parents Often Naive About Children's Drug Use.* (2006). http://www.almotamar.net/en/984.htm.

Rey, J. M., Sawyer, M. G., Raphael, Beverley, Patton, G. C. & Linskey, M. (2002). "Mental Health of Teenagers Who Use Cannabis: Results of an Australian Survey." *The British Journal of Psychiatry* 18: 216-221.

Swendsen, J., Burstein, M., Case, B., Conway, K. P., Dierker, L., He, J. & Merikangas, K. R. (2012). "Use and Abuse of Alcohol and Illicit Drugs in US Adolescents: Results of the National Comorbidity Survey-Adolescent Supplement." *Archives of General Psychiatry* 69 (4): 390-398.

*Teen Drug Abuse.* (2012). http://www.medicinenet.com/teen_drug_abuse/article.htm.

*The 2003 ESPAD Report*. (2005). http://www.espad.org/Uploads/ESPAD_reports/2011/The_2011_ESPAD_Report_FULL_2012_06-08.pdf.

*The 2011 ESPAD Report.* (2012). http://www.espad.org/Uploads/ESPAD_reports/2011/The_2011_ESPAD_Report_FULL_2012_06-08.pdf.

*The Brain Addiction.* Online: www.teens.druguse.gov.

*The Science behind Drug Use.* Online: www.teens.druguse.gov/.

Thombs, D. L. (1999). *Introduction to Addictive Behaviours*. New York, NY: Guilford Press.

Ursoniu, S., Putnoky, S., Vlaicu, B. & Vlădescu, C. (2009). "Predictors of Suicidal Behaviour in a High School Student Population: A Cross-Sectional Study." *Wiener klinische Wochenschrift* 121 (17–18): 564–573.

# NORMALITY OF NONVERBAL BEHAVIOUR FROM THE PERSPECTIVE OF INFORMATIONAL PSYCHIC LEVELS

VIRGIL ENĂTESCU
AND VIRGIL-RADU ENĂTESCU

Mental functions have an informational specificity, being unique to each individual's personality. The present work relies upon the informational model of mental levels and the model of diagnosis in the n-dimensional space of behaviour. These models do not contradict other models of approach to personality and personality disorders. They succeed, however, in having a strong pragmatic model that allows for understanding in medical thinking.

From our point of view, objective reality is unitary and approachable through instruments of scientific knowledge. Otherwise, the entire intercession of the research would make no sense. On the other hand, the gnosis capacity does not allow for the simultaneous approach of all reality dimensions and this means the division of knowledge into three qualities of the objective reality and interdisciplinary concepts with philosophical category properties of substance, energy and information.

Wiener is the first to define information as neither substance nor energy (Wiener 1965). Information is approached in a subjective or objective manner by three different views. Thus, the first model awards information a pure subjective value, and therefore an idealistic view (ideal model). The second, dual, model gives information a superior subjective or ideal sense based on a material objective support of energy or substance (dual model). The third model considers information as extra-subjective by nature, therefore an ontic reality, itself being one of objective reality's characteristics (ontic model).

Returning to what can be defined as a system in which information circulates, this system needs a source, a channel for information transfer, a message and a receptor. Besides these minimal conditions, the existence of a common code for information coding and de-coding is compulsory. This

general model may be found at the different levels of objective reality organization, from the simplest physical system to the most complex psychical phenomenon. However, this general schema does not explain the subjective or objective nature of information.

A possible step in understanding the difference between these three models (ideal, dual and ontic) is offered by resorting to the analogy of evolution in the history of human thinking over several stages.

The first model is the mythic, totemic, primitive one from when animism dominated human thinking. A more modern derivation of this way of thinking considers movement to be a specific quality of life. The animistic models are resumed by the anthropomorphizing variant, the computer-electronic brain, neuronal networks-brain neuronal structure, artificial intelligence-simple product of human intelligence.

The second model of dual nature seems to be closer to common thinking and has dualism of spirit at its source—corporality. In this model, the material support of information is reached. Moreover, the transmission and recording from a support to another is frequent both in live organisms and technical systems.

These examples are neuronal bio-potentials, transmitted through chemical mediators to the synaptic space, chemical transformation from the retina level, consequently transposed in bio-potentials. Bio-potential memorization in protean structures, and the genetic development plan of any organism in chromosomes, is transposed in nucleic acids, proteins, and so on. Moreover, this dualist model was the benchmark for some misunderstandings leading to the research of corpuscular structures specific to the intimate composition of information, by analogy of the corpuscular or wave nature in what is known to be material.

From our point of view, both information models, ideal and dual, are not satisfactory. Our premises are that any theoretical model may have a logic consistency in which there is cohesion in ideas and logical norms are applied.

Resuming those three models, we provide the arguments that validate or non-validate them reporting to a known reality.

The existence of an entire technical domain, which manufactures information outside of subjectivism with direct practical consequences or, even more, accomplishes intelligent actions without our subjectivism's contribution, constitutes a powerful argument for the third model.

The existence of some extraordinarily complex volumes of information at the human chromosomal level decipher, by the molecular structure, annuls the dualist model and human deciphering code, both gnosic and subjective. The being evolves after a genetic plan, and its understanding

by any subjectivism is not necessary. In addition, the living beings frequently perform the transfer from an energetic support to a material support, and the other way around.

For several years, our research has targeted the human communication analysis from a medical perspective, using specific instruments of cybernetics, informatics and artificial intelligence. Thus, psychiatry relies on a medical analysis of informational processes and human psychic information manufacturing, indirectly deduced from human behaviour.

The experimental and theoretical approach of this domain imposes from the beginning the comprehension of basic concepts, of which the most disputed is the concept of information. Beginning with the early years, we accomplished an information model and accordingly a model of informational structure of the psyche. These methods developed while our research was both the theoretical support and inspirational source.

The evolution model addresses structuring over complexity levels of the ontic reality and, therefore, the information. We consider that there are at least the following general and distinct complexity levels of communication: statistic-, semantic-, gnosic-, heuristic- and pragmatic information.

The statistic level – a basal level – is common to all the technical and live systems. Going on, the semantic level is the most important part of the informational structure especially in the biological world.

The gnosic level is reached by the artificial intelligence with the support of the modern branches of mathematics and is specific for the behavioural level of biology.

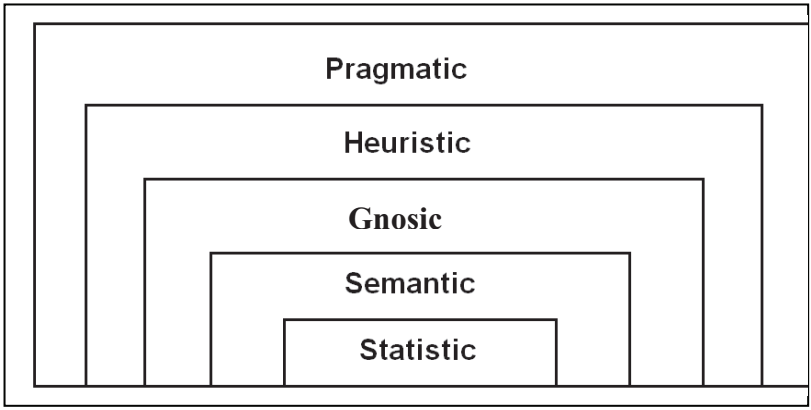
Heuristic level, knowledge generator, has remained so far peculiar for the human being and so does the next level, the pragmatic level that first of all is defined in the human nature, without omitting some essential germs from the animal world and technical systems (Figure 3-3).

In ontic plan, substance, energy and information are objective realities difficult to be separated because of their interdependence while in epistemic plan, due to the different approach, knowledge tools and strict laws specific to each one of them, they are irreducible. Since 1973 we used for this model the graphical representation of reality projection in the three plans of knowledge (Figure 3-4). Moreover, in 1987, in extra-verbal communication, it was made a review on the relation between the knowledge and objective properties of the substance, energy and information (Enătescu 1972; Enătescu & Stoinescu 1973; Enătescu, Pamfil & Stoinescu 1977).

By analogy, within the artificial intelligence systems it can be also described as structuring on the complexity level. As an example, the

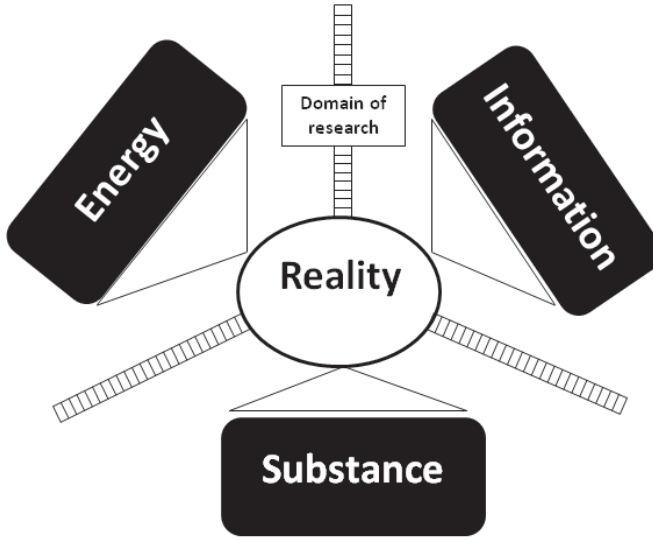
system of analysis and linguistic-mathematical translation of the human gesture is given. Thus, an analogue-digital translation of an image and at this level the statistical processing of the information functions was produced. This is the system statistic level. The "words" (gestures) together accomplish a vocabulary and in this phase we are in the level of information semantic processing. Following the dynamic of the gesture processing in time with other words, as flexible parts of the word adding the spatial coordinates of the gesture as well as the link in time, a grammar will be generated that leads to a superior level, the gnosic level of information—the understanding and de-coding of the gestural message signification. While a capacity of learning by imitation is added to the system we move upward to the pragmatic level of information processing. We do not dare to talk about the heuristic level within artificial intelligence systems as so far we do not know systems that accomplish such processes and because it maintains the mentality that we are also tangential to a view that make us believe that the technique does not reach human performance.

**Figure 3-3. The complexity levels of information (Virgil Enătescu)**




In 1989, we resumed and developed the theoretical impact of the notion of information in medicine. The first model was communicated and published for in 1975 at the WOSC Congress. The model emerged from the necessity of theoretical support for understanding and explaining the medical phenomena.

**Figure 3-4. Reality projection in the three plans of knowing (Virgil Enătescu)**




Emphasized from the beginning is our priority in approaching the integrative model of these levels and the fact that it posed the problem of philosophical clarification of the notion of information with which we operate within this model. This system does not yet clarify the nature of information, conceived as being of purely subjective, an animist model of double, bipolar nature, with subjective significance on objective support through the dualist model and the ontic reality independent from the human subjectivist, a conception to which we adhere. Moreover, we consider that at the level of ontic reality there is substance and energy as well as information in mutual interdependence but with different concept statutes, equal in value. Using this data, our model does not oppose other models on what it can include within a coherent system, having an informational standpoint of organization on the complexity levels of psychic structure parallel with the support of substance and energy.

Returning to the initial model, we want to show its differences referring to the actual model. Biophysical level is a base on which the information is constituted into a degree of predominant static complexity, constituting the system's interface with the environment, a sub-cellular level of biopotentials. The biochemical level integrates the previous level bringing a plus in biochemical phenomena as a support for the signal.

What is essential within the genetic and immunologic frame are a specifically biochemical semantic level, in analogy with the biochemical mechanisms of memory. The integration of the two levels into the synaptic neuronal and sensorial cell level brings about new laws specific for cellular physiology in which the permanent conversion from the physical plan to chemical plan of the signal appears.

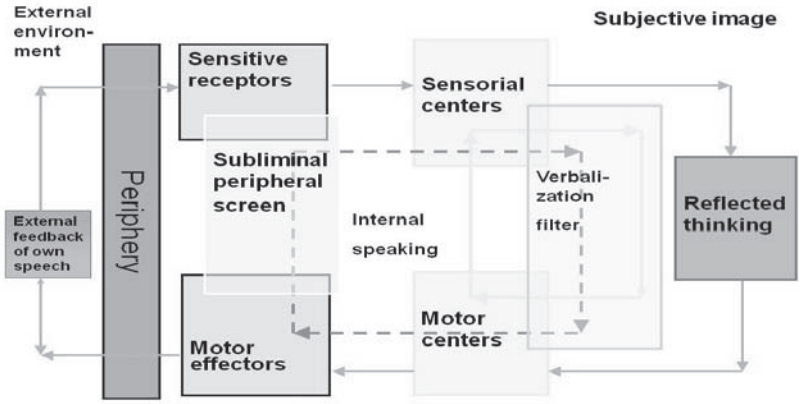
The neuronal circuit level is already a much more complex model, explicable by neuro-cybernetics, neuro-physiology, psycho-physiology and artificial intelligence systems. This level could be considered as reaching the quality of the gnosic level. The neuronal network level proposed by us interferes, in today's terminology, with the field of artificial intelligence, with which it is only a little correspondent, existing at the previous level. To avoid terminological confusions we complete the notion with complex neuronal networks. Certainly, at this level we may talk about the last step of biological structure, that of intelligence. This area of knowledge has greatly developed covering from a part left as free space defined as the noogen level. It is possible for this noogen level to disappear while knowledge of a complex neuronal network level emerges.

At the level of complex networks within the informational psychical processes, large neuronal areas and multiple psychical functions are integrated, a fact demonstrated by the metabolic activities produced. The level of non-reflected logical circuits is the one with the greatest volume of informational operations that may have a rigid-enough determinism within which automatic activities are developed and voluntarily learned. Only a little part from the information produced at this level penetrates the verbalization filter and figurative representation filter (see Figure 3-5 below) at the level of reflected logical operations. Therefore, up to this level we can discuss a gnosic complexity of the information and incipient germs of the heuristic complexity level. An example of this would be intuition.

The verbalization and figurative representation filter permits the appearance of eidetic thinking in images or interior speaking, and therefore of reflective thinking. We consider this level to be very important for abstract thinking. Conceptualized in words, the filter represents a specific human level acquired in the first life-years and only in the presence of the language in which the child grows.

The filter mechanism operates with terminal programs of sensorial system knowledge of subliminal commands sent by communication effectors. In other words, it is about a projection of some impulses or bio-potentials to the organism periphery.

**Figure 3-5. Principial schema of the verbalization filter (Virgil Enătescu)**




This feedback appears to be generated and reinforced in the first years of human communication when the child still thinks aloud and hears its own voice. They will interiorize a specific form of silence speech known as interior speaking. The coupling of interior speaking with other perception spheres increases the complexity of the filter and self-control of the reflective thinking.

The experiences demonstrate the existence at the phonation organs periphery to the motor impulse pattern, while silent speaking represents one of the arguments of this model. We consider that an entire series of modifications are produced here, not only in aphasia but also during the whole hallucinatory pathology. The level of reflected thinking is the highest level of psychic operations within which the informational phenomena is self-perceived, self-controlled, voluntarily driven and in which discernment develops. At this level, we can discuss the heuristic and pragmatic quality of information. Nevertheless, we cannot neglect the special value of language and human communication. It interferes at a particular level, extra-individual but essential in the psychogenesis and during the life in the psychic sano-genesis.

In these terms, we can discuss other inter-individual levels of human communication by which the individuals are inter-connected, and more importantly connected at a common, superior level named the noosphere of the socio-cultural group. This level treasures human experience and knowledge, axiological rules, behavioural rules, etc., and therefore if there is a biological pole of psychical structure then a supra-individual socio-cultural pole also exists.

The pragmatic model value in research is due to the fact that it permits the following of some parameters of communication reported to all the above-analyzed facts, from biology to socio-cultural, and pathologic to normal.

The model is a theoretical argument for psychiatric therapeutic principles, which says that in biological, somatic pathology the patient has to be healed to be reintegrated, while in psychiatric pathology the patient has to be integrated to be healed.

Therefore, we consider our model to be an idoneist model, open for research and optimization through knowing, demonstrating its practical, clinical and psychiatric utility in explaining and generating therapeutic strategies and theoretical values in experimental research of behaviour and extra/verbal communication.

## References

Enătescu, V. & Stoinescu, R. (1973). Un model al nivelurilor informaționale ale psihicului și premise ale cercetării matematice în psihiatrie [A Model of Informational Levels of the Psychic and the Premises of Mathematic Research in Psychiatry]. *Colocviul de Teoria constructivă a funcțiilor, Cluj-Napoca, 6–12 septembrie 1973*.

Enătescu, V. (1972). Elemente de diagnostic extraverbal în spațiul n-dimensional și premisele experimentale ale cercetării matematice în psihiatrie [Elements of Nonverbal Diagnosis in N-dimensional Space and the Experimental Premises of Mathematical Research in Psychiatry]. *Simpozionul "Aplicații ale matematicii în medicină, biologie, farmacie și sociologie", Cluj-Napoca, 21–22 decembrie 1972*.

Enătescu, V., Pamfil, E. & Stoinescu, R. (1977). Extraverbal Communication in Psychiatry. In *Modern Trends in Cybernetics and Systems*. Berlin, Heidelberg, New York: Springer-Verlag. 1185–1204.

Wiener, N. (1965). *Cybernetics or the Control and Communication in the Animal and the Machines*. Cambridge, MA: The MIT Press.

# THE EFFECT OF HYPNOSIS ON THE FLEXIBILITY OF ASSOCIATIVE RECOGNITION MEMORY

VIOLETA ENEA AND ION DAFINOIU

## Introduction

Over time, there have been numerous attempts to use hypnosis in influencing memory. Some studies use hypnosis as a methodological tool in investigations on memory aimed at the ability of hypnotic suggestions to diminish memory (Barnier 2002a, 2002b; Enea & Dafinoiu 2008); other studies focus on the ability of hypnotic suggestions to determine hypermnesia. Hypermnesia occurs when repeated memory testing leads to an increase in the degree of remembrance or recognition (McConkey 1992).

The results of numerous studies that have used the hypermnesia paradigm repeated testing in order to evaluate the effect of hypnosis on memory are contradictory. Thus, some researchers found that hypnotic procedures do not stimulate remembrance to a higher extent than the waking state (Nogrady, McConkey & Perry 1985), while others found an association between hypnotic procedures and improved remembrance of the correct material (Dywan & Bowers 1983; McConkey & Kinoshita 1988; Stager & Lundy 1985). As for confidence associated with memories, some studies report more trust-related errors in hypnosis, i.e. the participants generated incorrect material that they trusted to be correct (Nogrady, McConkey & Perry 1985; McConkey & Kinoshita 1988; Wagstaff 1982).

Crawford (1989) defined flexibility as the degree to which an individual disposes of and uses one of the many available types of strategies or styles of processing information during the various tasks in various states of consciousness. We investigated the effect of hypnosis on flexibility in processing visual information (Enea & Dafinoiu, in press), and, to our knowledge, there are no studies that explicitly refer to hypnosis and flexibility of the associative recognition memory. In this study, we

assumed that alert hypnosis positively influences the flexibility of the associative recognition memory in highly hypnotisable subjects, i.e. improving it and, due to Orne's real-simulator paradigm, alert hypnosis also impacts the low hypnotisable participants. In Orne's real-simulator paradigm, another experimenter trains low hypnotisable participants to behave as highly hypnotisable participants. Recognition memory improves with the increase of the difference between the number of correct answers (hit rates [HRs]) and the number of false alarms (FARs). In recognition tasks, which require discrimination between the studied items (targets) and the unstudied items (foils), recognition is successful when the studied items are recognized (hits), and the unstudied items are rejected (Malmberg & Xu Jing 2007).

## Method

**Independent variables**:

- Hypnotisability levels—highly hypnotisable and low hypnotisable
- Type of hypnosis—traditional and alert
- Type of states of consciousness, with two levels—waking state and hypnosis;
- Type of tasks applied—"yes-no" recognition task (Y/N) and "XY pairs" recognition task.

**Dependent variables**:

- Response time, expressed in milliseconds
- Performance in associative recognition, operationalised as the difference between the ratio of the old items recognized (HITs) and the ratio of the new items incorrectly identified as old (FARs)
- Flexibility of the associative recognition memory, operationalised as performance in recognition correlated with fast response time when passing from one type of task to another and one state of consciousness into another.

## Participants

The participants were 36 volunteer students who received extra credit on their examinations (Enea & Dafinoiu 2011). The selection relied on the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS, A;

Shor & Orne 1962) and the Stanford Hypnotic Susceptibility Scale, Form C (SHSS, C; Weitzenhoffer & Hilgard 1962).

