

# Evaluation of the Psychoneurotic Tendencies Risk Using the Woodworth Mathews Personality Inventory in Non-Institutionalized Persons

M.C. PÎRLOG<sup>1</sup>, CORNELIA RADA<sup>2</sup>,  
ILEANA PREJBEANU<sup>3</sup>, MONICA LAURA CARA<sup>4</sup>

<sup>1</sup>Medical Sociology Discipline, University of Medicine and Pharmacy of Craiova

<sup>2</sup>Institute of Anthropology "Fr. I. Rainer", Romanian Academy, Bucharest

<sup>3</sup>Environmental Health Discipline, University of Medicine and Pharmacy of Craiova

<sup>4</sup>Doctoral School, University of Medicine and Pharmacy of Craiova

**ABSTRACT: INTRODUCTION:** Multiple factors of vulnerability may lead to development of abnormal social behaviour and to important psychiatric diseases. The psychopathological characteristics present at individual level can lead to a pattern of population groups that are subject to developing mental illness risks. **MATERIAL AND METHODS:** Multidisciplinary study (2009-2011) to assessing the current situation of mental health and identifying population risk groups for developing psychiatric disorders in a non-institutionalised population. We used the Woodworth Mathews Inventory (76 items) to a randomly selected sample of 1,200 men and women, residents in urban and rural areas. **RESULTS:** The extreme scores for emotiveness had a frequency more than triple for women, and we found a similar situation for obsessive-neurasthenic and depressive tendencies. People aging over 35 years had a double score (limit and poignancy) for depression than younger people, meanwhile correlation between age under 35 years and instability and antisocial tendencies is highly statistically significant ( $p \leq 0.001$ ), the frequency of extreme scores being almost double than in the older people. **CONCLUSIONS:** Female gender has a vulnerability for develop depressive and emotional disorders and age over 35 is also significant correlated with depressive tendencies. Younger people (under 35 years) are predisposed for pathological antisocial behaviour, fact revealed by the high scores for instability and antisocial tendencies. It is necessary to develop a program focused on the two risk categories to prevent the possible occurrence of psychiatric disorders.

**KEYWORDS:** *personality traits, depression, antisocial behaviour*

## Introduction

In the light of the data published a decade ago by the World Health Organization (WHO), which revealed that almost one in ten people in the world (450 million people in 2001) suffered from a psychiatric disease and one in four people can be affected by a disorder from psychiatry spectrum, the assessment of mental health status of the population should be a regular task for authorities. [1] More than that, we have data about depressive disorder, viewed as one of the most important causes of disabilities worldwide: the fourth cause nowadays and the second cause only 10 years from now, in 2020, according to WHO studies. [2] With an incidence of 0.1 to 0.4 per 1000 population [3] and a lifetime prevalence between 1 and 18 per 1000 [4], schizophrenia is also a disease that represent a point of interest for the past, present and future studies.

Genetic vulnerability (gender, age, positive history in family for depression) combined with biological factors (birth trauma, neurodevelopmental abnormalities) and

environmental risk factors such as the economic and social context (economical and financial crisis, the increase of the unemployment rate, extensive changes in the social status of the individual, daily stress and uncertainty of tomorrow, belonging to a disadvantaged social group or to an ethnic minority) and cultural footprint are aggravating factors for the development of abnormal and unexpected social behaviour, that can lead to other important psychiatric diseases, such as major depressive disorders, schizophrenia or psychotic disorders.

