UNEMPLOYMENT AND DEPRESSION – SURVEY REGARDING THE PRESENCE AND LEVEL OF SEVERE DEPRESSION AMONG THE UNEMPLOYED VS EMPLOYEES

Angelo PELLEGRINI1, MD,
Elena BORDEA1, MD,
Daniela VÂLCEANU2, MD

1“Dr. Constantin Gorgos” Titan Psychiatric Hospital Bucharest;
2The National School of Public Health, Management and Professional Development, Bucharest

INTRODUCTION
Depression has been more frequent during the last years both in the psychiatric clinic and in the professional activity of any doctor, regardless of the specialty of the doctor. 12-36% of the patients with non-psychiatric disease have significant depressive symptoms and 4-8% of the cases that need the examination of a family doctor have a depressive disorder. [1] Among the negative effects on the quality of life, the family and the society, depression can be considered a major public health problem. Depression can be caused by the work conditions, but also by the lack of work. People who lose their jobs blame themselves for their own flaws and mistakes, they hide the fact they lost their job in front of their friends and all these factors lead to isolation, loneliness and depression.

THE OBJECTIVE of this survey is to identify and quantify the frequency of depression among the unemployed persons and the employees. The first part of the survey contains a descriptive statistical analysis of the examined categories. The second part of the survey is focused on the testing of the following hypothesis: 1) Depression is much more frequent in the unemployed as compared to the employees. 2) Depression is much more frequent for women than men both in the unemployed persons and the employees.

METHODOLOGY
The age, the gender and the marital status and the level of education have been used as independent variables, and depression has been used as dependent variable. The participants were men and women from the urban area (Bucharest), selected based on the inclusion and exclusion criteria, creating two types of samples: a category of unemployed persons and a category of employees. The selection of the participants: the unemployed persons were selected from the Labour Municipal Agency of Bucharest (AMOFM) and other sources and employees from different areas. The selection has been made based on free will using some criterias of inclusion and exclusion.

RESULTS: Depression is much more frequent among the unemployed persons as compared to the employees; for an employee the chances to have depression are 59.5% lower than for someone who is not employed. Depression is much more frequent and more intense for women than for men both for the unemployed persons and the employees; the chances to have depression are 92.5% bigger for a woman as compared to a man.

CONCLUSIONS: Taking into account the study results, we consider useful the identification and implementation of a strategy for the prevention and treatment of depression, especially addressed to the most vulnerable category of unemployed persons.

Key words: depression, unemployed, employees.

The unemployed persons category
Criteria of inclusion: unemployed persons from the urban area, men and women, age: 20-65 years, studies: no secondary education, secondary education and higher education; higher motivation to participate at the survey and at the intervention programme for the next surveys.
Criteria of exclusion: having a diagnosis of severe psychiatric disease previous the interview or during the selection interview, excepting the major depressive disorder, addicted to alcohol, drugs or other psychotropic substances; with severe somatic disease that can influence the mental state; that does not provide correct and complete information.

The category of the employees has been selected using the same inclusion and exclusion criteria as for the unemployed people. 355 unemployed people have been selected. After the application of the inclusion and exclusion criteria and of a random selection, a number of 200 unemployed persons, 100 men and 100 women, have participated at the survey. The employees have been selected from different state and private companies. 315 employees have been selected. After the appliance of the same selection criteria for the unemployed persons, 200 employees, 100 men and 100 women have participated at the survey. The participating persons was selected and divided in equal categories. A transversal research has been performed regarding the presence and the intensity of the depression by applying The Beck Depression Inventory during April-September 2012. The research tools were the psychiatric interview and the Beck Depression Inventory. The psychiatric interview used questions regarding demographic data, very important collateral antecedents, pathological personal antecedents and the actual mental state.
The Beck Depression Inventory (BDI II) is one of the most known psychological instruments. It is used in the scientific research that investigates clinical and sub clinical depression and also as a method of assessment of the efficiency of medication or psychotherapy in the treatment of depression. BDI II is a self-assessment instrument consisting of 21 items and it measures the severeness of depression both for the adults and youth aged over 13 years. [2]

BDI II represents the “gold standard” among self-administered assessment scales of depression severeness both for the patients diagnosed with this disorder and also for the identification of the presence of depression among the normal population. [3,4,5]. BDI II is not a diagnosis instrument itself, it is an indicator of the presence and severeness of the depressive symptoms according to DSM IV [6] and it includes symptoms of the last two weeks.