## Materials and Procedure

It is possible to create different types of "trance" within hypnosis—alert hypnosis and traditional hypnosis. We used an ordinary induction method, the Stanford Hypnotic Susceptibility Scale, Form A, which involves suggestions of drowsiness and relaxation, for induction into traditional hypnosis. We used an Elman fast induction technique for induction into alert hypnosis. We distributed the highly hypnotisable subjects and the low hypnotisable subjects into two conditions—traditional hypnosis (9 low hypnotisable participants and 9 highly hypnotisable participants) and alert hypnosis (9 low hypnotisable participants and 9 highly hypnotisable participants).

The experiment required the discrimination between intact pairs and rearranged pairs of words. The intact pairs of words were those used by Liebert, Rubin & Hilgard (1965) in an experiment aimed at verifying the extent to which hypnosis facilitated learning. We selected 15 pairs for study. We formed the rearranged pairs, also 15 in number, by combining different items of the intact pairs. The final list contained a total of 30 pairs, 15 of which were intact and 15 rearranged.

The "yes-no" recognition task (the Y/N task) implies that the subjects answered affirmatively or negatively in order to indicate whether the items forming a pair were studied together or not. For the XY pair recognition task (the XY task), we instructed the subjects to assess, on a four-step Likert scale, how confident they were that they had studied the item pairs together; also, we had previously informed them that some pairs contained unstudied items to which we expected them to answer negatively. Thus, we added 5 randomly selected rearranged pairs to the 15 intact pairs and 10 XY pairs of unstudied items. The final list contained an equal number of studied pairs (15) and unstudied pairs (15).

After studying each pair of items, we assigned the subjects an insignificant task in order to distract their attention for a few seconds only. Then, we tested their memory by applying the yes-no recognition (task Y/N) and the XY pairs recognition task (task XY), both in the waking state and under hypnosis. We counterbalanced both waking state-hypnosis order and task application order. The lists contained specific, easy to remember words, and we updated the material orally.

## Results

For the highly hypnotisable (real) participants, a mixed design 2 (state—waking vs. hypnosis) X 2 (task type—Y/N task vs. XY task) X 2 (type of hypnosis—alert vs. traditional) demonstrated that, generally, the response time was significantly faster for the Y/N recognition task, than for the XY pair recognition task F (1.16) = 22.07, $p<.001$, $\eta^2=.580$. The interaction State X Type of hypnosis (F1.16) = 29.11, $p<.001$, $\eta^2=.645$ had a significant effect, while all the other main effects and interactions were insignificant F*s*<.20, p*s*>.65.

We found that the participants who were induced with alert hypnosis moved more easily from one task to another, since the response time in the two tasks showed no significant differences F(1.16) = 2.79, p=.114, although during the waking state, this difference was noticeable F(1.16) = 4.76, p<.05. This means that the suggestions used during trance had the desired effect, and the participants responded faster than during the waking state.

Within the group of participants under traditional hypnosis there were significant differences when passing from one task to another both in the waking state F(1.16) = 12.45, p<.01, and under hypnosis F(1.16) = 15.46, p<.001. Under hypnosis, we noticed for the Y/N recognition task that the subjects under alert hypnosis (M = 825, SD = 152) answered significantly faster F(1.16) = 10.65, p<.01 compared to the participants under traditional hypnosis (M = 1122, SD = 226). For the XY pairs recognition task, again, the participants under alert hypnosis (M = 993, SD = 277) answered significantly faster F(1.16) = 10.69, p<.01 than those under traditional hypnosis (M = 1517, SD = 392).

In the low hypnotisable participants (simulators), a mixed design 2 (state—waking vs. hypnosis) X 2 (task type—Y/N task vs. XY task) X 2 (type of hypnosis—alert vs. traditional) revealed a significant main effect of the task F(1.16) = 28.59, $p<.001$, $\eta^2=.64$, as well as a significant effect of the interaction between state and task (1.16) = 5.63, $p<.05$, $\eta^2=.260$, all other main effects and interactions being insignificant (F*s* < 2.27, p*s*>.151). We observed that, generally, even the low hypnotisable participants responded significantly faster to the Y/N task (M = 917, SD = 41) than to the XY pairs recognition task (M = 1066, SD = 44). Moreover, the difference between the two tasks is constant both under alert hypnosis F(1.16) = 9.95, p<.01, $\eta^2=.384$, and within the group of participants under traditional hypnosis F(1.16) = 18.77, p=.001, $\eta^2=.540$. Since there is no difference in the response latencies during the waking state compared to

those under hypnosis, or between the participants under alert hypnosis and those under traditional hypnosis, the results are that, in low hypnotisable participants, the suggestions had no effect on the response time to the two tasks (see Table 3-1 below).

**Table 3-1. Average response time (ms) and standard deviations in the two tasks depending on state of consciousness, level of hypnotisability and type of hypnosis induced**

| Group of subjects and type of hypnosis | Waking state | | | | Hypnosis | | | |
|---|---|---|---|---|---|---|---|---|
| | Y/N task | | XY pairs task | | Y/N task | | XY pairs task | |
| | M | SD | M | SD | M | SD | M | SD |
| **Low hypnotisable** | | | | | | | | |
| Alert hypnosis | 910 | 218 | 1089 | 212 | 882 | 212 | 964 | 234 |
| Traditional hypnosis | 889 | 228 | 1109 | 204 | 988 | 163 | 1102 | 171 |
| **Highly hypnotisable** | | | | | | | | |
| Alert hypnosis | 961 | 153 | 1151 | 168 | 825 | 152 | 993 | 277 |
| Traditional hypnosis | 843 | 173 | 1150 | 359 | 1122 | 226 | 1517 | 392 |

A mixed analysis of variance ANOVA 2 (waking state vs. hypnosis) X 2 (Y/N task vs. XY pairs task) X 2 (highly hypnotisable vs. low hypnotisable) X 2 (alert hypnosis vs. traditional hypnosis) revealed a significant main effect of the type of task $F(1.32) = 43.34$, $p<.001$, $\eta^2=.575$, an effect of the interaction between State X Type of hypnosis $F(1.32) = 24.76$, $p<.001$, $\eta^2=.436$, but also a significant effect of the interaction between State X Type of hypnosis X Hypnotisability $F(1.32) = 8.52$, $p<.01$, $\eta^2=.210$. The other main effects and interactions were insignificant, including the main effect of hypnotisability $F(1.32) = 1.67$, $p>.05$, $\eta^2=.050$. This means that, overall, there is no significant difference in the response time between the highly hypnotisable and the low hypnotisable participants.

A mixed design ANOVA 2 (waking state vs. hypnosis) X 2 (highly hypnotisable vs. low hypnotisable) X 2 (alert hypnosis vs. traditional hypnosis) of the percentage of HITs in the Y/N task found all main effects and interactions to be significant ($Fs < 2.21$, $ps>.146$.). We applied a similar procedure to the FARs percentage. Since the Mauchly sphericity test was significant, we applied the Greenhouse-Geisser adjustment; it revealed a significant effect of the interaction between State X Type of

hypnosis F(1.32) = 4.39, p<.05, $\eta^2$=.121. Overall, during the waking state, the subjects in the condition alert hypnosis identified more new items perceiving them as old than under hypnosis F(1.32) = 5.27, p<.05, η2=.141. Nevertheless, the effect is reduced.

For the Y/N task, a mixed analysis of variance ANOVA 2 (waking state vs. hypnosis) X 2 (response—HITs vs. FARs) X 2 (highly hypnotisable vs. low hypnotisable) X 2 (alert hypnosis vs. traditional hypnosis) showed that generally, the percentage of HITs is significantly higher than the percentage of FARs F(1.32) = 9397, p<.001, $\eta^2$=.997, all other main effects and interactions being insignificant (Fs<2.29, ps>140).

A mixed analysis of variance Anova 2 (waking state vs. hypnosis) X 2 (highly hypnotisable vs. low hypnotisable) X 2 (alert hypnosis vs. traditional hypnosis) of the HITs percentage for the XY pairs task showed that all main effects and interactions were insignificant (F*s*<1.3, p*s*>.261). We obtained similar results for the percentage of FARs.

A mixed analysis of variance ANOVA 2 (waking state vs. hypnosis) X 2 (response—HITs vs. FARs) X 2 (highly hypnotisable vs. low hypnotisable) X 2 (alert hypnosis vs. traditional hypnosis) revealed a significant main effect of the type of response F(1.32) = 8848, p<.001, $\eta^2$=.996, the other main effects and interactions being insignificant Fs<2.45, ps>.127. The percentage of HITs was significantly higher than that of false alarms.

To identify performance accuracy (Pr) in the associative pairs recognition, we estimated the difference between the HITs ratio and the FARs ratio, which revealed no significant differences between highly hypnotisable and low hypnotisable participants, or between alert hypnosis and traditional hypnosis, respectively between the two tasks. We also found no correlation between performance level and response latencies, which invalidates the assumption that, under hypnosis, performance increases, while response latencies decrease.

## Conclusions and Discussion

The results obtained confirm the failure of hypnosis in improving memory (Whitehouse et al. 1991), this time in the case of associative recognition memory. Concentration and performance suggestions overemphasize recovery based on familiarity and neglect the slower, but more accurate component of remembrance. The highly hypnotisable subjects decreased the response latency, but without increasing the associative recognition performance, which involved the potential to achieve this. Since the XY pairs randomly contained the studied pairs,

they were less familiar than the intact pairs. Conforming to the suggestions, the highly hypnotisable participants answered faster under alert hypnosis; therefore, the difference between the yes-no task and XY pairs recognition task disappeared. Naturally, an increase in response speed entailed a decrease in response accuracy, but we assumed that hypnosis would counterbalance this effect in the highly hypnotisable subjects, thus leading to performance. This assumption was invalidated.

However, in the low hypnotisable participants (simulators), concentration and performance suggestions did not decrease the response latency. The real-simulator paradigm was not relevant, and the simulators did not know what a highly hypnotisable participant would answer. Although they attempted transfer manipulation (Kolers & Roediger 1984), we cannot state that hypnosis positively influenced the recognition efficiency. As Erickson (1984) argues, rapid induction may lead to compliance, and it is likely to influence a faster response under alert hypnosis.

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## References

Barnier, A. J. (2002a). "Remembering and forgetting autobiographical events: instrumental uses of hypnosis." *Contemporary Hypnosis* 19 (2): 51–61.

—. (2002b). "Posthypnotic amnesia for autobiographical episodes: a laboratory model of functional amnesia?" *American Psychological Society* 13 (3): 232–237.

Crawford, H. J. (1989). "Cognitive and physiological flexibility: multiple pathways to hypnotic responsiveness." In V. A. Gheorghiu, P. Netter, H. Eysenck & R. Rosenthal (Eds.), *Suggestion and Suggestibility: Theory and Research*. Berlin: Springer-Verlag. 155–68.

Dywan, J. & Bowers, K. S. (1983). "The Use of Hypnosis to Enhance Recall." *Science* 222: 184–185.

Enea, Violeta & Dafinoiu, I. (2008) "Posthypnotic amnesia and autobiographical memory in adolescents." *Journal of Cognitive and Behavioral Psychotherapies* 8 (2): 201–215.

Enea, Violeta & Dafinoiu, I. (2011). "Ethical principles and standards in the practice of hypnosis." *Romanian Journal of Bioethics* 9 (3): 210–216.

Enea, Violeta & Dafinoiu, I. (in press). **"**Flexibility in Processing Visual Information: Effects of Mood and Hypnosis." *International Journal of Clinical and Experimental Hypnosis*.

Erickson, M. (1984). "Hypnotic Alteration of Sensory, Perceptual and Psychophysiological Processes." *The Collected Papers of Milton Erickson on Hypnosis II*. New York. NY: Irvington Publishers, INC.

Kolers, P. A. & Roediger, H. L. (1984). "Procedures of Mind." *Journal of Verbal Learning & Verbal Behavior* 23: 425–449.

Liebert, R. M., Rubin, N. & Hilgard, E. R. (1965). "The Effects of Suggestions of Alertness in Hypnosis on Paired-Associate Learning." *Journal of Personality* 33 (4): 605–12.

Malmberg, K. J. & Xu, J. (2007). "On the Flexibility and the Fallibility of Associative Memory." *Memory & Cognition* 35 (3): 545–556.

McConkey, K. M. & Kinoshita, S. (1988). "The Influence of Hypnosis on Memory after One Day and One Week." *Journal of Abnormal Psychology* 97: 48–53.

McConkey, K. M. (1992). "The Effects of Hypnotic Procedures on Remembering: the Experimental Findings and their Implications for Forensic Hypnosis." In E. Fromm & M. R. Nash (Eds.), *Contemporary Hypnosis Research*, 405–427. New York, NY: Guildford Press.

Nogrady, H., McConkey, K. M. & Perry, C. (1985). "Enhancing Visual Memory: Trying Hypnosis, Trying Imagination and Trying Again." *Journal of Abnormal Psychology* 94: 195–204.

Shor, R. E. & Orne, E. C. (1962). *Harvard Group Scale of Hypnotic Susceptibility.* Palo Alto, CA: Consulting Psychologists Press.

Stager, G. L. & Lundy, R. M. (1985). "Hypnosis and the learning and recall of visually presented material." *International Journal of Clinical and Experimental Hypnosis* 33: 27–39.

Wagstaff, G. F. (1982). "Hypnosis and Recognition of a Face." *Perceptual and Motor Skills* 55: 816–818.

Weitzenhoffer, A. M. & Hilgard, E. R. (1962). *Stanford Hypnotic Susceptibility Scale: Form C (SHSS: C)*. Palo Alto, CA: Consulting Psychologists Press.

Whitehouse, W. G., Orne, E. C., Orne, M. T. & Dinges, D. F. (1991). "Distinguishing the Source of Memories Reported During Prior Waking and Hypnotic Recall Attempts." *Applied cognitive psychology* 5: 51–59.

# VULNERABILITY AND PSYCHOPATHOLOGY FROM THE PERSPECTIVE OF PSYCHOSOCIAL INFLUENCES

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The concept of vulnerability is rooted in the systemic integrative holistic bio-psycho-social concept as an explanatory model of psychopathological disorders. The appearance of the psychopathological moment is connected to what, in general terms, we call "predisposition," with the illness itself being a result of the interaction between predisposition, terrain and recent harmful factors. The operational definition of vulnerability is complex, including, but surpassing the notion of "endogenous determinism." Vulnerability is built gradually in the biographical history of the person (and even before that) with a nonlinear and a multi-factorial determinism.

This chapter focuses on the importance of psychosocial influences. The notion of vulnerability has two components: (a) Background vulnerability that can sometimes remain completely hidden and latent, without disappearing, becoming manifest at the onset of the morbid episode, or through some underlying, pre-existing features. (b) Circumstantial vulnerability correlated temporally to the moment of illness and highlighted by certain favouring, activating or "trigger" elements. That is to say that there is a generic and a special vulnerability, correlated to different nosological entities. In terms of psychosocial influences, the most important features are social network and support, the ability to handle stress (coping capacity), social competence and stimulation, family influences and style of education, life changes/events/cycles, and the balance of satisfaction/needs. The complexity of the issue also results from the fact that all these elements may have a dual role. In the situation where they are deficient they constitute elements of vulnerability, correlated with the onset of illness, but also with the prognosis and progression of it. However, when these elements are balanced and functional, they constitute important factors of non-vulnerability (sanogenetic), protecting

against illness, as important inner resources during the "recovery" process. In understanding the notion of vulnerability, one must also remark on the notion of "threshold of vulnerability" (Zubin & Spring 1977). Vulnerability is a dynamic, diachronic process, with oscillations in time, and moments of fragile and/or increased resistance.

## Family Influences and Style of Education

We would like to keep in mind the importance of:

- Child attachment to a key person (the mother), with a good quality contact as a source of positive stimulation while the absence thereof would have a harmful, deconstructing effect (Mahler, Pine & Bergman 1973).
- Absence of significant parental figures (particularly, the motherly figure) makes the person vulnerable, by not allowing an affirmation and harmonious development (Spitz 1964).
- Dysfunctional educational styles (over-protection, manipulation, over-criticism), as well as a distorted extra-verbal communication (double meaning and confusing messages).

Since we are discussing the first years of life, Rutter (1985) notes that psychosocial influences experienced in childhood can act on two or more occasions during adult life.

## Social Network and Social Support

Sociologists study these elements. We will, however, briefly review the importance of the social support network and the psychologically-affective support (Gottlieb 1981; Veiel 1985). The social support network is a continuous buffer against stress, allowing for better social integration of the individual as well as an action in the crisis correlated to a certain moment in time when there are special needs. It is not always that we must only take into account the quantitative aspect, but sometimes also the qualitative aspect. A poor social support network is an important factor of background vulnerability. In psychotic pathology (especially in the case of schizophrenia), long before the onset of illness, in the premorbid-prodromal stages, we find a decrease in the social support network, an essential element in the reduction of the social and global functionality of the person. The onset of illness deconstructs the social support network, and its progressive deficit is an important prognostic factor in the setting

of post-morbid social deterioration. Lack of a social support network, isolation, loneliness and learning what is called "helplessness" are important factors of vulnerability for the depressive pathology. Although it is said that "every man is the architect of his own social network" (Klusmann 1989), the patient suffering from depression cannot appeal to others, for the abyss in which they lay is too deep, too dark and too devastating. The importance of the social support network as a vulnerability factor can also be exemplified in the field of gerontology. The elder loses people in their entourage, loses contact skills and has several limitations through somatic illnesses, making them more vulnerable and thus changing their quality of life. We should also keep in mind the discrepancy between the existing objective situation of the social support network and the subjective expectancy of the person, a discrepancy that may also constitute a vulnerability factor. This vulnerability is often a source of conflict and tension that renders the person even more fragile. Social competence and skills against stress (coping) are other factors that play a role in determining vulnerability in situations where they are deficient, or they might also hold a sanogenetic, protective role when balanced, harmonious and functional.

## Over and Under-Stimulation as Vulnerability Factors

In terms of psychopathology, these two notions are important for different nosological frames; however, in the case of schizophrenia they have a critical role, both in the onset and progression of illness. It is where the junction between social and cognition becomes apparent through information processing. Early research in this field by Wing & Brown (1970) noted that social under-stimulation emphasizes deficient, negative symptoms of schizophrenia while social over-stimulation may precipitate relapse. Current research focuses on social cognition.

## Importance of Life Events for Vulnerability

The issue of life events has been much debated in clinical psychopathology since Jaspers (1913), Kretschmer (1930), Schneider (1950), Petrilowitsch (1960) to Wing & Brown (1970) and Vaughn & Leff (1973). Life events have different consequences, and can sprinkle the day with a neutral, unnoticed, trivial character, but can also cause a sensitization through time, resulting in changes of vulnerability. Life events may have a psycho-traumatic character when they are acute, intense and unpredictable, involving an intense emotional state, usually with the

significance of threat or loss. There are life events that cause changes. Some belong to the biographical normality of the person, on the road of growth and development. These changes, correlated with a good social support network, may increase the resistance of the person, constituting a benefit in the context of development, of the becoming of the person or, when associated with poor social support network, may render the person vulnerable, thus contributing to the appearance of illness. It is also of importance to examine whether life events occur unexpectedly or against a background of anticipation. When we speak of the intensity of life events, we usually mean extreme events. Minor events should not be overlooked, which can concurrently leave the person vulnerable. An aspect that is less essential is that there are several lists of events, divided into positive and negative. The meaning that the person confers to events has value in the perception as positive or negative. At first glance, it would seem that only negatively experienced events make the person vulnerable. An agglutination of positive-meaning events could also cause the person to become vulnerable by overriding and overloading the channel of information processing. It is necessary to identify events that are independent of the person, as well as events that are partially or totally induced by the person, which, through means of feedback, could cause the person to become vulnerable in view of the psychopathological moment. As elements of vulnerability, life events induce comprehensive psychopathological reactions (anxiety, depression). They usually occur in extreme situations with a motivation that comes from inside the person, but also correlated with that which was situated in external reality. This is what Jaspers calls "*Erlebnisreaktion*." For Kretschmer (1930), life events as vulnerable factors correlate with certain typologies of character of the person, causing what he calls "*Personlichkeitsreaktion*." In the works of Petrilowitsch (1960), life events are also private in terms of the temporal-biographical moment. Therefore, there are life events, persistent daily influences from various sectors of action that can maintain tensions causing the person to become vulnerable over time. However, there are also life events (usually with a psycho-traumatic aspect) that ensued years back (even as far back as childhood) that create vulnerability, non-integrated against the background of the psyche, causing a splitting of the person. The articulation with other life events, remote in time, induces psychopathological disorders (the essential mechanism of neurosis). This idea also lies at the basis of cognitive theory which, although not focusing on life events, supports the importance of cognitive distortions caused by distorted learning. The role of life events as elements of vulnerability (in this case, mostly circumstantial vulnerability) is also taken into account in

psychotic pathology (schizophrenia, affective disorders). These events can be triggers for the onset of illness, as well as relapses.