Using a wide range of tests, scales and techniques to evaluate individual aspects such as the cognitive and emotional status or behavioural and social functioning, assessment of mental health is a multi-disciplinary task (psychiatry, psychology, sociology, epidemiology, public health) with multiple targets (individual, family, micro- and macro-social groups). At the individual level, these techniques are aimed to finding the structure and elements of personality, how to think and express themselves in social environment and to detect and measure any symptoms of

psychopathology. This type of tests can be divided into two main categories - objective and projective - each with their level of precision, accuracy and predictability. [5]

Woodworth and Bernreuter introduced and established the concept of psychoneurotic tendencies (Woodworth Personal Data Sheet, Bernreuter Personality Inventory) in the effort to assess the mental status of individuals and the possible trend of evolution to a psychiatric disorder. One important technique used to assess mental health and especially the psychoneurotic tendencies that are found in people belonging to the middle of social groups are Woodworth Psychoneurotic Inventory (WPI), the first effort to measure personality, developed for screening of World War I recruits, and Woodworth Mathews Inventory (WMI), a tool the purpose of which is to identify the personality disorders and extroversion – introversion trends based on revealing the type of social environment that favours the pathological tendency, the most widely used defence behaviour and, most importantly, eight significant psychopathological characteristics present at the individual level: emotion, obsessive-neurasthenic, schizoid, paranoid, hypochondria, depressive, histrionic, impulsive-epileptic, instability, and antisocial tendencies.

All these characteristics, obtained following the application of the method used, and results obtained can lead to a pattern of population groups being at risk for developing mental illness and, based on this data, to adopting a series of prophylactic measures and medical care that must be adjusted to the subjects' age and gender and to considering the biological basis of the personality for the mental hygiene rules.

## Material and Method

Our study was a multidisciplinary effort (medical sociology, anthropology, psychology, psychiatry, public health) performed between 2009 – 2011, as part of the project named “Anthropological and psycho-medical aspects of the sexual-reproductive health of urban and rural populations” (Program IDEI, cod 72/2008, financially supported by CNCSIS-UEFISCSU) and one of its purposes was to assess the current situation of mental health and to identify population risk groups for developing

psychiatric disorders in a non-institutionalised population, an evaluation that could explain why abnormal and unexpected social behaviour and response may occur.

To reach this purpose, we used the Woodworth Mathews Inventory (WMI) with 76 items on a randomly selected sample of 1200 men and women, residents in urban and rural areas (City of Craiova and villages from Dolj County, Romania), to classify and identify relationships between WMI scores and socio-demographic characteristics.

Procedures for human subject protection were approved and monitored for compliance by the Ethical Commission of the University of Medicine and Pharmacy of Craiova. All subjects' informed consent was obtained before beginning the interviews.

The statistical analysis of results was performed using the SPSS software package (SPSS Inc.) and latent class cluster analysis (Latent Gold software Statistical Innovations Inc.). [6, 7] We used descriptive statistics with cross-tabulation, Pearson chi-square test to evaluate the association between categorical variables, and we considered these correlations statistically significant for values of p less than 0.05. To translate the results graphically, we used the Microsoft Excel sheet of the Microsoft Office 2007 package.

## Results

The data obtained following our research is based on a sample of 1200 subjects randomly selected from the databases of general practitioners from the urban area (City of Craiova with 310,000 inhabitants) and rural area (villages from Dolj county). In structuring our sample of population, we have taken into account the distribution according to gender and age, considering the following age groups (18-24, 25-34, 35-49, and >49 years old). The group studied was not designed as a representative sample for the case of Romania or Dolj County, and presented the following socio-demographic characteristics: 539 men and 661 women, 600 subjects for each residence area (urban and rural) and 186 men under 35 years and 353 over 35 years old, respectively 244 women under 35 years and 417 over 35 years old. (Fig.1)