The administration time is 5-10 minutes [2]. Each item is marked on a Likert type scale with 4 gradations from 0 (the absence of the symptom) to 3 (maximum intensity), finally reaching a score between 0-63. If the evaluated person has circled 2 or more responses for the same item, the highest value is taken into consideration [2].

According to BDI II the evaluation of the scores is the following: 0-13 non-depressive; 14-19 mild depression; 20-28 moderate depression; 29-63 severe depression.

Like all the self-applied instruments, there can be distortions of responses, the participants may indicate more or less symptoms than in reality. The adaptation of the instrument in the Romanian language and the psychometric properties of the Romanian BDI II have been performed by University Prof. Dr. Daniel David, by Conf. Univ. Dr. Anca Dobrean from the Department of the Clinical Psychology and Psychotherapy, The Faculty of Psychology and Science Education, Babes-Bolyai University, Cluj-Napoca. The statistical analysis of the data has been made with the SPSS informatics system.

## Results and Discussions

The description of the samples according to the four variables: age, gender, marital status and education.

The age of the participants were between 20-59 years, the average being around 39 years, with a standard deviation of 9.748. In conclusion, the age of the patients is different from the average with +/-9.748 years (almost 10 years). The coefficient of variation, calculated as a rate between the standard deviation and the average is 25.45%, less than 35%, and that proves that the average is representative.

The age limit of the unemployed persons (57 years) is less than that of the employees (59 years). The average age of the unemployed persons (37.305) is less than that of the employees (39.28). The standard deviation regarding the age of the unemployed persons is a little bit higher, the variation coefficient being in a less degree and that indicates the fact that the series of the unemployed persons’ age have a higher homogeneity degree (table 1). Most of the people aged between 20-29 years are unemployed (59.3% from the 20-29 category). Regarding the other age categories, the percentage of the employees is higher (30-39 years – 52.8%, 40-49 years – 53.2%, 50-60 years – 51.7%) - table 2.

Men have a higher percentage in the age categories 20-29 years and 30-39 years, both for the unemployed persons (55.6%) and the employees (54.1%). For the rest of the age categories (40-49 years and 50-60 years), women have a bigger percentage compared to men, both for the unemployed persons and the employees (figure 1).

With regard to the marital status of the persons, the sample has been heterogeneous, including 4 categories of marital status: married, single, in a relationship and divorced/widowed. Almost half of the participants are married

<table>
<thead>
<tr>
<th>Age</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>400</td>
<td>20</td>
<td>59</td>
<td>38.29</td>
<td>9.748</td>
</tr>
<tr>
<td>Unemployed</td>
<td>200</td>
<td>20</td>
<td>57</td>
<td>37.30</td>
<td>9.855</td>
</tr>
<tr>
<td>Employees</td>
<td>200</td>
<td>20</td>
<td>59</td>
<td>39.28</td>
<td>9.561</td>
</tr>
</tbody>
</table>

### Table 1 - Statistical indicators

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
<th>status</th>
<th>status</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>Unemp</td>
<td>Employees</td>
<td>-</td>
</tr>
<tr>
<td>20-29 years</td>
<td>% within age</td>
<td>59.3%</td>
<td>47.2%</td>
<td>52.8%</td>
</tr>
<tr>
<td>30-39 years</td>
<td>% within age</td>
<td>27%</td>
<td>30%</td>
<td>33.5%</td>
</tr>
<tr>
<td>40-49 years</td>
<td>% within age</td>
<td>30.1%</td>
<td>29%</td>
<td>33%</td>
</tr>
<tr>
<td>50-60 years</td>
<td>% within age</td>
<td>14%</td>
<td>14%</td>
<td>15%</td>
</tr>
</tbody>
</table>

(50.5%), 23% single, 15.5% in a relationship and the fewest are the widowed and the divorced (11%) (table 3). Most of the married people (51.5%) are employed. Among the widowed and divorced, we find more employees (56.8%) than unemployed persons (43.2%). Most of the single persons are unemployed (55.4%). The same situation occurs also with people who are in a relationship (51.6%) (tab 3).