## Failure, Frustration, Compromise

Failure, as a feeling, is bound either to a balance, an assessment of the existential journey, or to an unaccomplished life project. Although, normally, on the outside there is nothing noticeable occurring to others, the inner person is troubled, crushed by desires, collapsed hopes, feelings of devaluation, and low self-esteem. It is, in fact, an internal suffering with a subjective inner distress that increases vulnerability, opening the door to pathology, especially the depressive one. Compromise, as a duality between the accepted and the unacceptable, between the voice of moral consciousness and contrary action, leaves the person vulnerable through the inner duplication and the inner-psychic conflict that it can generate. Frustration, as unmet needs, desires or legitimate claims, can occur in various sectors of the functionality of the person, targeting different material or emotional aspects. It can be correlated to a certain time of life or it can be chronic, prolonged, resulting in increased circumstantial or background vulnerability. Frustration correlates with the assessment mechanism of one's capacities or legitimate claims. Disruption in the evaluation mechanism can often be the source of frustration. From achievements, desires, expectations and wants, results the balance between satisfaction and needs. The imbalance/disruption of this equilibrium can render the person fragile, predisposing them to mental pathology.

## Life Cycles

Chronologically speaking, sequential passages mark our existence from one cycle to another, charged existentially and emotionally during the transition from one cycle to the next. It requires new expectations, goals, engagements and projects. The shifting moment is of more vulnerability, with lower resistance and, thus, predisposing to the development of psychopathological disorders. Life cycles can also be analyzed in terms of functional scope, with the proper description, as follows: family cycle, educational-professional cycle and the housing-household sector. These cycles are the source of life events, as well as frustrations and satisfactions, the place of origin of the social support network, a place where the person becomes socially involved. When the person is in a critical, unfavourable situation, in one or more cycles, background and/or circumstantial vulnerability may increase. Lăzărescu (2010) highlights a

particular aspect, namely the "masking of vulnerability" by hyper-identification with social roles, an issue also commented on by Tellenbach (1981) and Kraus (1999), a mask of "hyper-normality." Such a person is usually mentally complicated, lacking spontaneity, imagination and who cannot withstand and synthetically and creatively overcome ambiguous situations, failing in intimate human relationships, lacking in the ability to appreciate holidays, play and, generally, the ability to enjoy (Lăzărescu 2010). This person, weak and vulnerable to life events and inevitable life changes, may lose their mask behind which they have hidden and, thus, succumb to an episode of illness, usually of depression or anxiety (Kraus 1999).

## Vulnerability and Creativity

Besides the relationship between vulnerability and psychopathology, we will briefly comment on the relationship between vulnerability and creativity. For centuries there has been talk about the link of vulnerability with psychopathology and creativity. The problem is commented on from the time of Aristotle, and the statement "There is a fine line between genius and insanity" (John Dreyden) is already proverbial. There are several studies that analyze the relationship between depressive pathology and creation, among which we would like to mention the studies of Ludwig (1972) and Schildkraut, Hirshfeld & Murphy (1994). Although it varies, approximately 40% of artists have suffered with affective disorders. Background vulnerability, characterized by certain personality traits, is converted into a physical object that is essentially the creative product. Social reality with well-defined rules that constitute standards of behaviour for the rest of the world become insignificant for the creative artist who lives in a world without preconception, devoid of the ordinary and common. The outside world is structured by "inner turmoil," leading to hypersensitivity to external stimuli, thus intensifying the living experience. Nothing is more suggestive of this than the life and works of Beethoven, which reflect passionate to paroxystic feelings, tense relationships, as well as different landmarks of conduct and social conveniences. When reality becomes blurred and has no sound, Beethoven transforms total and vulnerable inner peace into harmonic sounds that delight both the soul and the human mind. Robert Schumann's existential destiny takes him through the ups and downs of the affective pathology. Schumann composed most of his works on the sad and dark path of depression; the question arises as to how Schumann would have been able to create with the same force, without knowing the depths of depression.

The famous painting *The Mask* by Josef Maria de Sucre is an expression of a hardened conviction to sadness and death that reflects a troubled inner universe, sometimes in a paradoxical dichotomous relationship with the outside world, oscillating between sociability and seclusion. De Sucre lives the burden of depression in solitude, without hope, but with the creative vulnerable fire still unquenchable. Miró's life, intersecting with psychopathology, was much studied and commented on. Miró grew up and developed in isolation with few friends and with inconsistent social support, with a high background vulnerability, agglutinating steadily towards the affective pathology. In such periods, paintings like *The Birth of the World*, *The Farm* and *The Carnival of Harlequin* are fashioned, being expressions of isolation, despair, loneliness and dissatisfaction in relation to the limitations of everyday reality (Schildkraut & Hirshfeld 1995).

Periods of resistance and interior pliability, but also periods of increased vulnerability may influence the act of creation. There is nothing more suggestive than the case of Vincent van Gogh, for whom a sunflower's light, heat and colour-life are a continuum from the artist's internal world to the outside. Nevertheless, there is also a "sunflower" in which the inner, disintegrating vulnerability is expressed coldly, bristly and morbidly. The relationship between vulnerability and creativity is, therefore, a complex puzzle, which is only partially known and can be a gift or a misfortune. When looking at each and every one of us, we must be aware that within each there is yet an unread, indecipherable path; however, in times of crisis (which do not bypass the majority of us) we have to find resources to allow new beneficial perspectives of life.

## References

Gottlieb, B. H. (1981). *Social Networks and Social Support*. Beverly Hills, CA: Sage Publications.

Klusmann, D. (1989). *Social Network: A Fruitful Concept in Psychiatry?* Hamburg: Unveroffentliches Manuskript.

Kraus, A. (1999). "Phenomenological-Anthropological Psychiatry." In H. Helmchen, F. Henn, H. Lauter & N. Sartorius (Eds.), *Psychiatrie der Gegenwart 1: Grundlagen der Psychiatrie*, 578–603. Berlin–Heidelberg: Springer Verlag.

Kretschmer, E. (1930). *Physique and Character*. Paris: Payot.

Lăzărescu, M. (2010). *Bazele psihopatologiei clinice* [The Foundations of Clinical Psychopathology]. Bucureşti: Editura Academiei.

Ludwig, A. M. (1992). "Creative Achievement and Psychopathology: Comparison among Professions." *American Journal of Psychotherapy* 46 (3): 330–356.

Mahler, Margaret S., Pine, F. & Bergman, Anni. (1973). *The Psychological Birth of the Human Infant Symbiosis and Individuation*. New York, NY: Basic Books.

Petrilowitsch, N. (1960). Abnormal personalities. *Bibliotheca Psychiatrica et Neurologica* 111: 1–178.

Rutter, M. (1985). "Resilience in the Face of Adversity. Protective Factors and Resistance to Psychiatric Disorders." *British Journal of Psychiatry* 147: 598–611.

Schildkraut, J. J. & Hirshfeld, A. J. (1995). "Mind and Mood in Modern Art I: Miró and 'Melancholie'." *Creativity Research Journal* 8 (2): 139–156.

Schildkraut, J. J., Hirshfeld, A. J. & Murphy, J. (1994). "Mind and Mood in Modern Art II. Depressive Disorders, Spirituality and Early Deaths in the Abstract Expressionist Artists of the New York School." *American Journal of Psychiatry* 151 (4): 482–488.

Schneider, K. (1950). "Psychopathic Personalities." *International Journal of Psycho-Analysis* 40: 360.

Spitz, R. A. (1964). "The Derailment of Dialogue: Stimulus Overload, Action Cycles, and the Completion Gradient." *Journal of the American Psychoanalytic Association* 12: 752–774.

Tellenbach, H. (1981). "Tasting and Smelling, Taste and Atmosphere, Atmosphere and Trust." *Journal of Phenomenological Psychology* 12 (2): 221–230.

Vaughn, C. E. & Leff, J. P. (1973). "The Influence of Family and Social Factors on the Course of Psychiatric Illness: A Comparison of Schizophrenic and Depressed Neurotic Outpatients." *British Journal of Psychiatry* 129: 125–137.

Veiel, H. O. F. (1985). "Dimension of Social Support: A Conceptual Framework for Research." *Social Psychiatry* 20: 156–162.

Wing, J. K. & Brown, G. W. (1970). *Institutionalism and Schizophrenia: A Comparative Study of Three Mental Hospitals 1960–1968*. Cambridge: Cambridge University Press.

Zubin, J. & Spring, G. B. (1977). "Vulnerability: A New View of Schizophrenia." *Journal of Abnormal Psychology* 86 (2): 103–126.

# EXAMINING EMOTIONAL INTELLIGENCE AND NONVERBAL SENSITIVITY USING MSCEIT AND PONS

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## Introduction

The ability to recognize and interpret emotions and emotional situations in social psychology in studies have been extensively researched and possible predictors, correlates and consequences have been assessed. Thus, emotion recognition is either conceptualized as social competence (Bandura 1997) or emotional competence (Saarni 1999), or as a component of the broader concept of emotional intelligence (Mayer & Salovey 1997; Mayer, Salovey & Caruso 2002).

Emotional intelligence has been defined mainly as "an accurate appraisal and expression of emotion in oneself and others and the regulation of emotion in a way that enhances living" (Mayer, DiPaolo & Salovey 1990, 772), and includes perception, understanding, use, and control of the emotions. There are several competing emotional intelligence models, and all include accuracy at decoding emotions as one component (Bar-On 1997; Goleman 1995; Petrides, Pita & Kokkinaki 2007). Among them, the Mayer-Salovey-Caruso model (1997) clearly specifies that emotional intelligence is an ability and not a personality trait, examining "how well people perform tasks and solve emotional problems" (Mayer, Salovey & Caruso 2002, 1). According to the Mayer-Salovey-Caruso model, emotional intelligence encompasses four subsequent competencies: (1) perception of emotions (PE), the ability to perceive your own emotions and others' emotions generated stimuli; (2) facilitating emotional thinking (FA), using emotions in cognitive processes and to communicate emotions; (3) understanding emotions (UE), understanding

how emotions are changing and decode the emotional significance of different social interactions; (4) managing emotions (MA), adapting emotions to your own person and to others and, generally speaking, flexibility in emotional exchanges. The first two components are experiential, emotional intelligence, and the last two are strategic emotional intelligence.

Emotional intelligence, when conceptualized as ability, is associated with personal and professional success. People with high Emotional Intelligence Quotient (EIQ) scores prove to be better adjusted to others they interact with in their professional and personal relations (Ashkanasy & Daus 2002; Schutte et al. 2007).

Psychological and psychophysiological studies treat emotional recognition in particular without integrating it to broader concepts. Those studies (Ambady, Bernieri & Richerson 2000; Hall & Bernieri 2001; Hess, Blairy & Kleck 1997; Nowicki 2004; Nowicki & Mitchell 1998; Rosenthal et al. 1979) enhanced the decoder's perspective and stressed the accuracy and rapidity in detecting, decoding and comprehending emotions or emotional situations. Thus, we can talk about interpersonal sensitivity (Hall & Bernieri 2001) and nonverbal sensitivity (Ivan 2009; Rosenthal et al. 1979) when we strictly refer to the way we evaluate others based on emotional stimuli, or to the decoding accuracy of emotional situations. Particularly, nonverbal sensitivity conceptualizes the perception and comprehension of emotional situations based on limited exposure (usually a few seconds) and unknown stimuli persons when the evaluator has access to all channels of communication or restricted access to some channels, e.g. face-only or body-only (Rosenthal et al. 1979; Ambady, Krabbenfoft & Hogan 2006).

A wide range of research has demonstrated the relation between nonverbal sensitivity and social and personal adjustment **(**Hall, Roter, Blanch & Frankel 2009**).** In addition, other studies (Byron, Terranova & Nowicki 2007; Elfenbein et al. 2007; Hall, Andrzejewski & Yopchick 2009) have demonstrated that highly nonverbal sensitive individuals are more empathic, often involved in prosocial or helping behaviours, better adjusted to groups and more successful in jobs that require selection, evaluation or negotiation.

Although emotional intelligence and nonverbal sensitivity relate to similar correlates, the studies that directly address the relation between the two concepts are scarce. We believe that this is the case for at least two reasons: (1) the large diversity of measures used to assess people's nonverbal sensitivity, particularly their emotional recognition ability, and;

(2) the belief that emotional intelligence and nonverbal sensitivity strongly overlap.

## Research Questions

Three research questions emerge from this theoretical background**:**

- RQ1: Is there any relation between PONS and MSCEIT?
- RQ2: What are the relations between the two PONS components (face and body) and the four MSCEIT components?
- RQ3. Do the two tests partially overlap?

## Methodology

### Participants

Two hundred and forty-one undergraduate students from one Romanian university participated in the current study; 31 students were men and 211 were women, aged nineteen to thirty-nine ($M$=21.65, $SD$=2.17). The students attended Psychology and Nonverbal Communication courses.

### Instruments

In order to assess nonverbal sensitivity, we applied a face and body form of the Profile of Nonverbal Sensitivity-PONS (Rosenthal et al. 1979) consisting of two second slides (dynamic) of twenty silent face-only and twenty silent body-only items. The face and body PONS measures nonverbal sensitivity on the visual channel only, having a .63 overall validity. The visual channel scores significantly correlate ($r$=.50, $p$<.001) with the full PONS scores (Rosenthal et al. 1979). We gave a binary-choice scoring form to the participants, asking them to choose the description they consider proper for each encoded situation.

The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) consists of 141 items and takes 30 to 45 minutes to complete. They designed MSCEIT measures EI as an ability starting from the emotional intelligence model of the Mayer & Salovey MSCEIT to provide a total EI score, two area scores (experiential and strategic), and four branch scores (perceiving emotions, facilitating thought, understanding emotions and managing emotions). First, we applied MSCEIT in order to assess emotional intelligence, and then the participants completed PONS in order to measure nonverbal sensitivity.

## Results

We computed means and standard deviations first using SPSS version 16.0. We can notice that there are no significant differences between the ability to decode body-items measured by PONS-body when comparing the descriptive indicators (see Table 3-2 below) (*M*=14.65, *S.D*=1.67) and the ability to decode face items, contained by PONS-face (*M*=14.38, *S.D*=1.73). For the current sample, the abilities to perceive (*M*=54.07, *S.D*=7.77) and understand emotions (*M*=54.34, *S.D*=7.19) are better developed than the abilities to use emotions in the facilitation of though (*M*=48.15, *S.D*=9.36) and to manage emotions (*M*=49.98, *S.D*=8.20).

**Table 3-2. Descriptive Statistics for PONS and MSCEIT**

| | Mean | Standard deviation | N |
|---|---|---|---|
| PONS face | 14.3859 | 1.73098 | 241 |
| PONS body | 14.6556 | 1.67881 | 241 |
| PONS total | 29.0415 | 2.64700 | 241 |
| EIQ | 52.1278 | 7.79081 | 241 |
| EEIQ | 51.1816 | 8.46960 | 241 |
| SEIQ | 52.5378 | 7.03295 | 241 |
| PEIQ | 54.0729 | 7.77084 | 241 |
| FEIQ | 48.1516 | 9.36024 | 241 |
| UEIQ | 54.3457 | 7.19197 | 241 |
| MEIQ | 49.9837 | 8.20711 | 241 |

In view of examining the association between emotional intelligence and nonverbal sensitivity, we calculated Pearson linear correlation coefficients: Emotional intelligence (EIQ), Experiential emotional intelligence (EEIQ), Strategic emotional intelligence (SEIQ), Perception of emotions (PEIQ), Facilitating thought (FEIQ), Understanding emotions (UEIQ), Managing emotions (MEIQ) (see Table 3-3 below). We identified significant positive correlations between emotional intelligence and nonverbal sensitivity ($r$=.292, $p$<.01), and between the two main areas of EI, the experiential ($r$=.223, $p$<.01) and the strategic areas ($r$=.286, $p$<.01). We also identified positive significant correlations between the four scales of MSCEIT and nonverbal sensitivity: perception of emotions ($r$=.214, $p$<.01), facilitating thought ($r$=.168, $p$<.01), understanding emotions ($r$=.257, $p$<.01) and managing emotions ($r$=.202, $p$<.01). We also identified significant correlations between EI and the ability to decode nonverbal items related

to the body ($r$=.265, p<.01) and the ability to decode nonverbal elements related with the face ($r$=.189, $p$<.01).

**Table 3-3. Correlation matrix between PONS and MSCEIT scores**

| | | EIQ | EEIQ | SEIQ | PEIQ | FEIQ | UEIQ | MEIQ |
|---|---|---|---|---|---|---|---|---|
| PONS face | Pearson Correlation | .189** | .142* | .188** | .155* | .093 | .191** | .113 |
| | Sig. (2-tailed) | .003 | .027 | .003 | .016 | .149 | .003 | .080 |
| | N | 241 | 241 | 241 | 241 | 241 | 241 | 241 |
| PONS body | Pearson Correlation | .265** | .204** | .257** | .177** | .169** | .209** | .202** |
| | Sig. (2-tailed) | .000 | .001 | .000 | .006 | .008 | .001 | .002 |
| | N | 241 | 241 | 241 | 241 | 241 | 241 | 241 |
| PONS total | Pearson Correlation | .292** | .223** | .286** | .214** | .168** | .257** | .202** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .001 | .009 | .000 | .002 |
| | N | 241 | 241 | 241 | 241 | 241 | 241 | 241 |

We identified significant correlations between the ability to decode nonverbal elements related to the body and EEIQ ($r$=.204, $p$<.01) and SEIQ ($r$=.257, $p$<.01), and between the ability to decode items related to the face and EEIQ ($r$=.142, $p$<.05) and SEIQ ($r$=.188, $p$<.01). The ability to decode nonverbal elements related to the body correlates positively with PEIQ ($r$=.177, $p$<.01), FEIQ ($r$=.169, $p$<.01), UEIQ ($r$=.209, $p$<.01) and MEIQ ($r$=.202, $p$<.01). The ability to decode nonverbal elements associated with the face is also, but more weakly, associated with PEIQ ($r$=.155, $p$<.05) and UEIQ ($r$=.191, $p$<.01). Simple linear regression revealed a positive, but weak, relationship between emotional intelligence and nonverbal sensitivity ($\beta$=.292, $t$ (239)=4.717, $p$<.001). Students with higher emotional intelligence had higher nonverbal sensitivity, the accuracy of predicting scores for the dependent variable nonverbal sensitivity improving by 8.5% if the prediction relies on scores for the independent variable emotional intelligence ($r^2$=0.085).

## Conclusions and Recommendations

From the results we can observe that the two tests (PONS and MSCEIT) do not overlap to such a considerable extent. PONS can be used especially for examining the perception of emotional intelligence (PEIQ) and understanding emotional intelligence (UEIQ) components of emotional intelligence. In addition, body-items from PONS are more strongly associated with emotional intelligence, conceived as an ability.

In the current study, we examined the relationship between emotional intelligence and nonverbal sensitivity measured with MSCEIT and PONS. We did not investigate the moderating influence of gender when investigating the association between the two constructs, taking into account the fact that females usually have a higher degree of emotional intelligence and have better accuracy in detecting nonverbal cues. In addition, in view of comparing results, the relation between EI, conceived as a trait, and nonverbal sensitivity can be examined using EQ-i and PONS. The role of other individual variables can be taken into account, especially when measuring the relationship between personality traits, emotional intelligence and nonverbal sensitivity.

## References

Ambady, N., Bernieri, F. J. & Richerson, J. A. (2000). "Towards a Histology of Social Behavior: Judgmental Accuracy from the Thin Slices of the Behavioral Stream." *Advances in Experimental Social Psychology* 32: 201–271.

Ambady, N., Krabbenfoft, M. A. & Hogan, D. (2006). "The 30 Sec Scale: Using Thin Slices Judgments to Evaluate Sales Effectiveness." *Journal of Consumer Psychology* 16 (1): 4–13.

Ashkanasy, N. M. & Daus, C. S. (2005). "Rumors of the Death of Emotional Intelligence in Organizational Behavior Are Vastly Exaggerated." *Journal of Organizational Behavior* 26: 441–452

Bandura, A. (1997). "Cultivate Self-Efficacy for Personal and Organizational Effectiveness." In E. A. Locke (Ed.). *The Blackwell Handbook of Principles of Organization Behaviour*. London: Blackwell. 120–137.

Bar-On, R. (1997). *Emotional Quotient Inventory: Technical Manual*. Toronto: Multi-Health Systems.