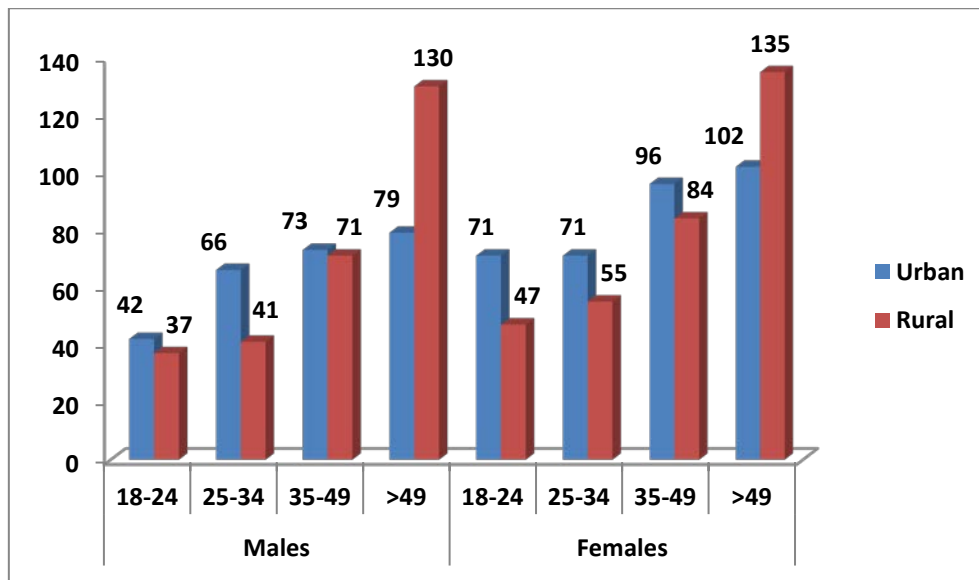


Fig.1.Socio-demographic characteristics of the studied sample

The results obtained following the application of WMI, in order to identify the psychopathological features and tendencies in the population studied that can lead to a psychiatric vulnerability, revealed us for some of the items analyzed a significant correlation from a statistically point of view between gender of subjects, their age as influential variables and intensity of these tendencies. Emotional instability is considered to be a personality trait

described by a lack of emotional control and maturity and a tendency towards unpredictable and changeable emotions or moods. Thus, in our studied sample, the limit and poignancy scores obtained for emotiveness had more than a triple frequency for women than for men, 37.50% versus 9.30% for limit scores, respectively 15.30% versus 1.10% for poignancy scores. (Fig.2) Pearson chi-square test showed a  $p < 0.001$ .

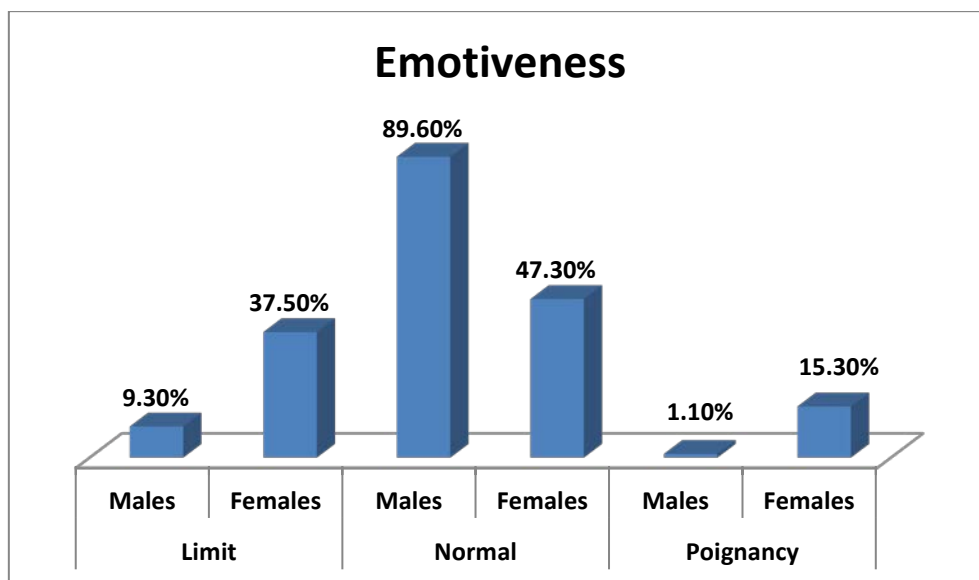


Fig.2.The scores for emotiveness in WMI for genders ( $p \leq 0.001$ )