Most of the married people are women both for the unemployed persons and the employees (51% and 54.8%). There are more women included in the „relationship“ category. There are more men in the „unmarried“ category (56.9% for the unemployed persons and 65.9% for the employees). There are also more men in the category „divorced/widowed“ for both groups (52.6% - unemployed and 52% - employees). The percentage of the unemployed women (59.4%) and the employed ones who are in a relationship is higher than the percentage of men who are in a relationship. The distribution of the participants according to the level of education has been normal as it is shown in table no 4. Most of the participants (41%) have a secondary education and the smallest percentage is of those with higher education (26.3%). 57.3% of the people with secondary education are unemployed and 42.7% are employees. The employees have higher percentages of persons with secondary education and higher education (50.6% and 58.1%). Most of the unemployed people without secondary education are women (50.7%). Half of the employees without secondary education are men and the other half are women. Regarding the people with secondary education, both for the unemployed persons and the employees, the percentage of men is higher compared to that of women.

#### Table 2 - The distribution by age

#### Table 3 - The marital status of the persons

#### Table 4 - The level of education
As far as the higher education is concerned, most of the people are women (54.5% unemployed and 50.8% employees) in case the same comparison is being made with the unemployed men and the employees with higher education (figure 2).

The level of depression of the unemployed persons and the employees according to the four variables: gender, age, marital status, education.

If we take into account the whole group (employees and unemployed persons) the biggest percentage is of persons without depression (89.5%) followed by those with moderate depression (5.75%), severe depression (2.75%) and mild depression (2%).

There are more men included in the category without depression (51.7%) and there are more women included in the categories: mild depression (75%), moderate depression (56.5%) and severe depression (72.7%).

Mild depression is often met at 75% of the unemployed persons and 75% of the women who are not employees. Half of the unemployed persons are women with moderate depression and the other half are men. Most of the employees are women with moderate depression (71.4%).

The severe depression is often met at the unemployed women (77.8%) as compared to the unemployed men (22.2%), and regarding the employees, the percentage of women is equal with that of men (table 5).

No 20-29 years unemployed shows signs of depression.

All the unemployed people from 30-39 years are women with mild and severe depression. In the moderate depression category between 30-39 years, the men are mostly unemployed persons (66.7%). In the unemployed persons category between 40-49 years, severe depression is found only in women and moderate depression is found in 50% of women and 50% of men. In the category of age 50-60 years, the percentage of the unemployed women with mild depression (66.7%) and moderate depression (60%) is higher than that of the unemployed men. 66.7% from the unemployed persons between 50-60 years are men with severe depression and 33.3% are women. All the employees between 20-29 years and 30-39 years are women with mild depression and severe depression. There are no employees with severe depression in this age categories. All the employees between 40-49 years are men with mild depression. 66.7% of the employees between 40-49 years are women with moderate depression. The employees between 50-60 years with moderate and severe depression are distributed equally based on gender. All the unemployed married persons are women with mild depression. The percentage of married women with moderate depression is higher than of men, having a percentage of 55.6%. 75% of the married unemployed people are women with severe depression. Half of the single unemployed persons are men with moderate depression and half of them are women. 66.7% of the single unemployed persons are women with mild depression and severe depression.
All the unemployed persons with severe depression and 66.7% of those with moderate depression that are in a relationship are women. All the married employees with mild and severe depression are women. There are only women in the category of unmarried persons with moderate depression. The persons with mild depression who are in a relationship, are half men and half women. All the employees who are in a relationship and have moderate depression are women. No person, who is unmarried or is in a relationship, shows signs of severe depression. All the divorced and widowed employees with moderate depression are men. Regarding the category of the unemployed persons without secondary education, there are only women with mild depression. 87.5% of the unemployed persons without secondary education and severe depression are women. The employees with secondary education, with mild and moderate depression are equally distributed among both men and women and those with severe depression are only men.