Byron, K., Terranova, S. & Nowicki, S. Jr. (2007). "Nonverbal Emotion Recognition and Sales Persons: Liking Ability to Perceived and Actual Success." *Journal of Applied and Social Psychology* 37: 2600–2619.

Elfenbein, H., Foo, M. D., White, J. T., Hwee, H. & Aik, C. (2007). "Reading your Counterpart: The Benefit of Emotion Recognition Accuracy For Effectiveness In Negotiation." *Journal of Nonverbal Behavior* 31: 205–223.

Hall, J. A. & Bernieri, F. J. (2001). *Interpersonal Sensitivity. Theory and Measurement*. Mahwah, NJ: Lawrence Erbaum.

Hall, J., Andrzejewski, A. S. & Yopchick, E. J. (2009). "Psychosocial Corelates of Interpersonal Sensitivity: A Meta-Analysis." *Journal of Nonverbal Behavior* 33 (3): 149–180.

Hall, J. A., Roter, D. L., Blanch, D. C. & Frankel, R. (2009). "Nonverbal Sensitivity in Medical Students: Implications for Clinical Interactions." *Journal of General Internal Medicine* 24 (11): 1217–1222.

Hess, U., Blairy, S. & Kleck, R. E. (1997). "The Intensity of Emotional Facial Expressions and Decoding Accuracy." *Journal of Nonverbal Behavior* 21: 241–257.

Ivan, L. (2009). *Cele mai importante 20 de secunde. Competenţa în comunicarea nonverbală* [The Most Important 20 Seconds: Nonverbal Commmmunication Competency]. Bucharest: Tritonic.

Goleman, D. (1995). *Emotional Intelligence.* New York, NY: Bantam

Mayer, J. D., Salovey, P. & Caruso, D. (2002). *Mayer-Salovey-Caruso Emotional Intelligence Test User's Manual*. Toronto: Multi-Health Systems.

Mayer, J. & Salovey, P. (1997). "What is Emotional Intelligence?" In P. Salovey & D. Sluyter (Eds.), *Emotional Development and Emotional Intelligence: Educational Implications*. New York, NY: Basic Books.

Mayer, J. D., DiPaolo, M. & Salovey, P. (1990). "Perceiving Affective Content in Ambiguous Visual Stimuli: A Component of Emotional Intelligence." *Journal of Personality Assessment* 54: 772–781.

Nowicki, S. Jr. (2004). *The Diagnostic Analysis of Nonverbal Accuracy-2*. Atlanta, GA: Emory University.

Nowicki, S. Jr. & Mitchell, J. (1998). "Accuracy in Identifying Affect in Child and Adult Faces and Voices and Social Competence in Preschool Children." G*enetic, Social, and General Psychological Monograph* 124: 39–61.

Petrides, K. V., Pita, R. & Kokkinaki, F. (2007). "The Location of Trait Emotional Intelligence in Personality Factor Space." *British Journal of Psychology* 98: 273–289.

Saarni, C. (1999). *The Development of Emotional Competence*. New York, NY: Guilford.

Schutte N. S., Malouff, J. M., Thorsteinsson, E. B., Bhullar, N. & Rooke, S. E. (2007). "A Meta-Analytic Investigation of the Relationship

between Emotional Intelligence and Health." *Personality and Individual Differences* 42: 921–933.

Rosenthal, R., Hall, J. A., DiMateo, M. R., Rogers, L. P. & Archer, D. (1979). *Sensitivity to Nonverbal Communication. The PONS Test*. Baltimore Maryland: John Hopkins University Press.

# THE PERSISTENCE OF DISCRIMINATION AMONG ADULTS LIVING WITH HIV

IOSIF MARINCU

## Introduction

Stigma and discrimination continue to be present in the lives of many living with HIV, especially those already marginalised by gender, race, and socio-economic status. Stigma and the associated shame appear to amplify the complexities of living with HIV. As the number of people living with HIV increases, policy makers and health care professionals need to develop tailored programs of support and care to meet their complex needs and requirements (Kippax et al. 2007).

According to the statistics of the Romanian HIV Monitoring and Assessment Compartment (December 31, 2011), in Romania there were 10,903 HIV patients, of which 4,517 aged 14+ (Professor Matei Balş Institute of Infectious Diseases 2011).

Besides the problems caused by this severe disease, HIV patients have to face the intolerance and lack of information and education of their peers on a daily basis, which results in sometimes primitive manifestations of discrimination.

Discrimination and stigma have become, for most HIV patients, more difficult to bear than the disease itself. Discrimination among patients with HIV concerns both adults living with HIV and doctors, psychologists, sociologists, psychiatrists, social workers etc.

The main objective of this study is to look at the persistence of discrimination among adults living with HIV, establishing the circumstances in which this attitude materialises, and develop some recommendations concerning the control of this social issue.

## Methods

Sixty-two patients living with HIV participated in the study, monitored in the Infectious Disease Clinic in Timişoara. All these patients responded to the questionnaire concerning discrimination among patients living with HIV. We need to mention that we did not use data concerning the patients' identity or their addresses, observing their right to privacy.

The questionnaire contained ten questions, most of which of the "multiple-choice type" (more than three variants of answers), but also open questions meant to allow a deeper analysis of the results. The questionnaire thus included three questions concerning the rights and ways of controlling discrimination, three concerning the perception of discrimination of one's own person or among colleagues and the disrespect of private life, two including discrimination situations, and two aiming at finding out the opinions on measures to control discrimination.

We obtained statistical results with the Epi Info programme, and made graphical representations in Word.

## Results

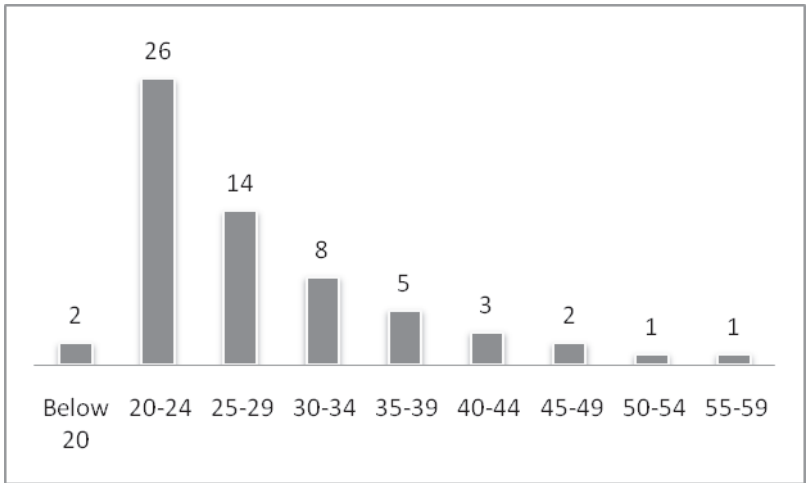
Of the total respondents, 35 were male and 27 female, with an average age of 26.12, ranging between 18 and 57.

The distribution of the subjects depending on their environment of origin shows that 22 came from rural areas and 40 from urban areas (see Figure 3-6 below).

The graph in Figure 3-6 shows that most subjects with HIV (26) belong to the age group twenty to twenty-four, followed by twenty-five to twenty-nine with 14 subjects. These two age groups make up a maximal share segment (40 subjects, or 65.5%) of the 62 subjects included in the study. This shows that we are dealing with a group of young adults who, besides their disease, have other psychosocial or individual issues characteristic to this period of life.

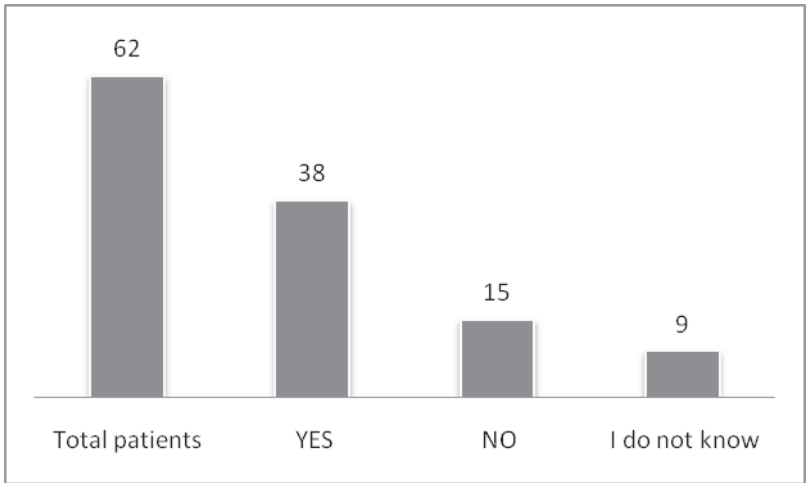
Discrimination prevents patients with HIV from living a normal life in society and the family, forcing them to deny their diagnosis, avoid communication with the family physician and medical staff, with family members, colleagues or friends, isolating themself from society and amplifying their suffering.

**Figure 3-6. Distribution of subjects per age groups**




In the group investigated, 38 subjects consider themselves discriminated against, 15 subjects do not consider themselves discriminated against while 9 say they do not know whether they are discriminated against or not, which suggests they are not confident of having experienced such situations (see Figure 3-7 below).

**Figure 3-7. Discrimination among subjects**

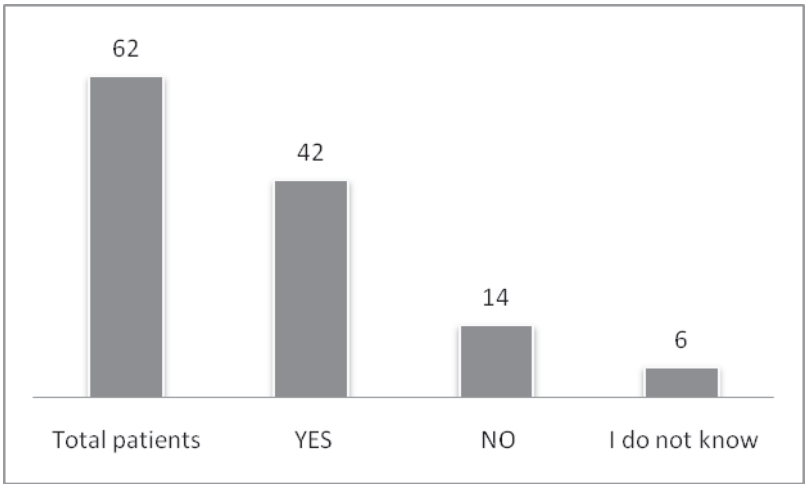


Note that 40 subjects (64.5%) also know other subjects living with HIV and who are discriminated against. This confirms the persistence of discrimination among adults living with HIV in different social sectors.

They consider that breaking a confidentiality agreement concerning the diagnosis of HIV infection can result in discrimination.

As far as the group of HIV subjects is concerned, 42 admitted their confidentiality agreement was broken, 14 claim their right to confidentiality was respected while 6 answered "I do not know," leaving room for interpretation and uncertainty (see Figure 3-8 below).

**Figure 3-8. Confidentiality among the studied group**




In Romania, an equal commitment to combatting the pervasive stigma and discrimination against people living with HIV has been lacking, frequently impeding their access to education, medical care, government services, and employment (Human Rights Watch Universal Periodic Review 2008).

When they had to identify the people that had broken their confidentiality agreement, the subjects answered "medical staff" (34 subjects), "teachers" (24 subjects), followed by other categories (i.e. neighbours, employers, relatives, friends) (see Table 3-4 below). The experience of stigmatization may depend on the realities of the communities in which stigmatized people live (Miller et al. 2011).

As for the social circumstances in which the subjects were discriminated, most subjects living with HIV claim to have experienced discrimination during hospitalisation (32 subjects), in the community in

which they live (30), by their relatives and friends (26), by their employers (18), by school masters (12), by their families (6), and in other situations (22).

**Table 3-4. Social categories having broken confidentiality agreements**

| Social categories | Number of subjects | Percentage |
|---|---|---|
| Medical staff | 34 | 54.83% |
| Teaching staff | 24 | 38.70% |
| Friends | 18 | 29.03% |
| Neighbours | 32 | 51.61% |
| Relatives | 20 | 32.25% |
| Employers | 26 | 41.93% |
| Other social categories | 28 | 45.16% |

The Human Rights Watch—Life does not Wait: Romania's Failure to Protect and Support Children and Youth Living with HIV report (2006) illustrates that stigma and discrimination among adults living with HIV still exist in Romania.

Thus, among the locations in which adults living with HIV felt they were discriminated, dental offices ranks first (38 subjects), followed by hospitals (32 subjects), dwellings (30 subjects), work places (24 subjects), schools (22 subjects), the family physician's offices (16 subjects), and other locations (25 subjects).

Fewer than 60% of Romanian children living with HIV attend any form of schooling, despite legislation providing free and compulsory education through tenth grade or until the age of eighteen (Human Rights Watch Universal Periodic Review 2008).

Most adults living with HIV are members of associations or organisations at the urban level, established with the aim of helping and facilitating their social or family reinsertion by getting aware of their rights. Thus, 32 subjects considered they know their rights concerning equal access to services and private life, 18 subjects do not know them, and other 12 subjects said "I do not know," maybe because they know only part of these rights.

Moreover, 13 subjects claimed they know where they can go to complain in case of discrimination, but only 4 subjects (6.45%) have ever complained having been discriminated against.

Opinions about fighting discrimination were diverse, with 35 subjects claiming that the public need to be properly informed and educated about HIV infection, 12 subjects wishing for harsher punishments for

discrimination against adults living with HIV or broken confidentiality agreements, and 28 subjects suggesting more promotion of faith and religion. At the same time, 12 subjects are willing to be involved in different activities meant to control discrimination among adults living with HIV. Results confirm that 61.29% of the respondents living with HIV claimed that they have been discriminated against.

Note the relevant share of adults living with HIV who consider they were discriminated against (61.29%), and the high share of subjects whose confidentiality agreements have been broken (67.74%). These results confirm that breaking confidentiality agreements is closely related to discrimination.

Moreover, the persistence of discrimination among adults living with HIV can generate risk attitudes and behaviour changes. Thus, results of the VESPA Study are in line with previous research that suggested various pathways through which stigma can contribute to the spread of HIV (Peretti-Watel et al. 2007).

Importantly, the gaps in research on structural aspects referring to political, economic and social aspects that produce stigma and discrimination have significant impacts on the design of responses to stigma and discrimination, associated not only with the HIV/AIDS epidemic, but also with other health problems (Monteiro, Vieira Villela & Knauth 2012).

Service providers are part of society, and their prejudicial attitudes are part of the social construct of HIV stigma in society. Their perception of social norms relies on their interpretation of their observations in their personal and professional communities, and the similarity to their personal attitudes may result from a blend of social reality and personal interpretation. Current findings imply that, for a stigma reduction intervention to be effective, it needs to address both personal stigmatizing attitudes and perceptions of societal prejudice and stereotypes (Li et al. 2009).

The stigmatization and discrimination of adults living with HIV can lead to more difficulties of communication and cooperation with the family physician or to little adherence to long-term antiviral therapy.

Critical analyses of the power relations involved in the epidemic (including stigmatization and discrimination) and the production of vulnerabilities, tend to become less valued; meanwhile, studies on risk perceptions and behaviours in specific groups, and particularly on treatment adherence, are welcomed (Monteiro, Vieira Villela & Knauth 2012).

While analysing data, we noted that, in some cases, answering "I do not know" points to probable discrimination in certain social circumstances. It often occurs that a low level of knowledge concerning legal rights makes adults living with HIV consider some discriminatory behavioural attitudes they face in different social circumstances as natural. When protective legislation on HIV/AIDS discrimination is in place, support for enforcement and targeted information campaigns for stakeholders about rights afforded by such legislation should be provided (Mahajan et al. 2008). Proper knowledge concerning control of discrimination, together with the rights of adults living with HIV determines both prevention of discrimination situations and their sanctioning when they persist. The number of people claiming they know their rights (32) is significantly higher than that of the subjects who do not in cases of discrimination (13). There is a significant difference between the number of subjects considering they have been discriminated against (38) and the number of subjects complaining when discriminated against (4).

The global summary of the HIV epidemic as presented in the UNAIDS report (2004) shows that, in countries that have developed and continued HIV mass media campaigns, there was an evident increase in HIV counselling and testing, and in promoting HIV awareness and healthy behaviour (Greeff et al. 2010).

## Conclusion

The high percentage (61.29%) of adults living with HIV that are discriminated against, together with multiple situations and locations in which they face discrimination confirms the persistence of discrimination among this segment of the population. Since discrimination among adults living with HIV persists in both their relation with institutions and professionals in social and medical fields, and their relation with other members of the community, we need to promote and observe legislation and implement discrimination information and control campaigns. Since a significant number of subjects claim to be discriminated against without doing anything to change it, we think we need to inform adults living with HIV about human rights and the legal procedures of enforcing their rights.

## References

Greeff, M., Uys, L. R., Wantland, D., Makoae, L., Chirwa, M., Dlamini, P., Kohi, T. W., Mullan, J., Naidoo, J. R., Cuca, Y. & Holzemer, W. L. (2010). "Perceived HIV Stigma and Life Satisfaction among Persons

Living with HIV Infection in Five African Countries: A Longitudinal Study." *International Journal of Nursing Studies* 47 (4): 475–486.

Human Rights Watch. (2006). *Life Doesn't Wait: Romania's Failure to Protect and Support Children and Youth Living with HIV:* 15.

Human Rights Watch. (2008). *Universal Periodic Review Submission Romania January 2008:*1–2.

Kippax, S. C., Aggleton, P., Moatti, J. P. & Delfraissy, J. F. (2007). "Living with HIV: Recent Research from France and the French Caribbean (VESPA Study), Australia, Canada and the United Kingdom." *AIDS* 21 (1): S1–S3.

Li, L., Liang, L. J., Lin, C., Wu, Z. & Wen, Y. (2009). "Individual Attitudes and Perceived Social Norms: Reports on HIV/AIDS-related Stigma among Service Providers in China." *International Journal of Psychology* 44 (6): 443–450.

Mahajan, A. P., Sayles, J. N., Patel, V. A., Remien, R. H., Sawires, S. R., Ortiz, D. J., Szekeres, G. & Coates, T. J. (2008). "Stigma in the HIV/AIDS Epidemic: A Review of the Literature and Recommendations for the Way Forward." *AIDS 22* (2): S67–S79.

Miller, Carol T., Grover, Kristin W., Bunn, Janice Yanuska & Solomon, Sondra E. (2011). "Community Norms about Suppression of AIDS-Related Prejudice and Perceptions of Stigma by People with HIV or AIDS." *Psychological Science* 22 (5): 579–583.

Monteiro, Simone, Vieira Villela, Wilza & Knauth, Daniela. (2012). "Discrimination, Stigma, and AIDS: A Review of Academic Literature Produced in Brazil (2005–2010)." *Cadernos de Saúde Pública* 28 (1): 170–176.

Peretti-Watel, P., Spire, B., Obadia, Yolande & Moatti, J.-P. (2007). "Discrimination against HIV-Infected People and the Spread of HIV: Some Evidence from France." *PLoS ONE* 2 (5): e411.

*Romania at 31 December 2011*. http://www.cnlas.ro/images/doc/romania31dec2011_eng.pdf.

# Risk Factors in Oropharyngeal Candidiasis in Institutionalised Elderly Patients

Iosif Marincu, Ioana Todor, Olimpia Iacob and Mihai Mareş

## Introduction

In the last two decades, Candida has emerged as a serious opportunistic pathogen. Patients admitted to intensive care units (ICU) are particularly susceptible to this infection because of the severity of their underlying illness and the excessive use of medical and surgical interventions. The frequent use of antibiotics, central venous catheters and other intravascular devices, as well as poor gut motility or abdominal surgery place these patients at a high risk of infection, which contributes to the morbidity and mortality of the already critically ill patient (Schelenz 2008).

Oropharyngeal candidiasis is a common opportunistic infection of the oral cavity caused by an overgrowth of Candida species, the commonest being *Candida albicans*. The prevalence in the hospital or institution varies from 13% to 47% of elderly persons (Laurent et al. 2011).

The authors have investigated risk factors in oropharyngeal candidiasis in a group of elderly patients institutionalized in Timiş County, Romania, aiming at improving the management of this infection affecting more and more elderly people.