The same situation was found also in the limit and poignancy for obsessive-neurasthenic tendencies, respectively for depressive tendencies. In the case of obsessive tendencies,

the WMI limit scores are two time more for women (36.8%) than for men (15.3%) and six times greater for the poignancy scores (12.7% versus 1.9%). (Fig.3)

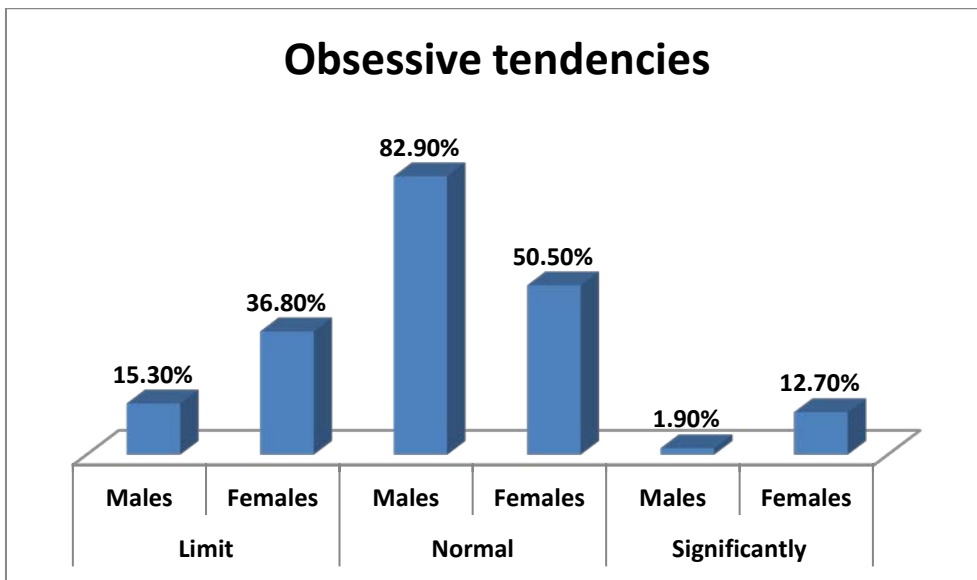


Fig.3.The scores for obsessive tendencies in WMI for genders ( $p \leq 0.001$ )

For depressive tendencies, we recorded a significant difference for the limit scores (50.2% for females and 29.7% for males) and a three times greater poignancy scores for these

tendencies (9.5% versus 3.0%). (Fig.4) After applying the Pearson chi-square test, we found a highly statistical significance ( $p < 0.001$ ) for these two psychopathological features.