The unemployed persons with higher education and mild depression are only women. Moderate depression is found in 66.7% of women and 33.3% of men. There are no signs of severe depression for this category of studies. There are only women in the category of the employees without secondary education and severe depression. The distribution of moderate depression is the same for men and women. All the employees with secondary education who have mild and moderate depression are women, while for this category severe depression is found only in men. Moderate depression affects only the women of the sample with higher education. 66.7% of the employees with higher education and mild depression are women. The following hypothesis is being analysed in order to compare the frequency of depression among the unemployed persons and the employees: Depression is more frequent in unemployed persons than in employees; Depression is more frequent for women, both for the unemployed and the employees.

**Hypothesis 1: Depression is more frequent in unemployed persons than in employees**

H0 (null hypothesis): depression is not more frequent in unemployed people as compared to employees. H1 (the alternative hypothesis): depression is more frequent in unemployed people compared to employees.

Cum Sig. (the empirical level of significance) associated to the chi-square test is smaller than 0.05, the null hypothesis is being rejected (table 6). In conclusion, the cases of depression are more frequent from the statistical point of view among the unemployed persons.

A binary logistic regression has been made in order to determine how much the chances of depression decrease in the employees as compared to the unemployed persons. A new binary variable has been defined. It is called „depression” and it has the value 1 if the person does not have depression and the value 2 if the person has depression (mild, moderate and severe depression). The pattern of the logistic regression is valid, Sig. associated to the variable „social status” (binary variable with the alternatives unemployed and employee) being 0.01, being smaller than 0.05 (table 7). For a level of significance of 0.05 (5%), the chances to have depression decrease for an employee with 59.5% as compared to an unemployed person. In conclusion, the unemployed persons are much more vulnerable to depression as compared to employees.
Hypothesis 2: Depression is more frequent for women, both in unemployed and in employees. 

According the chi-square tests, applied for both categories, the asymptotical level of significance is 0 (smaller than the level of significance 0.05). This result implies the fact there are differences between men and women regarding the incidence of depression. Depression is more frequent for women. (table 8).

A binary logistic regression has been created in order to determine how much the chances of depression increase for women as compared to men. A new binary variable (alternative) has been defined, called „depression” which has the value 1 if the person does not have depression and the value 2 if the person has depression of different forms (mild, moderate and severe depression). The pattern of logistic regression is valid, Sig. associated the variable „gender”, being smaller than 0.05.

For a level of significance of 0.05 (5%), the chances to have depression increase with 92.5% for a woman, as compared to a man (table 9).

For a level of significance of 0.05, the chances for an unemployed woman to have depression increases with 102.5% as compared to a man (table 10), and for a woman who is an employee increases with 72.5% as compared to a man who is an employee (table 11).

Table 9. Logistic regression: incidence of depression by gender

<table>
<thead>
<tr>
<th>Step 1</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>gender</td>
<td>.655</td>
<td>.339</td>
<td>3,733</td>
<td>1</td>
<td>.043</td>
<td>1,925</td>
</tr>
<tr>
<td>Constant</td>
<td>-.3,167</td>
<td>.575</td>
<td>30,295</td>
<td>1</td>
<td>.000</td>
<td>.042</td>
</tr>
</tbody>
</table>

Table 10. Logistic regression: incidence of depression in employees by gender

<table>
<thead>
<tr>
<th>Step 1</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>gender</td>
<td>.555</td>
<td>.569</td>
<td>4,883</td>
<td>1</td>
<td>.033</td>
<td>2,025</td>
</tr>
<tr>
<td>Constant</td>
<td>-.2,687</td>
<td>.645</td>
<td>28,576</td>
<td>1</td>
<td>.000</td>
<td>.062</td>
</tr>
</tbody>
</table>

C ONCLUSIONS
1. Depression is more frequent in unemployed persons as compared to employees.
2. The chances to have depression for an employee decreases with 59.5% as compared to an unemployed person.
3. Depression is more frequent and more intense for women than for men, both in unemployed persons and in employees.
4. The chances to have depression increase with 92.5% for a woman as compared to a man.

The chances to have depression for an unemployed woman increase with 102.5% as compared to a man while the chances to have depression for a woman who is an employee increase only with 72.5% as compared to a man who is an employee. Taking into account the previous conclusions, we consider useful the identification and implementation of strategies for the prevention and treatment of depression, especially for the unemployed persons, this being a vulnerable population category.

References