## Methods

We have retroactively analysed the data of 46 elderly patients with different infections associated with oropharyngeal candidiasis, admitted and monitored clinically-therapeutically in the Infectious Disease Clinics of Timişoara. All patients came from elderly people homes in Timişoara, Buziaş, Peciu Nou, and Variaş, and from psychiatric hospitals in Gătaia and Jebel, all in Timiş County. We established positive diagnoses based on the objective examination (lingual whitish deposits frequently accompanied

by dysphagia, odynophagia, a bitter taste, local burning sensation, pain and/or smarting pain localised at mouth commissures, asthenia, lack of appetite, difficult feeding, loss of weight, etc.) and biological sample analysis (HSS, hemoleucogram, fibrinogen, glycaemia, Alanine aminotransferase, Aspartate aminotransferase, cholesterol, triglycerides, hemocultures, sputocultures, lingual exudates, pharyngeal exudates, Sabouraud medium culture, coproculture, direct microscopic examination, antifungigram, etc.). We obtained statistic data with the Epi Info Programme.

## Results

As for the sample, 28 (60.86%) patients were males and 18 (39.13%) female, 72.21 years old on average, ranging from sixty to eighty-eight.

In the geographical area of Timiş County, elderly patients have an associated pathology starting with cardiovascular diseases and continuing with digestive disorders, respiratory infections, hematologic disorders, renal failure, metabolic syndromes, neuropsychic disorders, oncological diseases, etc.

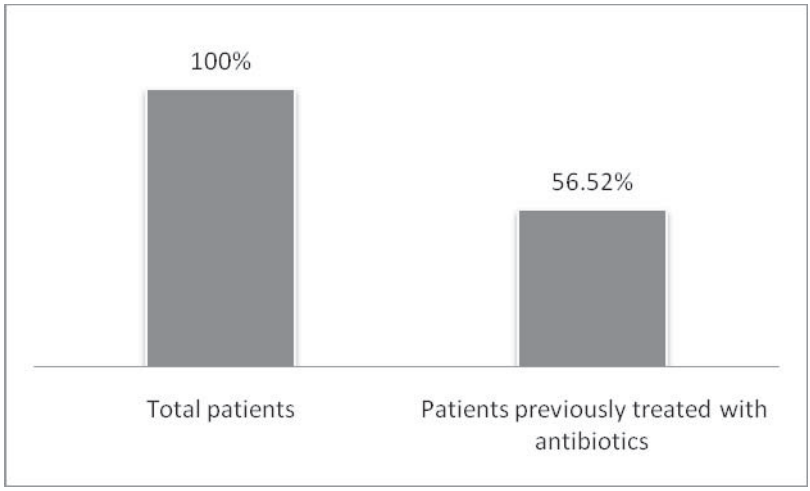
In the sample group, there were 35 patients with cardiac failure, 28 with chronic ischemic cardiopathy, 36 with arterial hypertension, 14 with chronic renal failure, 22 with chronic hepatitis, 18 with hepatic cirrhosis, 18 with gastroduodenal ulcer, 22 with acute pneumonia, 16 with bronchopneumonia, 25 with obstructive chronic bronchopneumonia, 26 with different forms of neoplasm, 20 with neurological conditions, 32 with different psychic illnesses, 12 with septicaemia, 24 with acute enterocolitis, 26 with different intestinal parasitosis, 20 with diabetes mellitus, and 22 with obesity.

All patients admitted to infectious disease clinics for various acute bacterial conditions took antibiotics during their stay, while 26 of them (56.52%) took antibiotics before admission (16 patients had a medical prescription from their family physician while 10 practiced self-administration) (see Figure 3-9 below).

While in hospital, 36 patients took very broad-spectrum antibiotics (third and fourth generation cephalosporins, carbapenems and fluoroquinolones). Moreover, 32 patients benefited from treatment associated with two or three antibiotics.

We registered 8 patients with diverse neoplasms treated with cytostatic drugs after the scheme established by the oncologist, while 12 patients had cytostatic drugs and radiotherapy.

**Figure 3-9. Patients previously treated with antibiotics**




Twelve patients had corticotherapy for different respiratory or systemic conditions.

Most patients with a loaded pathological history needed numerous invasive manoeuvres to establish diagnosis or proper treatment. Thus, 33 patients were under assisted ventilation, 22 needed a central venous catheter, 42 benefited from a peripheral venous catheter, all needed numerous endovenous perfusions, 28 underwent rachis punctures and 15 liver punctures for diagnosis accuracy, 42 needed bladder sounding, 35 benefited from repeated tracheobronchial aspiration, and 25 benefited from surgery because of different conditions (see Table 3-5 below).

Because of the slow evolution and associated pathology, 36 patients needed prolonged hospitalisation (over 15 days), 38 patients were assisted at the intensive care compartment level, and 28 were transferred from other clinics to the infectious diseases clinic.

Besides associated general pathology, 42 patients were also registered with deficit oral hygiene, in addition to numerous elements of oral pathology, 40 with periodontal disease, 8 with untreated cavity lesions, 28 with angular cheilitis, and 42 with deficit, improper dental prostheses.

**Table 3-5. Patients with invasive diagnosis manoeuvres**

| Invasive diagnosis manoeuvres | Number of patients | Percentage |
|---|---|---|
| Assisted ventilation | 33 | 71.73% |
| Central venous catheter | 22 | 47.82% |
| Peripheral venous catheter | 42 | 91.30% |
| Repeated perfusions | 46 | 100% |
| Repeated rachis puncture | 28 | 60.86% |
| Liver puncture | 15 | 32.60% |
| Bladder sounding | 35 | 76.08% |
| Tracheobronchial aspirations | 25 | 54.34% |

Smoking and drinking also contribute to complications of respiratory or digestive conditions. Thus, we identified 38 patients who smoke and 32 patients who were alcohol-addicted.

During hospitalisation, we isolated, in the patients, the following Candida species: 28 strains of *Candida albicans* and 18 strains of *Candida non albicans* (see Table 3-6 below).

**Table 3-6. Species of *Candida* isolated in the studied patients**

| Isolated *Candida* species | Number of species | Percentage |
|---|---|---|
| *Candida albicans* | 28 | 60.86% |
| *Candida glabrata* | 4 | 8.69% |
| *Candida kefir* | 4 | 8.69% |
| *Candida tropicalis* | 4 | 8.69% |
| *Candida guilliermondi* | 3 | 6.52% |
| *Candida parapsilosis* | 3 | 6.52% |

Haematological analyses in the laboratory showed that 22 patients were leukopenic, 34 were neutropenic, and 20 had thrombocytopenia, which confirms immunodepression in elderly patients.

## Discussion

The twenty-first century has brought vast innovations to the healthcare field. The availability and use of aggressive chemotherapeutic and immunosuppressive agents, as well as broad-spectrum antibacterial agents, has created a large population of patients who are at increased risk of acquiring infections with fungal organisms, especially Candida species (Chang, Neofytos & Horn 2008).

It is noteworthy for all physicians monitoring older patients to be aware of the risk factors, diagnosis and treatment of oral candidiasis (Akpan & Morgan 2002). Treatment with antibiotics, poor oral hygiene, wearing of dentures and vitamin C deficiency appeared as the most significant independent risk factors associated with oral candidiasis (Paillaud et al. 2004). In the group of patients, there was confirmation of broad-spectrum antibiotic use (78.26%) together with antibiotic associations (69.56%) that result in the unbalance of oral flora, favouring candidiasis. Oral or inhaled corticosteroids and other immunosuppressive medications, including chemotherapy in the setting of malignancy, impair the ability of the immune system to fight Candida antigens (Sharon & Fazel 2010). We used corticosteroids in 26.08% of the subjects and 17.39% needed cytostatic drugs to fight neoplasms.

Risk factors for active infection can be classified into endogenous and exogenous components. Endogenous factors include infancy and old age, pregnancy, immunocompromised states, diabetes mellitus, other endocrinopathies, vitamin deficiencies, and poor overall health (Sharon & Fazel 2010). Multiple associated conditions in the study group, incorporating all apparatus and systems, including diabetes mellitus (43.47%) are associated with the immune depressed background of the elderly and oral candidiasis. Exogenous risk factors encompass poor nutritional diet, the use of specified pharmacotherapeutics, cigarette smoking, ill-fitting oral prostheses, chronic local irritation or trauma, local radiation, and malignancy with chemotherapy treatment (Sharon & Fazel 2010). In the study group, there were 82.6% cigarette smokers and 69.56% alcohol addicts.

In general, *Candida albicans* is the predominantly isolated pathogen in North and Central Europe and the USA. On the other hand, non-albicans species predominate in Asia, South Europe and South America (Falagas, Roussos & Vardakas 2010). Results confirm the presence of isolates of *Candida albicans* (60.86%) compared to *Candida non-albicans* (39.13%) in the geographical area. There is a high rate of oral candidiasis and malnutrition, poor oral hygiene and wearing of dentures in institutionalised elderly patients (Paillaud et al. 2004). Most institutionalised elderly patients (91.30%) investigated had deficient oral hygiene associated with numerous oral conditions, including different candidiases. The prognosis of oral candidiasis in most patients is good. In immunosuppressed or debilitated populations, however, oropharyngeal candidiasis places the host at risk of developing an invasive disease. Therefore, it is necessary to identify and treat oral candidiasis (Sharon & Fazel 2010).

## Conclusion

Because of their loaded individual pathology associated with repeated admissions in intensive care units, multiple antibiotic treatments, repeated invasive investigations, and because of the immunosuppressive condition associated with other favouring factors, elderly people are a risk group for oral candidiases. The study of risk factors in elderly institutionalised patients allows prophylactic measures to control oral candidiasis and the inception of proper antifungal treatment. Results confirm the presence of endogenous and exogenous risk factors that contribute to the development of oral candidiasis in institutionalised elderly patients. We recommend strict observance of antibiotics prescription, proper oral hygiene, balanced nutrition, and periodic clinical control to diagnose oral candidiasis in due time and to treat it properly.

## References

Akpan, A. & Morgan, R. (2002). "Oral Candidiasis." *Postgraduate Medical Journal* 78 (922): 455–459.

Chang, A., Neofytos, D. & Horn, D. (2008). "Candidemia in the 21st Century." *Future Microbiology* 3 (4): 463–472.

Falagas, M. E., Roussos, N. & Vardakas, K. Z. (2010). "Relative Frequency of Albicans and the Various Non-Albicans *Candida* spp. among Candidemia Isolates from Inpatients in Various Parts of the World: A Systematic Review." *International Journal of Infectious Diseases* 14 (11): e954–e966.

Laurent, M., Gogly, B., Tahmasebi, F. & Paillaud, E. (2011). "Oropharyngeal Candidiasis in Elderly Patients." *Geriatrie et Psychologie Neuropsychiatrie du Vieillissement* 9 (1): 21–28.

Paillaud, Elena, Merlier, Isabelle, Dupeyron, Catherine, Scherman, Elisabeth, Poupo J. & Bories, P.-N. (2004). "Oral Candidiasis and Nutritional Deficiencies in Elderly Hospitalised Patients." *British Journal of Nutrition* 92 (5): 861–867.

Schelenz, S. (2008). "Management of Candidiasis in the Intensive Care Unit." *Journal of Antimicrobial Chemotherapy* 61 (1): i31-i34.

Sharon, V. & N. Fazel (2010). "Oral Candidiasis and Angular Cheilitis." *Dermatologic Therapy* 23 (3): 230–242.

# THE IMPACT OF THE 2007–2012 ECONOMIC CRISIS ON POPULATION HEALTH STATUS: A STATISTICAL STUDY OF BREAST CANCER

OCTAVIAN NEAGOE, IASMINA PETROVICI AND DAN ANCUȘA

## Introduction

The interdisciplinary approach in studying the impact of the economic crisis of 2007 to 2012 on the health status of the population allows for the utilization of elements from fields such as social medicine, sociology and health service management aiming to find the influencing factors of both short and long term results but also to quantify and appreciate their preponderance. The development of this analysis over a statistic study, applying quantitative and qualitative research methods, allows for the augmentation of the analytic credibility by pertaining to the "evidence based science" concept. According to the Lalonde model (Mincă & Marcu 2004), we conclude that there are several factors, which influence the population's health status: the biological, environmental (physical and chemical, social environment: economic, cultural, educational, professional elements), behavioural (life style) and other aspects relevant to health services. The first three have a global percentage of influence of about 80%, and those held responsible by the health services come to about 15% to 20%. The economic factor supervenes on a large scale in the structure of the rest excepting the biological elements. Recent sociological reports (Stuckler et al. 2011) show that the economic crisis considerably influences the population's health status in the affected countries and also influences the medical health services. In Romania, the effects of the economic crisis have been felt since 2007, the highest level being recorded in 2010 when, according to The Global Competitiveness Report 2010–2011, it finds itself 24th of all European Union countries regarding economic competence (Schwab 2010).

The effects of the economic crisis on the health status of the communities in the affected countries are: rising health costs, decreasing number of consultations in family medicine practices, rising number of admittances in hospitals, falling numbers in private hospitalization, rising suicide and depression symptoms numbers, worsening health status in vulnerable groups, rising number of individuals where health has been influenced by swerving acts and social delinquency. In trying to determine the inter-relation between the economic crisis and public health status, we have put together a practical study model of the population, which if applied to a target area should demonstrate the differences between the pre- and post-crisis period and also correlate the difference with the economic factor, be it directly or by another intermediary means. Using a fixed model focused on a particular pathology is the correct method to more accurately fulfil the need to eliminate vast variable elements. The introduction of malignant mammary neoplastic pathology in the study model is motivated by three primordial elements: it offers a significant number, in the first place concerning incidence and second regarding mortality by neoplasia in both sexes; the paucisymptomatic evolution excludes the medical emergency element which could interfere with voluntary addressability, and; the invariable biologic and physical environment factors which can influence this type of disease (Abeloff et al. 2008).

The evolution of breast cancer, where we can conclude the effects of the economic crisis, is mainly dependent on four factors: histopathology characteristics, the stage of the disease when the patient is diagnosed (very important in pre-therapeutic assessment of recurrence risk, and the later prognosis of the disease. As an example we mention the survival rate of five years at stage five being 98%, and stage four of 10%); the complex therapeutic approach, and; the follow-up of known cases. The main influence factors of the stage of the disease are: histological particularities, improving diagnosis methods, screening the population, and medical service addressability, which represents the main negative factor regarding the discovery of the disease in advanced stages as a consequence of personal negligence, facing a potentially severe pathology. The addressability towards medical services represents the linking chain between the socio-economic factors and the stage, respectively the evolution and prognosis of breast cancer. The main influencing factors in addressability towards health services are educational, behavioural, socio-cultural and economic (the national economic context influences the individual economic state, and this shifts the public attitude regarding addressability).

## Methods and Techniques

The clinical retrospective study relies on 2,202 female patients with breast cancer diagnosed in Timiș County and registered at the Regional Cancer Register of the Western Area over a period of ten years (2002 to 2011), with an average age of 50.5 and a range of variability between twenty-four and ninety-one. The statistical analysis of this segment, using the Fisher test, aims to demonstrate the significance of the high frequency of advance stage breast cancer cases after the onset of the economic crisis in 2007 in comparison with the previous period, a fact which should correlate its impact on the public addressability to medical assistance services with this disease. In the aim to determine the link between medical assistance addressability and the economic, behavioural and educational influence factors, the study model also includes a questionnaire which sustains, through its obtained data from female patients, the link between the socio-economic environment and public health status into a given pathology. The questionnaire contains five questions with standardized answers and has been applied over a period of eighteen months, July 2012 to December 2011, on one hundred female subjects representing patients diagnosed with advanced breast cancer and hospitalized in the Department of General Surgery II and Oncology, Municipal Clinical Hospital Timisoara.

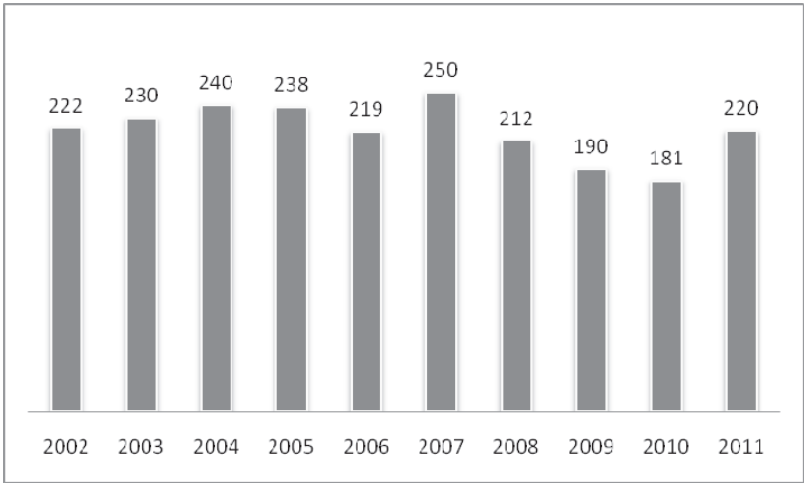
**QUESTIONNAIRE**

1. Why have you not sought medical assistance once you discovered the first signs of the disease?
   a. fear; b. you thought it would cure itself; c. financial reasons; d. other reasons.
2. You have not been to the doctor when you first discovered the mammary tumour because:
   a. you did not know what it was; b. you had no time; c. you did not have money; d. your family would not allow it.
3. How many times have you participated at screening campaigns for breast cancer?
   a. once; b. several times; c. never; d. I did not know they existed.
4. If you had been informed about the signs and severity of your disease, would you have seen a doctor when the first symptoms appeared?
   a. most probably; b. no; c. I don't know; d. possibly.
5. Which do you consider to be the most efficient factor in maintaining and protecting your health?
   a. more information; b. efficient distribution of financial resources in health services; c. lifestyle; d. mandatory periodic medical examinations.

## Results and Discussion

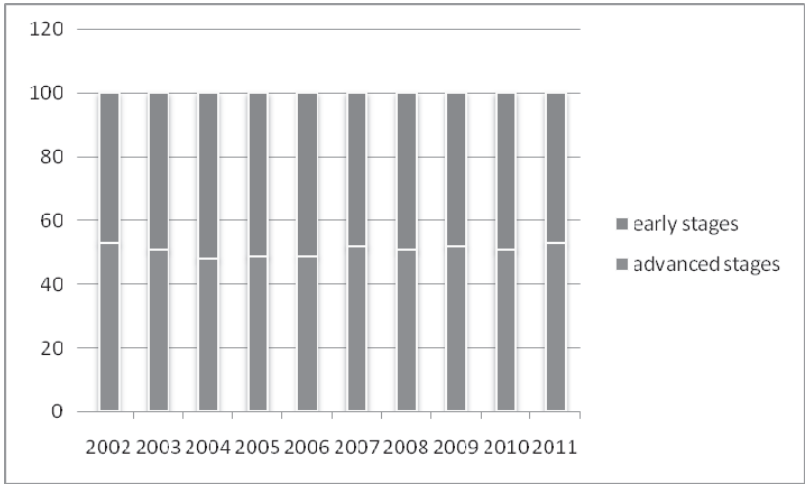
The division of this lot depending on the two analyzed periods (pre-crisis, the crisis period itself) brings forth a relatively homogenous distribution of this disease's incidence, even a decrease in the second part of the interval (2002–2006: 1,149 cases; 2007–2010: 1,053 cases). Using the early stages notion (st. 0, st. I, st. II), in which breast cancer is curable through complex therapeutic methods, and the advanced stages notion (st. III, st. IV), in which breast cancer benefits from mainly palliative treatments, prolonging the survival period, or the disease-free period, the distribution at the lot level shows a preponderant presence of the advanced cases (1,049 early cases; 1,153 advanced cases). The global incidence of breast cancer in Timiş County tracked in its annual dynamic grants a downwards tendency (see Figure 3-10 below), a tendency which is actually generated by the prevalent decrease of early cases to the detriment of the advanced ones, which despite small fluctuations maintain an absolute constant value (see Figure 3-11 below).

**Figure 3-10. Annual distribution of breast cancer incidence in Romania**



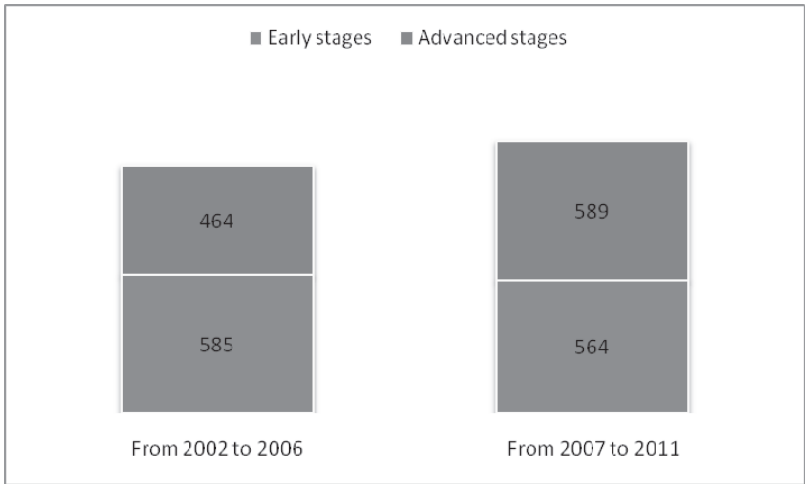

The analysis of the ratio distribution between early cases and the advanced ones over the two periods (2002–2006; 2007–2011) recalls an increase of 7% of diagnosed breast cancer cases in advanced stages following the onset of the economic crisis (49% of all cases in the first period versus 56% in the period of economic crisis).