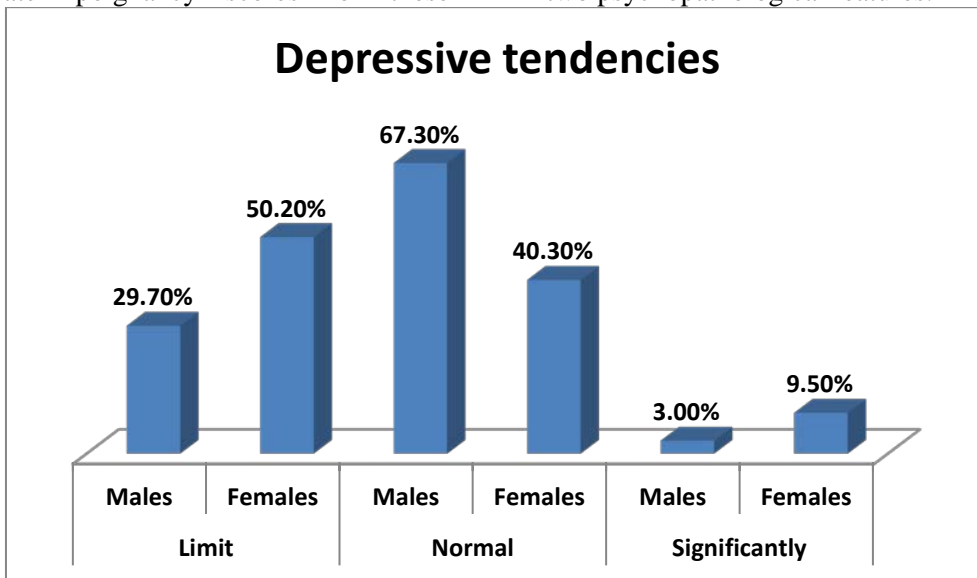


Fig.4.The scores for depressive tendencies in WMI for genders ( $p \leq 0.001$ )

Specialization literature data confirms the fact that the female gender is an important risk factor for developing disorders from the depression spectrum, combined with high emotion and obsessive personality traits compared to males. [8] And, if some studies showed that depressive disorders have a great occurrence for adolescence girls [9], with a clear distinction in favour of the female gender from midadolescence, this trend continues also after the middle age, where, to the biological, genetic and even endocrine risk factors, the psychosocial context is added. Our study

revealed the existence of highly statistically significant correlations ( $p < 0.001$ ) between extreme scores (limit and poignancy) for subjects from our sample, in the analysis of depressive tendencies from the point of view of age groups. For an easy understanding of the data recorded, we split the sample in two major groups regarding the age: less or equal to 35 years and over 35 years. Thus, we obtained for the subjects aging over 35 years limit scores at 42.1% and poignancy scores for 8.0%, almost double that for the people aging under 35 years (4.3%). (Fig.5)

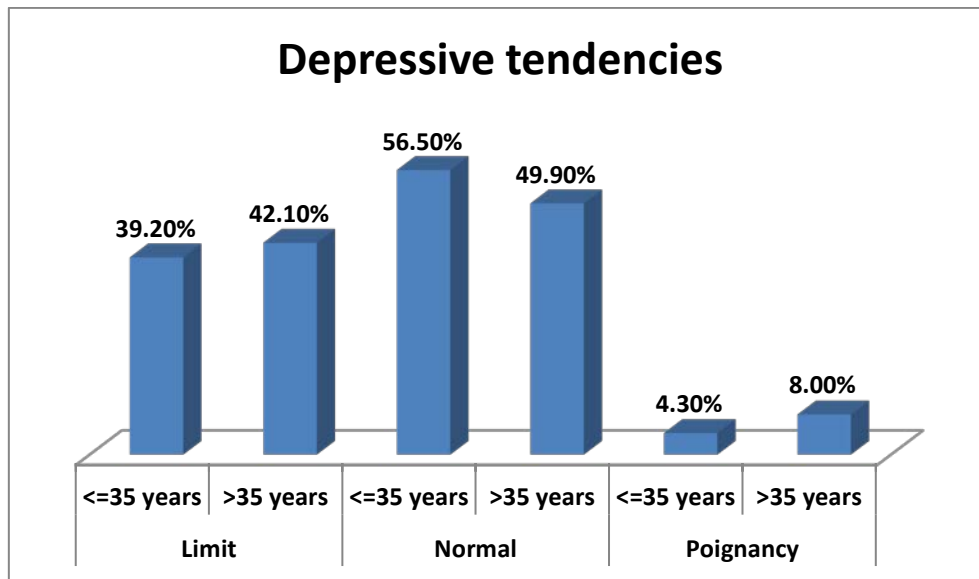


Fig.5. The scores for depressive tendencies in WMI according to age groups ( $p \leq 0.001$ )