**Figure 3-11. Distribution of stages of breast cancer in Romania**




This difference proved statistically significant (p:0.001361) due to the Fisher test (see Figure 3-12 below), demonstrating an increase in disease severity at the moment of diagnosis in comparison with the previous period, a fact which implies severe repercussions in further therapeutic costs, and the evolution and prognosis of these patients.

**Figure 3-12. Distribution of stages over the two periods**



The results from applying the questionnaire have enabled us to find the manner in which the influence of the economic crisis is present in the subject's status of health by establishing the degree of addressability to medical services but also possible factors, which could improve this parameter (see Table 3-7 below). By analyzing the answers of the questionnaire, we can observe that the largest determiner in presenting oneself to medical services is represented by the financial factor, a fact proven by the high percentage of *c* answers for the first question (58%), and confirmed by a similar percentage of *c* answers for question number two (61%). The usage of repetition in analyzing a single influence factor has a scope reinforcing the truth status of the given answers.

**Table 3-7. Questionnaire answers**

| Question | Answer | | | |
|---|---|---|---|---|
| | **a** | **b** | **c** | **d** |
| 1 | 11 | 19 | 58 | 12 |
| 2 | 2 | 11 | 61 | 4 |
| 3 | 3 | 16 | 5 | 26 |
| 4 | 4 | 63 | 12 | 21 |
| 5 | 28 | 3 | 22 | 47 |

In the intent to establish the role of the informative-educational factor in changing population attitude towards the need to address medical services, which can allow diagnosis at the early stage, curable on a larger scale, answers for the third question confirm the lack of popularization and media coverage of the severity of this disease, of the importance of early diagnosis regarding the degree of curability and subsequent implications of discovering it in its advanced stages. Thus, through the increased amount of *c* answers (53%) for the third question, the low impact of the educational factor on the population is confirmed. This is confirmed once again by the high frequency of *a* answers (63%) for the fourth question of the questionnaire. The fifth question distinguishes the role of the educational factor in addressing medical services, but not in the sense of applying informational methods which can be drawn by voluntary acts, but rather applying these methods with an imperative character, a fact demonstrated by applied studies in different countries (Oberlander et al. 2005), whereby for a person it becomes mandatory to visit a doctor, and if they do not then it is for economic reasons.

## Conclusions and Proposals

Considering that the natural history of the disease and its hereditary component have remained constant regarding breast cancer, the influence of the economic factor through the influence of the physical environment has not proven its real impact, and even if it has done it would have had an impact over the global incidence, not only over the increase of advance stage frequency. The impact of the economic factor on the diagnostic medical factors (screening programs, implementing new methods of diagnosis) does not play an important role in influencing the health status of the population, considering that over the period of the study these factors have registered an increasingly larger spread, with a more frequent discovery of early stage asymptomatic or paucisymptomatic female patients. Therapeutic medical factors, despite the onset of the crisis period, have registered a progressive development aligning itself to international protocols by implementing national oncological programs, allowing an optimal approach with increasingly better results in prognosis and the evolution of female patients diagnosed with breast cancer, with the possibility to correlate it with the influence of economic factors.

The economic factor, directly or indirectly, has proven its solid influence on the health status of the population through the addressability of the individual to medical services, a fact substantiated by the significant individual answers for the applied questionnaire which refer specifically to how much the financial element determines the visits and requests to medical services. The population's addressability to medical services has risen to be the main influence factor of the stage in which the breast cancer is diagnosed, because of the significantly larger number of advanced stage cases during the crisis period compared to the previous one, explaining the later evolution, morbidity and mortality caused by the disease during this period having repercussions on the (increasing) medical care costs and the number of involved individuals in the production process, closing a vicious cycle of the inter-relationship between the economic crisis and the health status of the population.

Knowing that there is such a ratio of reciprocity between the economic crisis and the health status of the population, we see how the crisis influences the population's health, and the health level of the population influences the distribution of financial, human and managerial resources in the health system. The proliferation of the economic crisis effects on the health status of the population could be improved by applying not only distribution policies of social-financial resources which improve life quality and distribution measures for health funds (Suciu et al. 2012), but

also as a primordial educational factor—the least expensive, but the most significant as long term results go (Vulcu 2005). Correlated with the motivational factor, this is capable of determining the population's orientation towards sustained adaptation to changes in the socio-economic environment, as much as towards maintaining and protecting health. The positive effect of improving the educational factor pertains to understanding the severity of the disease, its curability in the early stages, and the existence of population screening programs. The results of individual answers for the applied questionnaire specifically determine acknowledgment of the severity of the disease and the importance of understanding the collective efforts of discovering it, addressed to medical services. By doing so, it would be possible to create a balanced environment between health promotion and curative methods.

## References

Abeloff, M. D., Wolff, A. C., Weber, B. L., Zaks, T. Z., Secchini, V. & McCormick, B. (2008). Cancer of the Breast. In M. D. Abeloff, J. O. Armitage, J. E. Niederhuber, M. B. Kastan & W. G. McKenna (Eds.), *Clinical Oncology*, 1875–1943. Philadelphia, PA: Elsevier.

Mincă, D. & Marcu, M. (2004). *Sănătate publică şi management sanitar* [Public Health and Sanitary Management]. Bucureşti: Editura Universităţii Carol Davila.

Oberlander, J., Churchill, L. P., Estroff, S. E., Henderson, G. E., King, M. P. N. & Strauss, R. P. (2005). *The Social Medicine Reader 3: Health Policy, Markets, and Medicine.* Durham, NC: Duke University Press.

Schwab, K. (Ed.) (2010). *The Global Competitiveness Report 2010–2011*. Geneva, World Economic Forum.

Stuckler, D., Basu, S., Suhrcke, M., Coutts, A. & McKee, M. (2011). "Effects of the 2008 Recession on Health: A First Look at European Data." *The Lancet* 378 (9786): 124–125.

Suciu, M. C., Stan, C. A., Picioruș, L.& Imbrișcă, C. I. (2012). Sistemul de sănătate postcriză: efectele crizei economice în România [Post-crisis Health System: Economic Crisis Effects in Romania]. *Economie teoretică si aplicată 5 (570)*: 132–133.

Vulcu, L. (2005). *Sănătatea publică. Economia şi economia sănătăţii văzută de un om de sănătate publică* VI [Public health. Economy and Health Economy Seen by a Public Health Person VI]. Sibiu: Editura Universităţii Lucian Blaga.

# Assessment of Cortical Tiredness Level through Intermittent Luminous Stimulation

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and Gabriel Pițigoi

## Introduction

In a circumstantial way, fatigue may be considered as a reversible physiological state; it may be a syndrome associated to a multitude of affections caused by microbial aggressions, toxins or disorders and it may be regarded as the organism's defence and protection signal to excessive stress.

Semiotically, fatigue shows the incapacity of performing certain movements, of taking the right decisions and of setting in a proper reaction, at the same parametric level of previous performances (Gagea 2002). Concerning the relationship between cortical and physical fatigue, we consider that no review of either causal elements or issues of a processual nature (physiological, biochemical, biomechanical, etc.) regarding fatigue is required. All the more, the argumentation and, subsequently, the experimental determination of statistical correlations between the two ranks of the categories referring to cortex fatigue and physical fatigue are only a matter of praxiology, aiming to find a facile indicator for assessing acceptable levels of physical fatigue and steering sports training (Gagea & Păunescu 2012).

When a stationary source of light provides successive flickerings at one second intervals, the subject will perceive the flicker series for real while, at a gradual reduction of the period between two consecutive flickerings, the subject will no longer perceive the intervals and will indicate the presence of a continuous light. The length of the interval between consecutive flashes at which the subject reports the presence of a continuous light is called critical frequency of fusion. The critical

frequency of fusion with regard to intermittent photic stimulation (IPS) is considered a state indicator for the central part of the visual analyzer, related to the syndrome of cortex fatigue. In athletes, the fusion threshold at IPS may comprise a value interval of 20–30 Hz, according to the INMS experts; other specialists believe to have appraised it at the value of 25 Hz (Gagea 2010).

The dynamics of the critical frequency of fusion depends upon various factors, of which we list intensity and duration of flickerings, the age of the subjects, their general state of health (tired, sick, etc.), environment, biological rhythm, the excited retinal area and so on.

## Material and Methods

The device for intermittent photic stimulation, abbreviated as IPS, is made of an interface for pre-establishing the light energy, limits, modes and operating variation rates of the generating frequency and coefficients of impulse filling, and at the same time includes a device for displaying results, as well as an interface for acquisition, processing and storing results. The device is portable and USB connectable, having small dimensions and versatile software. At the same time it has the advantage of lacking the noise usually present at standard EEG models (with flash) and produced by ionic discharge, operating at an intensity of light pleasant to the eye, and allowing for the automatic storage of results. The fusion frequency and frequency for dissociation at IPS are significant indicators for cortex fatigue and effort, with a specific reference to the central part of the cortex analyzer.

The test characteristics consist of fixed range impulses at 1 ms with a filling factor of 50%, a minimum frequency at 10 Hz, a maximum fusion frequency of 50 Hz and a test period of 60 seconds.

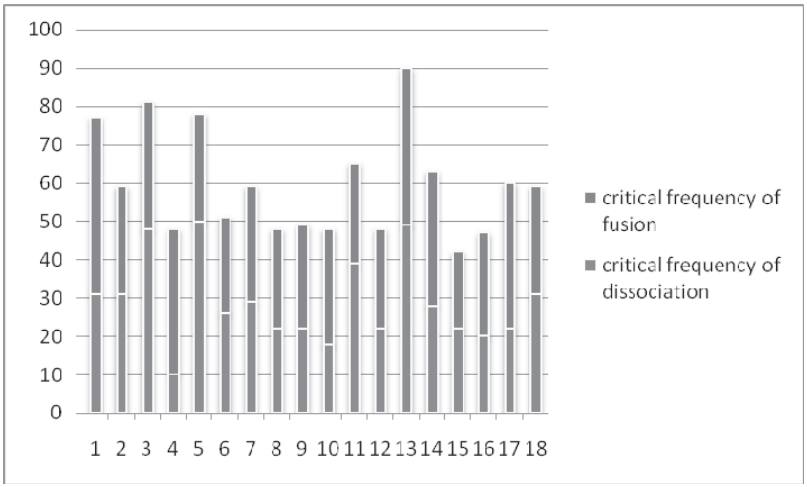
## Subjects Testing

In order to establish the relationship between cortex fatigue and physical fatigue, 18 subjects were tested, aged between twenty-three and forty, with three to fourteen years of competition experience in various sports disciplines, such as martial arts (40%), handball (27%), football (13%), swimming (6%), skiing (7%), and fitness (7%). Prior to carrying out the test, subjects were advised to indicate the proper timing for determining the perception of continuous and discontinuous light. Through the testing procedure the stimuli were presented, and the reactions of each subject were recorded, the obtained data being stored in the device memory.

## Results

The results obtained from the subjects of the study are shown in Figure 3-13 below.

**Figure 3-13. Graphical representation of results**




Referring to the critical frequency of fusion, the data shows an average value of 30.17 Hz, with a standard error of 2.28 Hz, as well as a standard deviation of 9.69, while the simple variation for ascending trajectory was calculated at 93.86. Both the lowest (10.8Hz) and highest registered value (48.1 Hz) were eliminated from the statistical calculation as improbable. Data are presented in Table 3-8 below.

As far as determining the critical frequency of dissociation, in the context of the descending trajectory, the data obtained led to the following results—an average value of 29.63 Hz, with a standard error of 1.63, a standard deviation of 6.90 and a variation of 47.60. The lowest variation recorded in this case was 18.8 Hz (unlike the ascending trajectory where it amounted to 10.8 Hz). In the case of this trajectory, the recorded results revealed significantly better values.

**Table 3-8. Descriptive statistics of results**

| Descriptive Statistics | Critical frequency of fusion | Critical frequency of dissociation |
|---|---|---|
| Mean | 30.17 | 29.63 |
| Standard Error | 2.28 | 1.63 |
| Standard Deviation | 9.69 | 6.90 |
| Sample Variance | 93.86 | 47.60 |
| Minimum | 10.8 | 18.8 |
| Maximum | 48.1 | 43.8 |
| Count | 18 | 18 |

## Conclusion

Compared to data existing in literature, the results of our study showed significantly higher values. This is a consequence of the physical fatigue state that the study subjects declared at the beginning of the study. In this respect, the data gathered allowed us to draw the conclusion that the level of cortex fatigue is closely linked to the level of physical fatigue felt and declared by the subjects investigated. Consequently, it may be considered that facile testing of some cortex fatigue indicators can provide relevant information on general physical fatigue.

To conclude, the data gathered in virtue of this study stress the fact that the current test may have a significant role in assessing the nervous fatigue level of the visual analyzer and other nervous instances involved in physical efforts with visual control.

## References

Gagea, A. (2002). *Cercetări interdisciplinare în domeniul sportului* [Interdisciplinary Research in Sports]. Deva: Destin.

—. (2010). *Tratat de cercetare științifică* [Tretease of Scientific Research]. București: Discobolul.

Gagea, Gabriela & Păunescu, Mihaela-Cristina. (2012). "Essay on Physical and Cortex Fatigue Due to Sport-Specific Effort." *International Scientific Symposium "Applications of Kinesiotherapy and Sports Medicine in Motor Activities,"* Bucureşti: 46–51.

# GLOBAL FUNCTIONING AND QUALITY OF LIFE IN BIPOLAR AFFECTIVE DISORDER AND RECURRENT DEPRESSIVE DISORDER

RADU-ȘTEFAN ROMOȘAN, FELICIA ROMOȘAN AND CRISTINA-ANA BREDICEAN

## Introduction

Bipolar affective disorder and recurrent depressive disorder are the two most prevalent affective disorders (Andrade et al. 2003; Kessler et al. 2003; Soldani, Sullivan & Pedersen 2005). They both negatively influence the quality of life and global functioning of patients especially during acute episodes and remission (Arnold et al. 2000; Robb et al. 1997; Cook et al. 1996).

Quality of life (QOL) and global functioning in affective disorders are one of the focus-points of current psychiatric interest (Pyne et al. 1997). Quality of life represents the physical, social, occupational and mental health status of an individual.

Global functioning represents the way the individual copes and behaves in a social, familial and professional context (World Health Organisation Quality of Life 1995).

The purpose of this study is to compare the degree of negative influence of the two nosological entities on the patient's global functioning and quality of life during remission because, during the acute episode of any physical or psychiatric disorder, quality of life severely diminishes.

## Material and Methods

The sample consisted of 174 participants, 65 of whom were euthymic outpatients diagnosed with Recurrent Depressive Disorder (RDD), 51 were euthymic outpatients diagnosed with Bipolar Affective Disorder (BAD) and 58 were healthy subjects. They were from the Timişoara

metropolitan area, and participated in the survey between June 2009 and December 2011.

The patients had to meet the following criteria: (a) age eighteen to sixty-five; (b) ICD-10 (WHO 2010) diagnosis of bipolar I disorder, bipolar II disorder or recurrent depressive disorder; (c) euthymic state for at least 2 months, confirmed by a Hamilton Depression Rating Scale (HAM-D) (Hamilton 1960) total score <8, and a Young Mania Rating Scale (YMRS) (Young et al. 1978) total score <6; (d) written informed consent; and (e) the lack of other current or life-time comorbid ICD-10 diagnoses of other psychotic disorders, neurological or other somatic disorders of sufficient severity to interfere with the assessments.

The control group included subjects without current or past mental disorders as ascertained by the Structured Clinical Interview for DSM-IV-TR Non-patient Edition (First et al. 2001) and matched (regarding gender and age) the two patient groups.

The local ethics committee reviewed and admitted the study-protocol.

We performed subject assessment on study entry by using the Romanian version (5.0.0) of the MINI—International Neuropsychiatric Interview (Sheehan et al. 1998).

We gathered general socio-demographic and clinical variables (age at onset, total number of episodes, episodes per year and disorder duration) via patient report, clinical interview and medical report.

We used the SF-36 v2 Scale for assessing the quality of life in physical and psychological health, environmental factors and social relationships. It also includes questions about perceived general health and perceived quality of life. Scores are on a scale ranging from 0 to 100 (with 100 meaning best possible health) (Ware & Sherbourne 1992).

The GAF Scale assesses psychological, social and occupational functioning, with scores ranging from 0 to 100 (0 meaning inadequate information and 100 meaning superior functioning in a wide range of activities without any symptoms) (American Psychiatric Association 2000, 34).

We performed statistical data analysis using the Statistical Package for the Social Sciences software, ANOVA and chi-sq. tests.

## Results and Discussion

We selected 116 outpatients and 58 controls for the study. Of 51 subjects, 32 (62.75%) were female, and 19 (37.25%) were male in the bipolar disorder group; 42 (64.61%) of the 65 subjects were female and 23 (35.38%) male in the recurrent depressive disorder group; 37 (63.79%)

were female and 21 (36.21%) male in the control group. The mean age was 43.45 years (SD=9.08) in the bipolar group, and 48.60 (SD=7.37) in the recurrent depressive disorder group, while in the control group, it was 44.32 (SD=8.54) (see Table 3-9 below).

**Table 3-9. Socio-demographic characteristics**

| Socio-demographic characteristics | BD | | RDD | | Controls | |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % |
| **Educational level** | | | | | | |
| Middle school | 10 | 19.61 | 27 | 41.54 | 5 | 8.62 |
| High school | 28 | 54.90 | 24 | 36.92 | 18 | 31.03 |
| College | 13 | 25.49 | 14 | 21.54 | 35 | 60.35 |
| **Marital status** | | | | | | |
| Married/In a relationship | 21 | 41.78 | 45 | 69.23 | 45 | 77.58 |
| Single/Divorced/Widowed | 30 | 58.82 | 20 | 30.77 | 13 | 22.42 |
| **Employment status** | | | | | | |
| Employed | 19 | 37.25 | 27 | 41.54 | 41 | 70.69 |
| Unemployed | 7 | 13.73 | 5 | 7.69 | 4 | 6.90 |
| Retired | 25 | 49.02 | 33 | 50.77 | 13 | 22.41 |

Table 3-9 above illustrates that only a small percentage of affective patients completed college. We also see higher percentages of single, divorced or widowed patients in the affective disorder groups when comparing them to the control group. As expected, we notice a significantly higher percentage of retired subjects in the two affective groups when we compare them to the control group.

A lower age at onset could be a predictor for a lower quality of life, according to Perlis et al. (2004). Consistent with their study, we found a lower age at onset in the bipolar group than in the recurrent depressive group. A higher disorder duration (p=0.000) and a higher total episode number (p=0.000) could indicate a lower degree of global QOL and global functioning in the bipolar disorder group when compared to the recurrent depressive group. We also found that the mean episode duration in the recurrent depressive group was higher than in the bipolar disorder group, suggesting a lower quality of life and global functioning of recurrent depressive patients for longer periods of time than bipolar patients (during the acute episodes).

Comparing the recurrent depressive group with the control group we find statistically significant differences between the two groups (except the emotional role; p=0.066), which suggest a lower quality of life and global

functioning in the recurrent depressive group (see Tables 3-10 and 3-11 below).

**Table 3-10. Clinical characteristics of the affective disorder groups**

| Clinical characteristic | BD Median value | RDD Median value | Z-value (adjusted) | P-value |
|---|---|---|---|---|
| **Age at onset (years)** | 27.0 | 38.00 | -5.74 | p=0.000* |
| **Disorder duration (years)** | 15.0 | 10.00 | 3.15 | p=0.000* |
| **Total number of episodes** | 7.00 | 4.00 | 4.48 | p=0.000* |
| **Number of episodes / year** | 0.58 | 0.53 | 1.37 | p=0.17 |
| **Episode duration (weeks)** | 12.00 | 17.00 | -4.39 | p=0.000* |

*Statistically significant

**Table 3-11. QOL and GAF scores for RDD vs. control group**

| Domains | RDD (Mean±SD) | HC (Mean±SD) | P-value |
|---|---|---|---|
| Physical Functioning (PF) | 68.1 (23.3) | 85.3 (29.3) | p=0.000* |
| Role-Physical (RP) | 55.7 (20.4) | 84.2 (32.3) | p=0.000* |
| Bodily pain (BD) | 68.3 (19.7) | 83.1(17.3) | p=0.000* |
| General Health (GH) | 60.8 (21.4) | 70.5 (20.4) | p=0.011* |
| Vitality (VT) | 51.4 (17.9) | 66.3 (17.6) | p=0.000* |
| Social function (SF) | 73.5 (19.2) | 79.8 (15.4) | p=0.048* |
| Role-Emotional (RE) | 70.8 (18.9) | 62.5 (30.1) | p=0.066 |
| Mental health (MH) | 76.2 (19.7) | 86.2 (19.2) | p=0.005* |

*Statistically significant

Table 3-12 below compares the SF-36 scores in the bipolar group with the control group. Except for the emotional role, all differences are highly statistically significant, suggesting a much lower global functioning and quality of life in the bipolar group when compared to the controls.

**Table 3-12. QOL and GAF scores for BD vs. control group**

| Domains | BD (Mean±SD) | HC (Mean±SD) | P-value |
|---|---|---|---|
| Physical Functioning (PF) | 66.7 (22.3) | 85.3 (29.3) | p=0.000* |
| Role-Physical (RP) | 55.2 (21.5) | 84.2 (32.3) | p=0.000* |
| Bodily pain (BD) | 74.5 (22.9) | 83.1(17.3) | p=0.028* |
| General Health (GH) | 52.8 (18.4) | 70.5 (20.4) | p=0.000* |
| Vitality (VT) | 44.1 (16.8) | 66.3 (17.6) | p=0.000* |
| Social function (SF) | 57.3 (18.4) | 79.8 (15.4) | p=0.000* |
| Role-Emotional (RE) | 55.6 (16.4) | 62.5 (30.1) | p=0.148 |
| Mental health (MH) | 58.2 (18.5) | 86.2 (19.2) | p=0.000* |

*Statistically significant

Table 3-13 below compares the 8 domains of the SF-36 and the GAF score between the recurrent depressive group and the bipolar group. There were several statistically significant differences between the two affective disorder groups regarding bodily pain (p=0.041), general health (p=0.035), vitality (p=0.027), social functioning, emotional role and mental health (p=0.000).

**Table 3-13. QOL and GAF scores—BD versus RDD**

| Domains | BD (Mean±SD) | RDD (Mean±SD) | P-value |
|---|---|---|---|
| Physical Functioning (PF) | 66.7 (22.3) | 68.1 (23.3) | p=0.744 |
| Role-Physical (RP) | 55.2 (21.5) | 55.7 (20.4) | p=0.898 |
| Bodily pain (BD) | 76.1 (20.9) | 68.3 (19.7) | p=0.041* |
| General Health (GH) | 52.8 (18.4) | 60.8 (21.4) | p=0.035* |
| Vitality (VT) | 44.1 (16.8) | 51.4 (17.9) | p=0.027* |
| Social functioning (SF) | 57.3 (18.4) | 73.5 (19.2) | p=0.000* |
| Role-Emotional (RE) | 55.6 (16.4) | 70.8 (18.9) | p=0.000* |
| Mental health (MH) | 58.2 (18.5) | 76.2 (19.7) | p=0.000* |
| GAF Score | 57.2 (13.2) | 61.1 (11.2) | p=0.083 |

*Statistically significant

The results suggest a lower quality of life and global functioning in the bipolar disorder group. There were no statistically significant differences between the two groups regarding physical functioning, physical role and GAF score. These findings are consistent with other studies (Moreno et al. 2012; Ishak et al. 2012).

In accordance with previous studies, the results support the evidence that there is a gap between symptomatic recovery and complete, functional recovery and quality of life improvement in both affective disorders (Altshuler et al. 2006; Bonnín et al. 2010; Fagiolini et al. 2005).

## Limitations

The limits of this study are the relatively small number of cases investigated, and the number of assessments carried out. A higher number of cases (preferably with a nationwide distribution) coupled with a wider set of data and a higher number of followups would provide additional information about the degree of negative influence that the affective disorders have on quality of life and global functioning during euthymic periods (remission).

## Conclusions

Bipolar disorder and recurrent depressive disorder are chronic psychopathological disorders which have a negative influence on most domains of quality of life and global functioning of patients even during remission.

Bipolar patients seem to have a lower degree of global functioning and quality of life in almost all domains during remission than recurrent depressive patients who, in turn, have lower QOL and GAF scores compared to the controls.

Adherence to medication, frequent followups and socio-familial, occupational and financial support are undeniably necessary to promote quality of life.

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## References

Altshuler, L. L., Post, R. M., Black, D. O., Keck, P. E. Jr., Nolen, W. A., Frye, M. A., Suppes, T., Grunze, H., Kupka, R. W., Leverich, G. S., McElroy, S. L., Walden, J. & Mintz, J. (2006). “Subsyndromal

Depressive Symptoms Are Associated with Functional Impairment in Patients with Bipolar Disorder: Results of a Large, Multisite Study." *Journal of Clinical Psychiatry* 67 (10): 1551–1560.

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders. DSM-IV-TR Fourth Edition (Text Revision)*. Arlington, VA: American Psychiatric Publications.

Andrade, L., Caraveo-Anduaga, J. J., Berglund, P., Bijl, R. V., De Graaf, R., Vollebergh, W., Dragomirecka, E., Kohn, R., Keller, M., Kessler, R. C., Kawakami, N., Kiliç, C., Offord, D, Ustun, T. B. & Wittchen, H. U. (2003). "Epidemiology of Major Depressive Episodes: Results from the International Consortium of Psychiatric Epidemiology (ICPE) Surveys." *International Journal of Methods in Psychiatric Research* 12 (1): 3–21.

Arnold, L. M., Witzeman, K. A., Swank, M. L., McElroy, S. L. & Keck, P. E. Jr. (2000). "Health-related Quality of Life Using the Sf-36 in Patients with Bipolar Disorder Compared with Patients with Chronic Back Pain and General Population." *Journal of Affective Disorders* 57 (1–3): 235–259.

Bonnín, C. M., Martínez-Arán, A., Torrent, C., Pacchiarotti, I., Rosa, A. R., Franco, C., Murru, A., Sanchez-Moreno, J. & Vieta, E. (2010). "Clinical and Neurocognitive Predictors of Functional Outcome in Bipolar Euthymic Patients: A Long-Term, Follow-Up Study." *Journal of Affective Disorders* 121 (1–2): 156–160.

Cook, R. G., Robb, J. C., Young, L. T. & Joffe, R. T. (1996). "Well-being and Functioning in Patients with Bipolar Disorder Assessed Using the MOS- 20 Item Short Form (SF-20)." *Journal of Affective Disorders* 39 (2): 93–97.

Fagiolini, A., Kupfer, D. J., Masalehdan, A., Scott, J. A., Houck, P. R. & Frank, E. (2005). "Functional Impairment in the Remission Phase of Bipolar Disorder." *Bipolar Disorders* 7 (3): 281–285.

First, M. B., Spitzer, R. L., Gibbon, Miriam & Williams, Janet B. W. (2001). *Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Non-Patient Edition, version 2.0 (SCID-I/NP)*. New York: New York State Psychiatric Institute, Biometric Research.

Hamilton, M. (1960). A Rating Scale for Depression. *Journal of Neurology, Neurosurgery and Psychiatry* 23: 56–62.

Ishak, W. W., Brown, K., Aye, S. S., Kahloon, M., Mobaraki, S. & Hanna, R. (2012). "Health-Related Quality of Life in Bipolar Disorder." *Bipolar Disorders* 14 (1): 6–18.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Koretz, D, Merikangas, K. R., Rush, A. J., Walters, E. E. & Wang, P. S. (2003). "The

Epidemiology of Major Depressive Disorder: Results from the National Comorbidity Survey Replication (NCS-R)." *Journal of the American Medical Association* 289 (23): 3095–3105.

Moreno, C., Hasin, D. S., Arango, C., Oquendo, M. A., Vieta, E., Liu, S., Grant, B. F. & Blanco, C. (2012). "Depression in Bipolar Disorder Versus Major Depressive Disorder: Results from the National Epidemiologic Survey on Alcohol and Related Conditions." *Bipolar Disorders* 14 (3): 271–282.

Perlis, R. H., Miyahara, S., Marangell, L. B., Wisnievski, S. R., Ostacher, M., DelBello, M. P., Bowden, C. L., Sachs, G. S & Nierenberg, A. A. (2004). "Long term implication of early onset in bipolar disorder: Data from the first 1000 participants in the systematic treatment enhancement program for bipolar disorder." *Biol. Psychiatry* 55 (9): 875–881.

Pyne, J. M., Patterson, T. L., Kaplan, R. M., Gillin, J. C., Koch, W. L. & Grant, I. (1997). "Assessment of the Quality of Life of Patients with Major Depression." *Psychiatric Services* 48 (2): 224–230.

Robb, J. C., Cooke, R. G., Devins, G. M., Young, L. T. & Joffe, R. T. (1997). "Quality of Life and Lifestyle Disruption in Euthymic Bipolar Disorder." *Journal of Psychiatric Research* 31 (5): 509–517.

Sheehan, D. V., Lecrubier, Y., Sheehan, K. H., Amorim, P., Janavs, J., Weiller, E., Hergueta, T., Baker, R. & Dunbar, G. C. (1998). "The Mini- International Neuropsychiatric Interview (M.I.N.I.): The Development and Validation of a Structured Diagnostic Psychiatric Interview for DSM-IV and ICD-10." *Journal of Clinical Psychiatry* 59 (20): 22–33.

Soldani, F., Sullivan, P. F. & Pedersen, N. L. (2005). "Mania in the Swedish Twin Registry: Criterion Validity and Prevalence." *Australian and New Zealand Journal of Psychiatry* 39 (4): 235–243.

Ware, J. E. Jr. & Sherbourne, C. D. (1992). "The MOS 36-item Short-Form Health Survey (SF-36)." *Medical Care* 30 (6): 473–483.

World Health Organisation Quality of Life Groups. (1995). "The World Health Organization Quality of Life Assessment." *Social Science & Medicine* 10: 1403-1409.

World Health Organization. (2010). *International Statistical Classification of Diseases and Related Health Problems 10th Revision*.

Young, R. C., Biggs, J. T., Ziegler, V. E. & Meyer, D. A. (1978). "A Rating Scale for Mania: Reliability, Validity and Sensitivity." *British Journal of Psychiatry* 133 (5): 429–35.

# Workplace Health Promotion in Companies from Timiş County, Romania 2010–2012

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## Introduction

The workplace, along with school, hospital, city, island and marketplace, is one of the priority settings for health promotion into the twenty-first century. It directly influences the physical, mental, economic and social well-being of the workers and, consequently, the health of their families, communities and society. It offers an ideal setting and infrastructure to support the promotion of the health of a large audience. Non-work related factors also affect the health of workers.

The concept of the Health Promoting Workplace (HPW) is becoming increasingly relevant as more private and public organisations recognize that future success in a globalizing marketplace can only be achieved with a healthy, qualified and motivated workforce. A HPW can ensure a flexible and dynamic balance between customer expectations and organisational targets, on the one hand, and employee skills and health needs on the other, which can assist companies and work organisations to compete on the marketplace. For nations, the development of HPW will be a pre-requisite for sustainable social and economic development (World Health Organisation 2012).

Health promotion is the process of enabling people to increase control over and improve health. An individual or group must be able to identify and achieve aspirations, satisfy needs, and change or cope with the environment if they want to reach a state of complete physical, mental and social well-being. Health is, therefore, a resource for everyday life, and not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes

beyond healthy lifestyles to well-being (Workplace Health Promoting-Training 2009, 21–46).

The Luxembourg Declaration on Workplace Health Promotion defines it as "the combined efforts of employers, employees and society to improve the health and wellbeing of people at work." WHP "can be achieved through a combination of improving work organisation and the working environment, promoting active participation, and encouraging personal development" (European Network for Workplace Health Promotion 1998)

Since 1996, the European Network for Workplace Health Promotion (ENWHP) has been at the leading edge of WHP efforts in Europe.

An overall WHP model includes:

- Encouraging employers to provide meaningful and stimulating work opportunities and supportive work organisation for their employees.
- Providing opportunities for employee skill development including self-confidence and social competence.
- Promoting greater employee participation in decision-making.
- Recognising the key role of managers in supporting staff.
- Creating a positive working environment and setting clear job roles and expectations.
- Reducing sources of stress in the work environment and developing resilience to stress by promoting coping strategies.
- Encouraging a culture of enterprise, participation, equity and fairness, and challenging stigma and discrimination in the workplace.
- Supporting, retaining and employing people with mental health problems.
- Developing and implementing strong policies on mental health and wellbeing at work.
- Monitoring the impact of these policies and interventions (Workplace Health Promoting-Training 2009, 21-46).

## Methods and Techniques

This pilot project, conducted in 2012, is the continuation of another much larger project started in 2010 and completed in 2011 that included 15 companies and over 4,000 employees in Timiş County with the following activities:

- A needs assessment study, addressed particularly for Health & Safety and Human Resources managers of these 15 companies.

- Training of these managers on topics identified as priorities in workplace health.
- Information and education sessions for employees on two health topics chosen by the staff of the company.

Because retirement age has increased, and cardiovascular disease is the number one killer at local, national and EU level (where there is an aging population), many companies have proposed to combat some of the risk factors for cardiovascular diseases, such as:

- Inactivity
- Unhealthy diets
- Alcohol
- Smoking; and, last but not least
- Stress.

Companies that have faced the problem of smoking at work, and chose the theme of smoking control also took other measures such as:

- Establishing a place for smokers, with card access
- Rewarding employees who quit smoking.

In companies that have chosen the theme of a healthy diet, employees raised the necessity for practical demonstrations to cook healthily on a budget because there is a persistent idea that a healthy diet is expensive.

Improving communication skills for conflict prevention at the workplace has been a concern for many companies. Employers encouraged and supported employees to participate in the workplace health promotion project based on consultation with staff, human resources and head start managers.

We measured blood pressure with a sphygmomanometer, and weight and fat percentage with a scale with bioelectrical impedance. Furthermore, we performed evaluation by interview.

## Results

The WHP program was a project for human resources development and a model of good practice. It was very useful and well received by both employees and the staff, showing interest in such activities and requesting its follow up with practical applications (cooking classes, measuring cholesterol, measuring blood pressure, measuring body mass index, etc.).

This is why, in 2012, the project was continued with a pilot program to combat hypertension in one of the 15 companies included in the initial project.

The WHP program, conducted in 2010 to 2011, raised the level of knowledge of the employees but did not change behaviour. In addition, we faced reluctance from employees where information sessions were held in their spare time or where they were paid in time. In the pilot program including 112 employees, in addition to information on risk factors in hypertension, employees benefited from services such as:

- Weight monitoring
- Estimation of the percentage of body fat
- Blood pressure monitoring.

Participation in the pilot project was 95%, employees engaging in these activities on their own initiatives compared to the original project, where employees received only information and where the percentage of participation was over 80%. In terms of satisfaction, 93% of employees participating in the WHP were satisfied or very satisfied with the project activities, while 7% did not know or did not want to answer to this question.

Along the Blood Pressure (BP) screening, we found 12 people with BP values above normal, these persons being directed to their general practitioner. A share of 36% of employees monitored in the project had a weight and body fat percentage greater than normal. Some 46 participants said that they planned to change their lifestyle after they received screening results and information.

## Discussion

According to statistical data, population morbidity and mortality from blood circulation diseases rank first among all diseases. The most difficult complications are cardiac and cerebral stroke, which can lead to invalidity. We noted an increase in the level of diseases among the young working population (Zvyagyna 2003).

While some health promotion activities in the workplace tend to focus on a single illness or risk factor (e.g. prevention of hypertension) or on changing personal health practices and behaviours (e.g. inactivity), there is a growing appreciation that there are multiple determinants of workers' health:

- Health Behaviours interventions, such as Alcohol and Substance Misuse, Nutrition and Physical Activity, Tobacco Use.
- Health Screening interventions—Blood Pressure, Obesity (Body Mass Index), Breast Cancer, Cervical Cancer, Colorectal Cancer, Cholesterol, Type 2 Diabetes.
- Mental Health interventions—prevention of Depression.
- Injury prevention—Work-Related Musculoskeletal Disorders and Ergonomics.

Combinations of interventions are more effective than any other intervention alone (Centre for Disease Control 2012). In our pilot project, we had combinations of interventions, such as health behaviours and health screening activities.

In addition to person-focused interventions, we moved toward a more comprehensive approach which acknowledges the combined influence of personal, environmental, organizational, community and societal factors on employee well-being.

A health-promoting workplace recognizes that a healthy workforce is essential and integrates policies, systems and practices conducive to health at all levels of the organization. Rather than a series of projects, workforce health promotion is an ongoing process for improving work and health. Effective health promotion assists employers to adopt appropriate administrative procedures and workers to use safe working practices. Occupational health personnel benefit from training and education in health promotion to enable them to implement it as a part of their occupational health practice.

Worksite blood pressure screening, health education, and lifestyle counselling can identify employees with high blood pressure and help them control it.

Periodic blood pressure screening and health risk assessment programs at the worksite and other activities can provide blood pressure information to employees. Employees who have elevated values should get therapeutic lifestyle counselling and be sent to clinical care for follow-up. Health care professionals or human resources staff can provide information about the benefits and availability of screening to encourage and motivate employees to be screened (Centre for Disease Control 2012).

## Conclusions and Recommendations

Workplace Health Promotion programs increase the efficiency of companies. To be successful, campaigns must include information

sessions for employees and must also provide services that lead to behaviour change. We expect that the results will help decrease morbidity and mortality among employees in particular, as well as the population as a whole, as well as prolong working capacity, prevent complications of hypertension and decrease treatment costs for medical complications.

We propose starting health promotion programs at the workplace, including methods of intervention combining both education-focused information and methods of screening. Campaigns should cover a large number of risk factors and prevent a large number of diseases, with companies moving towards health policies tailored to employees, employers and the community.

## References

Centres for Diseases Control and Prevention—CDC. Workplace Health Promotion (2012). *Blood Pressure Screening and Control.* http://www.cdc.gov/workplacehealthpromotion/implementation/topics/blood-pressure.html.

European Network for Workplace Health Promotion. (1998). *The Luxembourg Declaration on Workplace Health Promotion in the European Union.* http://www.enwhp.org/fileadmin/rs-dokumente/dateien/Luxembourg_Declaration.pdf

National Institute for Health and Clinical Excellence. (2008). *Workplace health promotion: how to encourage employees to be physically active.* NICE public health guidance 13.

World Health Organisation. (2012). *The workplace: A priority setting for health promotion*. http://www.who.int/occupational_health/topics/workplace/en/.

*WHP-Training. Promovarea Sănătăţii la locul de muncă. Definiţii, metode şi tehnici* [WHP-Training. Promoting Health at Workplace: Definitions, Methods, and Techniques]. (2009). Bucureşti.

Zvyagyna, Lilia. (2003). Hypertension in seamen: diagnosis, treatment, and prevention. *Healthy workplace and health promotion activities: Symposium on occupational health promotion*. http://www.who.int/occupational_health/topics/en/oehtf6.pdf.

# LIFE AFTER FIRST EPISODE PSYCHOSIS

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## Introduction

After more than a century of research and debate, schizophrenia is still considered an illness with deep impact, both at the individual and systemic level. The World Health Organization's estimations show that schizophrenia accounts for 2.6% of the total burden of disease and this contribution is expected to increase (Tacchi & Scott 2005).

The development of pharmacotherapies for schizophrenia and related psychosis have induced a change in attitude of professionals, and following a reassessment of therapeutic objectives the final aim of the therapy process has become recovery. Despite the existence of various alternatives and the availability of new generation antipsychotics (with increased tolerance and efficacity) that are superior to classical medication, studies show that the expectancies of both professionals and patients were not met, and recovery is still difficult to achieve and maintain on the long term (Stoica 2008).

This context has led to a more complex and differentiated therapeutic approach for patients with schizophrenia and related psychosis by combining pharmacotherapy with psychosocial interventions that can provide patients with more benefits. A new concept, the Delay of Intensive Psychosocial Treatment (DIPT), was created in close relation with the evolution of schizophrenia, emphasizing the need for complex intervention even from the first months of the illness course (Haan et al. 2003).

## Methods and Instruments Used in the Study

This study is aimed at investigating the efficiency of rehabilitation programs after (at least) two years of illness (from the onset of the first episode of psychosis) and analyzing the length of time required for mental

health services to respond to the complex needs of patients with a first psychotic episode.