Other important psychopathological features assessed through the Woodworth Mathews Inventory in our research was instability and antisocial tendencies, with a point of attention for the young subjects, knowing the facts that antisocial behaviour is the result of a number of different factors, and is assessed from a various points of view, from a mental disorder (conduct disorder, antisocial personality disorder, psychopathy) to a genetic vulnerability [10]. Existing data in the specialization literature revealed some significant differences between gender, this time in favour of men (10 males to 1 female), with only three exceptions where

antisocial behaviour and aggression is almost equal for both gender: age of puberty, substance abuse that determined aggression and domestic violence. [11] Our research did not reveal statistically significant differences between genders, but we obtained, after interpreting the results, a highly statistical significance ( $p < 0.001$ ) in correlating instability and antisocial tendencies with the age of the responders. Thus, for the people under 35 years, the frequency of limit and poignancy scores for these two psychopathological features is almost double than for people over 35 years. (Fig.6)

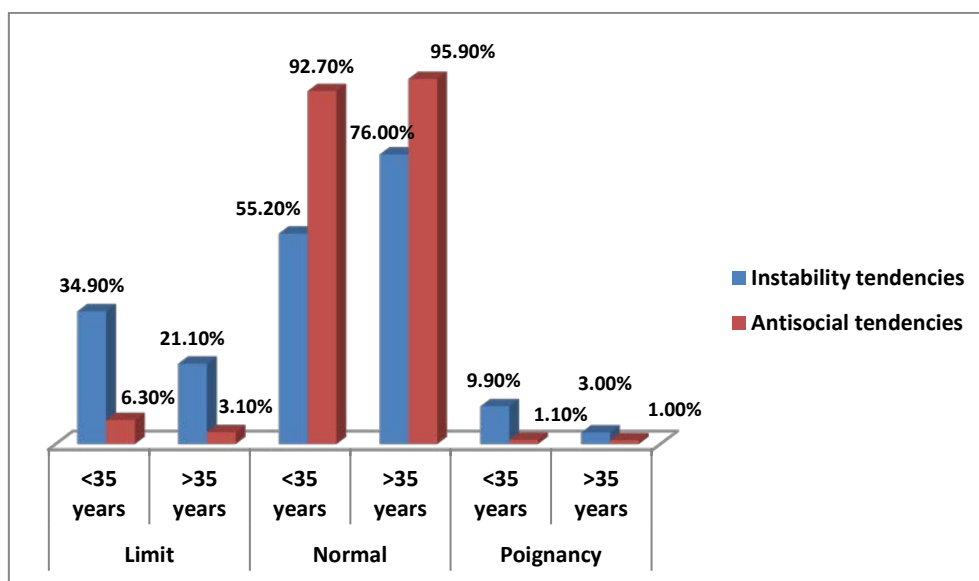


Fig.6. The scores for instability and antisocial tendencies in WMI according to age groups ( $p \leq 0.001$ )

In our study, we did not obtain a statistically significant correlation between the results for other items included in the Woodworth – Mathews Inventory, as paranoid, schizoid or impulsive-epileptic tendencies and age, sex or residence area of the of the subjects. Even if the data obtained does not fall within the parameters of normality, we can underline the important limit scores for all three psychopathological

**Table 1. Results for the Woodworth–Mathews Inventory and correlations with age**

Intensity of the feature / psychopathology feature	Limit		Normal		Poignancy	
	Males	Females	Males	Females	Males	Females
Paranoid tendencies	16.2%	24.3%	83.5%	75.5%	0.4%	0.2%
Schizoid tendencies	17.3%	25.1%	82.5%	74.3%	0.2%	0.6%
Impulsive-epileptic tendencies	12.6%	30.5%	86.8%	64.4%	0.6%	5.1%
	≤35 years	>35 years	≤35 years	>35 years	≤35 years	>35 years
Obsessive tendencies	24.6%	28.7%	71.5%	61.0%	3.9%	10.3%
Impulsive-epileptic tendencies	23.7%	21.7%	75.2%	73.9%	1.1%	4.3%

So, as mentioned in our study methods, we also used the latent class cluster analysis (LCA). This method is indicated as best to fit the 4 clusters model adjusted for interaction effects (BIC=10791.42, L2=846.18). The clusters were populated by 58.2%, 17.8%, 15.8% and 8.2% of the respondents, respectively. The first cluster is a “normal” cluster where prevail the normal scores for all 8 psychoneurotic items. The second cluster is characterized by high scores for emotiveness, obsession and depression. The fourth cluster is an “extreme risk” cluster where the high scores for emotive, obsession, depression and impulsivity prevail. This type of statistical analysis revealed the fact that we recorded in our sample population the limit and extreme scores for emotiveness, obsessive, and depressive disorder three times more frequent in women. Reporting our data to the age groups, we found that for the subjects aging over 35 years old, the frequency of the limit and extreme scores for depression is also three times greater, but instability and antisocial is twice lower ( $p<0.001$ ), which confirmed the previous results obtained.

## Discussions

Following our research, we were able to identify several categories of studied population that show a major risk for developing psychiatric disorders. We can mention firstly the female gender that presents a clear predisposition to develop depressive and emotional disorders. Regarding the age group, in

features, with a slight advantage for women. Regarding the obsessive and impulsive-epileptic tendencies, we can observe some major differences between poignancy scores of subjects aging more than 35 years compared to much younger respondents (10.3% versus 3.9% for obsession, respectively 4.3% versus 1.1% for impulsive-epileptic tendencies). (Table 1)

contrast with the data from the specialization literature, we found a significant correlation between extreme scores for depressive tendencies and age over 35 years.

Another risk category of population is represented by the younger people for instability and antisocial tendencies which may lead to pathological antisocial behaviour. The important differences founded in scores obtained at these two psychopathological features in favour of people under 35 years required attention in the actual psychosocial context, where we met an increasing rate of aggressive manifestations.

Developing the prophylactic program focused on the two risk categories mentioned above may be a solution to prevent the WHO prognosis for the next decades in the studied area.

## Acknowledgements

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## References

1. World Health Organization (WHO). The world health report 2001: Mental health: new understanding, new hope. Geneva, 2001
2. Bromet E et al. Cross-national epidemiology of DSM-IV major depressive episode, BMC Medicine 2011, July, 9:90.

3. Jablensky A, Sartorius N, Ernberg G, Anker M, Korten A, Cooper JE, Day R, Bertelsen A. Schizophrenia: Manifestations, incidence and course in different cultures: A World Health Organization ten-country study., Psychological Medicine Monograph Supplement 1992; 20:1-97
4. Warner R, de Girolamo G. Schizophrenia, Geneva, World Health Organization, 1995.
5. Hilsenroth MJ, Segal DL, Hersen M. (editors). Comprehensive Handbook of Psychological Assessment, Volume 2, Personality Assessment, John Wiley and Sons, New Jersey, 2004
6. Jaba E. Statistics, 3rd edition, Ed. Economică, Bucharest, 2007.
7. Hill Th, Lewichi P. Statistics: Methods and Applications, StatSoft, Inc. 2007, Tulsa, OK..
8. Weissman MM, Klerman GL. Gender and depression. Trends Neurosci. 1985; 8:416-420.
9. Angold A, Worthman C. Puberty onset of gender differences in rates of depression: a developmental, epidemiological, and neuroendocrine perspective. J Affect Disord. 1993;29:145-158.
10. Rhee SH, Waldman ID. Genetic and environmental influences on antisocial behavior: a meta-analysis of twin and adoption studies. Psychol. Bull. 2002, 128, 490-529
11. Moffitt TE, Caspi A, Rutter M, Silva PA. Sex Differences in Antisocial Behaviour: Conduct Disorder, Delinquency, and Violence in the Dunedin Longitudinal Study. Cambridge: Cambridge University Press, 2001.

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*Corresponding Author: Mihail C. Pîrlog, Medical Sociology Discipline, University of Medicine and Pharmacy of Craiova, 2-4 Petru Rares St, Craiova, Romania, e-mail: mihai.pirlog@gmail.com*