The study is part of a larger prospective research in the field of first episode psychosis. In 2007, the Timişoara Mental Health Center started The Initative of Intensive Care for First Episode Patients—I CARE program, a rehabilitation progam for patients with schizophrenia and related disorders. Forty-three subjects diagnosed with schizophrenia and schizoaffective disorder were assessed before and after completing the program during 2008 to 2011. In order to be included in the program, the patients had to be eighteen to sixty years old, diagnosed (according to the ICD-10 criteria) with schizophrenia or schizoaffective disorder, have no other Axis I psychiatric disorder, and currently be in ambulatory care in the Timisoara Mental Health Centre. Informed consent was obtained from all patients participating in the program. Patients presenting a diagnostic of psychotic disorder, organic type, or a diagnostic of psychosis due to drug and/or alcohol consumption, or psychotic symptoms in the context of existing epilepsy were excluded from the program. In addition, no patients less than eighteen years old were included. The diagnostic was established according to the ICD-10 criteria by the attending psychiatrist, and demographic data were collected from the observation sheets and direct anamnesis. At baseline the following standard scales were used:

- Clinical Global Impression scale (CGI severity)
- Global Assessment of Functioning Scale (GAF)
- Quality of Life Enjoyment and Satisfaction Questionnaire Scale (Q-LES-Q).

Likewise, the illness history, therapeutic options, patients' access to psychiatric services, and the outcome pattern (number of hospitalizations, number of days of hospitalization) were determined by direct anamnesis or using the patients' clinical sheet and consulting with the attending physician. For the final assessment, the same baseline scales were used, and patients' adherence to treatment was established with the help of their attending physician (each physician was asked to complete a questionnaire). The course (evolution) of the illness was assessed using the data collected from clinical observation sheets and hospitalization charts and by direct discussions with the patients' attending physicians.

The I Care program started with an analysis of the patients' needs (performed in 2007), followed by the launch of the program, selection of patients and their referral to the professionals in the Timisoara Mental Health Center, planning and organizing the rehabilitation activities and

forming psychotherapy groups. The activities were carried out up to 2011 and monitored regularly. In 2011 new group activities were planned. The rehabilitation interventions performed were:

- Family therapy
- Group psychotherapy
- Club activities
- Occupational therapies
- Other recreational activities.

The general aim of all activities was to provide an adequate quality of life for the patients, despite their disabilities and illness-induced residual syndromes. More specific aims were:

- Developing patients' social abilities
- Promoting their sense of responsibility
- Improving patients' autonomy
- Minimizing discrimination
- Promoting adequate social standards.

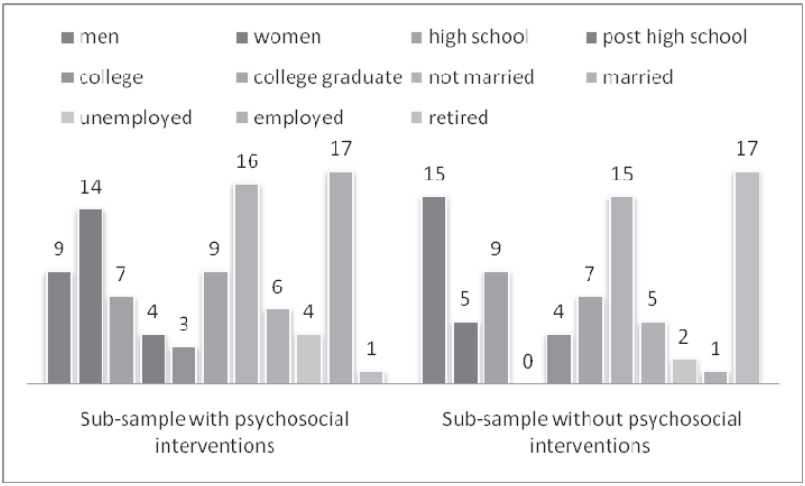
## Results and Discussions

The study sample included 43 patients with a diagnostic of the first episode psychosis at onset. From the 43 subjects studied, 27 (62.8%) had a diagnostic of schizophrenia (F20), and the average onset age was 22.7 (std.dev.=6.4 years), 16 of 43 (37.2%) had a diagnostic of Schizo-affective disorder (F25) and the average onset age was 26.4 years (std.dev.=7.3 years). Twenty subjects have received no rehabilitation therapy, and this is to be considered for further purposes as sub-sample no. 1. Twenty-three subjects were included in the I Care program and benefited from various types of rehabilitation therapy, and this is to be considered for further analysis as sub-sample no. 2. Eleven of the 23 patients in sub-sample 2 (47.8%) benefitted of 2 types of rehabilitation intervention, 8 (34.8%) benefitted from 3 types of rehabilitation intervention, and 4 (17.4%) benefitted from 4 types of intervention. Ten patients benefitted from family type therapy, 15 from psychotherapy, 17 from occupational therapy, and 15 from various types of sociotherapy. The participation of patients in rehabilitation programs was based on their willingness and desire to participate.

## Demographic Traits of the Sub-Samples

Differences between sub-samples with regard gender and marital, professional and educational status are presented in Figure 3-14 below. Patients participating in the rehabilitation programs were more frequently women, non-married, living in urban areas and actively employed. Average age at assessment date for patients with psychosocial interventions was 35.3 years (std.dev.=7.04 years) and for patients without psychosocial interventions 39.04 years (std.dev.=8.7 years).

**Figure 3-14. Differences between sub-samples with regard to gender distribution, and distribution on marital, professional and educational status**



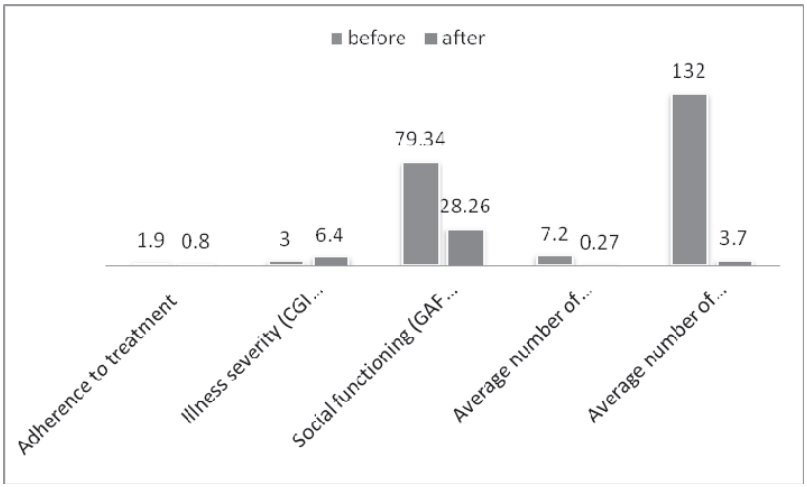

## Clinical and Evolution Traits of the Sub-Samples

Patients in the sub-sample with psychosocial interventions had an average course of illness of 10.8 years (std.dev.=5.4 years), and patients in the sub-sample without psychosocial interventions 15.8 years (std.dev.=8.1 years). Before psychosocial therapy, there were no statistically significant differences between patients with regard to illness severity, social functioning, and adherence to treatment or quality of life. There were statistically significant differences between the average number of hospitalizations/year and the average duration of hospitalizations/year, and patients who enrolled in rehabilitation programs had a higher number of hospitalizations/year (3.7 hospitalizations/year versus 0.8

hospitalizations/year), and larger hospitalization periods (132.9 days/year versus 30.7 days/ year).

For the sample benefitting from psychosocial interventions, the following clinical and course parameters were compared: average number of hospitalizations/year before and after interventions, and scores obtained at GAF and CGI scales before and after interventions. The results show that there are statistically significant differences between the average number of hospitalizations before and after the interventions, between the average hospitalization period before and after interventions, and the GAF and CGI scores before and after interventions (see Figure 3-15 below). In addition, there are differences between the patients' adherence to treatment before and after interventions. Specifically, patients following various types of psychosocial interventions presented (afterwards) a lower number of hospitalizations/year, a reduced duration of hospitalization period, have significantly improved their social functioning, adherence to treatment and reducing the clinical severity of their illness.

**Figure 3-15. Comparison between clinical parameters of the sub-sample with psychosocial interventions before and after the completion of rehabilitation programs**

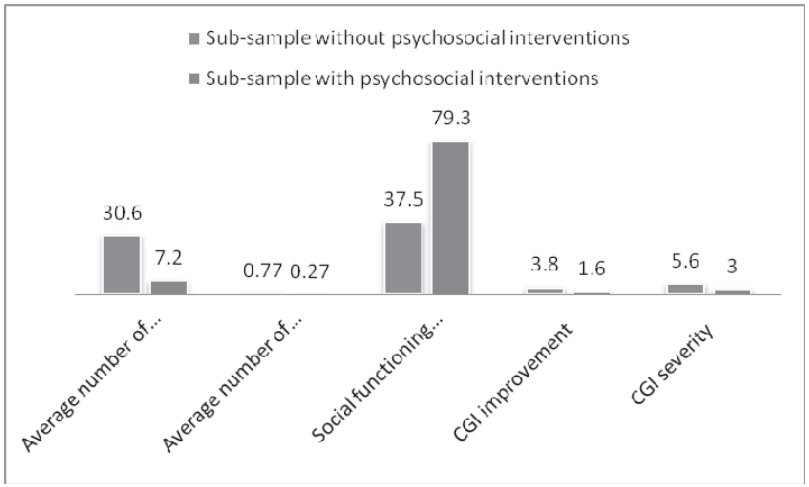



The sub-samples were compared again after the patients in the first sub-sample completed their psychosocial programs (see Figure 3-16 below). Statistically significant differences were found between the two samples with regard to:

- Illness severity
- Illness improvement
- Global functioning
- Adherence to treatment
- Average number of hospitalizations/year
- Average number of hospitalization days/year)
- Quality of life.

Patients completing the rehabilitation program have shown a significant improvement in social functioning. Rehospitalization rate and the number of days of hospitalization/year are higher in patients receiving only standard care than in patients who followed a rehabilitation program. Self-reported quality of life in patients benefitting from rehabilitation programs is superior to those receiving standard care. Moreover, the benefits of an increased quality of life are maintained one year after completion of the rehabilitation program.

**Figure 3-16. Comparison between the two sub-samples after the completion of rehabilitation programs**



**Response of psychiatric services to the need for care of patients with schizophrenia and schizophrenia-related psychosis and the patients' acceptance of therapy**

The patients were presented with the opportunity for following a rehabilitation program after a period from one to five years from illness onset. Note that patients who accepted to follow a rehabilitation program were approached after an average period of four and a half years since illness onset while patients who refused were approached after an average period of one and a half years after the illness onset. Generally, patients accepted to join the rehabilitation program one year after the proposal was intended. No significant relations have been found between the period required for the patient to accept rehabilitation therapy and traits like educational level, age at onset or duration of untreated psychosis, but there is a significant correlation with the illness course, i.e. the longer the illness course is, the longer the period required for the patient to accept rehabilitation therapy.

Patients were asked to fill in a questionnaire aimed to assess the impact of the illness on the patient's life and satisfaction with the rehabilitation program followed. The results show that 45% of patients considered that their life has been influenced greatly by their psychic illness, 35% consider that the most affected area of their life is professional and social and that the rehabilitation program has improved it with regard to social relationships, work and recreational activities, and physical and psychical health.

## Conclusions

Psychosocial interventions provided alongside standard pharmacological treatment can help increase the quality of life for patients with schizophrenia and schizophrenia-related disorder in many areas.

As the illness progresses, patients take longer to accept rehabilitation therapies. In addition, psychiatric services require an average period of three years to launch new rehabilitation programs for patients. The delay in initiating combined therapies shows that ambulatory services are not yet prepared to provide intensive rehabilitation programs for patients with schizophrenia.

The present study has inherent limitations due to the case-selection criteria and manages to identify a series of factors involved in the long-term course of schizophrenia, emphasizing the lack of a national strategy for providing care to patients with severe psychiatric disorders. Guidelines

and rehabilitation procedures must be developed for patients with first episode psychosis, and there must also be regular evaluations of the quality of psychiatric services.

## References

Haan, L. de, Hinszen, D. H., Lenior, M. E., Win, E. D. de & Qorsira, R. (2003). "Duration of Untreated Psychosis and Outcome of Schizophrenia: Delay in Intensive Psychosocial Treatment Versus Delay in Treatment With Antipsychotic Medication." *Schizophrenia Bulletin* 29 (2): 341–348.

Stoica, I. (2008). *Prodromul în primul episod psihotic* [Prodrome in the First Psychotic Episode]. Bucureşti: Infomedica.

Tacchi, M. J. & Scott, J. (2005). *Improving Adherence in Schizophrenia and Bipolar Disorders*. Hoboken, NJ: John Wiley and Sons.

# EVOLUTION OF PATIENTS WITH COLLAGEN DISEASES UNDER THE INFLUENCE OF PSYCHOLOGICAL FACTORS

SILVIA-SORINA ZUIAC

## Introduction

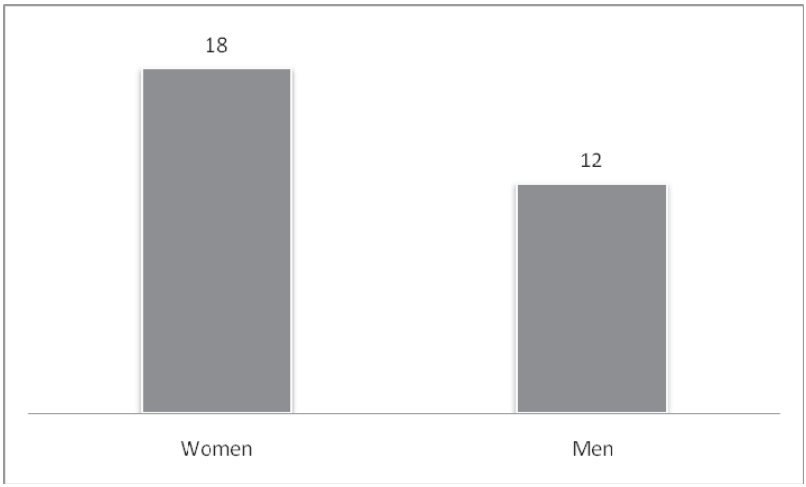
The term collagen was introduced in 1941 by Klemperer, and was accepted by most scholars, though it is not accurate. The name has its justification in the pathological substrate, which is the primary substance of fibrinoid degeneration of connective tissue. This degeneration can be met in varying degrees in different collagen diseases up to fibrinoid necrosis (Netemeyer, Bearden & Sharma 2003). The term includes several collagen diseases of which the most common are lupus erythematosus, Sjögren syndrome, rheumatoid arthritis and scleroderma generalized polymyositis. The problem that may arise is the incidence of familial cases, especially those with clinical and biological stigmata seen in many patients with borderline forms or association. From a biological point of view, inflammatory syndrome is found in varying degrees in all these diseases, but the most significant signs are troubles with a specific immunological problem because of the presence of a rheumatoid factor in the lupus disease, of antinuclear factors in scleroderma and rheumatoid arthritis, plus a therapeutic factor common to collagenosis, corticosteroids, and immunosuppressive (ibid.). The common feature between different collagens appears to be represented by the fact that the disease begins with an autoimmune vascular difference between the various syndromes resulting in expansion, location and extent of aggression. After Cortez & Pimenta, each collagen has a particular predilection for specific organs or systems (vessels, skin, nerves, muscles, joints, nerves, serous, heart, kidney, gastrointestinal tract, lung, CNS). Over time, they revealed a strong correlation between collagen diseases, cardiovascular diseases, and mental disorder which, in this case, are investigated through the questionnaire ATQ negative automatic cognitions supporting the hypothesis that stresses the importance of long-term amnestic structures.

These automatic negative cognitions are, in fact, products of the cognitive judgments and predictions made by the individual in relation to the self, world or future (Anastasi & Urbina 1976). Automatic negative cognitions are "repetitive, persistent and beyond the immediate control" and lead to encoding, scanning, storing, organizing and updating information. There are two stimuli that are inconsistent or regarded as irrelevant information that are forgotten or ignored. Stimuli that include schemes are encoded and developed (Messick 2002).

## Material and Methods

We conducted the survey between 2006 and 2008 at the Reşiţa Hospital Emergency Department Internal Medicine department (Caraş-Severin County, Romania) on 30 patients with collagen disease (18 women and 12 men) (see Figure 3-17 below).

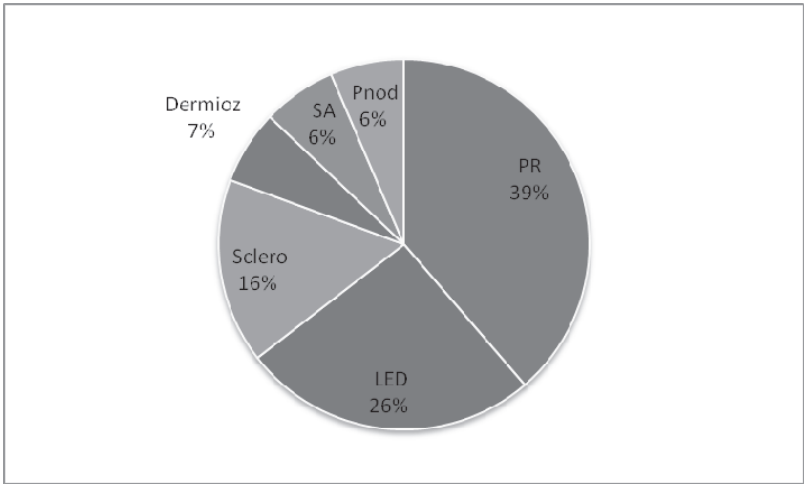
**Figure 3-17. Structure of patients per gender**




Subjects aged twenty-five to fifty had collagen diseases, and constituted the core group. Of the 30 patients, 12 had rheumatoid arthritis, 8 had lupus erythematosus, 5 had scleroderma, dermatomyositis, ankylosing spondylitis each, and 2 had arthritis. The study left out all patients who had a liver disease or an active autoimmune disease, active viral or bacterial infections, or renal failure. All patients underwent general examinations, disease-specific examinations and were subjected to the ATQ questionnaire

to identify the psychological profile of patients with collagen disease and hypertension. Collagen diseases presented above affect even the heart: pericarditis, myocarditis, endocarditis, myocardial infarction, heart failure, hypertension, turbulent rhythms. We also performed some examinations: ECG, Eco cardiac exercise testing.

**Figure 3-18. Distribution of patients with collagen disease**




## Laboratory Investigations

An Eco-bidimensional cardiac can identify the extent of damage to the heart. ECG approach to cardiovascular disease present in collagen has not always given an accurate diagnostic value of tests. In patients with high blood pressure, we checked it daily because blood pressure values were over the graduation standard developed by the European Society of Cardiology (2003) (140/90 mmHg). That can bring into question all patients with collagen vascular hypertension. After identifying these data and applying the ATQ questionnaire, we examined the results; a high score indicates a high level ATQ to negative automatic thoughts, and a low score indicates low negative automatic thoughts:

- Class 1: score ≤ 17, very low level of negative automatic thoughts (the level of automatic thoughts of the subjects ≤ 6.7% of the general population).

- Class 2: score = 18-20, low negative automatic thoughts (automatic thoughts of the subjects ≥ 6.7% of the general population).
- Class 3: score = 21-28, average level of negative automatic thoughts (automatic thoughts of healthy subjects ≥ 30.9).
- Class 4: score = 29-44, high negative automatic thoughts (automatic thoughts of the subjects ≥ 6.91% of the general population).
- Class 5: score ≥ 45, high level negative automatic thoughts (automatic thoughts of the subjects ≥ 93.3% of the general population); radiological assessment highlights fluid in the joints that get worse during the development of anomalies; back of the eye where the intraocular pressure is determined.

## Laboratory Tests

There were always some positive antinuclear antibodies. Date Blood: lipid spectrum, glucose spectrum, enzyme determinations, liver markers, antiviral liver markers, erythrocyte sedimentation rate (ESR), C-reactive protein, inflammation factors, protein, electrolyte, vitamin, pH, synovial fluid analysis although it is not always specific (C3 and C4 factors are strongly diminished in synovial fluid). For chronic cardiovascular disease, diagnosis was made through discussion with the patient based on clinical and laboratory signs previously found.

## References

Anastasi, Anne & Urbina, Susana. (1976). *Psychological Testing*. New York: Macmillan/McGraw-Hill School Division.

Messick, E. M. (2002). “Studying, Researching, and Applying Behaviour Analysis in New Zealand.” *The Behaviour Analyst Today* 3 (1): 24–29.

Netemeyer, R. G., Bearden, W. O. & Sharma, S. (2003). *Scale Development in the Social Sciences: Issues and Applications*. Palo Alto, CA: Sage Publications, Inc.

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