

DISTRIBUTION OF DEPRESSION AMONG DIFFERENT GROUPS AND SUB-GROUPS OF WOMEN DURING THE COVID PANDEMIC AN ANALYSIS FROM AN INTERDISCIPLINARY PERSPECTIVE

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Abstract: *Objective.* In this article, we analyze depression in the female population using interference and descriptive statistics applied to multiple groups and subgroups to better understand depression in the population (pregnant, not pregnant, and newly mothers-6 to 8 weeks) and also analyzing the perspective of suicide during the COVID-19 pandemic. Thus, depending on the analyzed perspective, we have from 2 to 6 study groups.

Methods. The analysis was done by applying the Edinburgh Postnatal Depression Scale (EPDS) questionnaire in groups of pregnant women during pregnancy and new mothers (six to eight weeks after birth) and Beck Depression Inventory BDI in all the groups.

Results. According to forecasts, all hypothesis were validated. *Conclusions:* An immediate priority of the scientific community should be collecting high-quality data on the mental health effects of the COVID-19 pandemic across the whole population and especially vulnerable groups such as that of pregnant women who were presented in this study.

Keywords: Pregnant, COVID-19, depressive disorder, Beck, Edinburgh, interdisciplinary.

INTRODUCTION

Mental illness is common and, despite the expansion of services and treatment provision, the burden in terms of impaired health and functioning continues to increase worldwide. In the case of perinatal mental illness, it is common and can affect up to 20% of women [1]. Despite this, it remains underdiagnosed. Women with mental ill-health face difficult decisions in balancing the risks and benefits of treatment due to the social stigma related to mental disorders.

It is already evident that the coronavirus pandemic (COVID-19) affected, directly and indirectly, the whole world in many aspects. The psychological

and social issues that were planted at the onset of this pandemic could affect mental health now and, in the future [2,3].

The pandemic is already occurring against the backdrop of the increased prevalence of mental health issues in the world if we consider various studies regarding depression [4]. The target group is the population of pregnant women considered by the authors a population at risk considering this difficult period from a medical, economic and mental health point of view.

As a novelty, this research analyzes pregnant, non-pregnant, and newly mothers with and without suicide attempts during the COVID-19 pandemic.

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We initiated this study in the hopes of offering a new perspective on the dynamics of Depression in the pregnant women population.

Taking into consideration the research group's background we considered that a structured explication from each perspective could offer some inside into the mechanisms and dynamics implicated in the incidence of depression and its relation to COVID-19 [5,6]. The team's backgrounds spreads across fields of study such as: medicine, psychology (clinical psychology and psychology applied to the field of national security), marketing (countermeasures regarding fake news, and propaganda). We chose to address depression because of their and associated problems [7-14].

MATERIALS AND METHODS

Instruments – Questionnaires

The questionnaires chosen by the research team are: BECK's (depression assessment) and Edinburgh Postnatal Depression Scale (EPDS). We chose these tools because they are scientifically validated and have numerous scientific articles and literature that supports their validity and fidelity.

Participants

The study lot is one of convenience (convenience sampling, opportunity sampling). A number of 650 questionnaires were sent to the various categories and subcategories of these groups. After centralizing the questionnaires, a number of 195 answered. After analyzing the total number of responses and dividing them into groups and subgroups, the research group and statistician decided that for a good application of parametric techniques between groups and subgroups and nonparametric within the main groups to reduce the number of participants to 150 as follows: 50 pregnant mothers with children > 1 year (35 without suicide attempt and 15 with suicide attempt) 50 pregnant women in different trimesters (35 without suicide attempt and 15 with suicide attempt) and 50 new mothers 6-8 weeks (35 without suicide attempt and 15 with suicide attempt). The group that dictated this aspect was the one with suicide attempts during pregnancy (the other suicide groups were 17 after pregnancy and 16 in the group of non-pregnant mothers and with children > 1 year).

Procedure

All participants received the Beck - BDI Depression Inventory and pregnant participants and

newborn mothers also received the Edinburgh Postnatal Depression Scale (EPDS) questionnaire according to the application specifications of this questionnaire 6-8 weeks for the application of the questionnaire

Hypothesis

1. It is assumed that there is a strong correlation between suicide and high scores in the Beck questionnaire.

2. It is assumed that there is a correlation between the level of depression (measured by the Beck questionnaire) and the number of births of the participants.

3. It is assumed that there is a correlation between depression (measured by the Beck questionnaire) and the existing trimester of pregnancy with higher susceptibility (correlation) for depression.

4. The Edinburgh Postnatal Depression Scale (EPDS) is thought to correlate with suicide (even if the score indicates the presence of depression and not its grade a high score will correlate with attempted suicide).

5. The Edinburgh Postnatal Depression Scale (EPDS) is assumed to correlate with the number of births (high number of births associated with lower scores).

The datasets are available on request due to restrictions because these data constitute a foundation in the elaboration of the doctoral research of the first author. There are also privacy or ethical restrictions on personal data of the participants. Thus, data that can be transmitted upon request will not contain elements for identifying the participants in accordance with the elements related to GDPR legislation in the form in force at the time of writing this research.

RESULTS

The general average of the 150 participants was 29 years old. Around age 29, the highest number of participants was observed, which was 23. Gaussian curve did not indicate any significant inclination (Fig. 1).

As it could be observed, the 150 participants were distributed equally (50 each) in the 3 groups: non-pregnant, pregnant, birth. Most participants had no suicide attempts, respectively 105. A number of 45 participants had a suicide attempt.

The average mother who gave birth more than a year was 30 years old. The highest frequency was 10 mothers at age 29. The inclination of the Gaussian

curve to the left indicated that there was a tendency for mothers to give birth at younger ages.

The distribution of pregnancies indicated an average age of 28 years. The highest frequency was 10 mothers at age 29. The inclination of the Gaussian curve to the left indicated that there was a tendency for mothers to become pregnant at younger ages.

Of the total of 150 women, 100 were not pregnant at that time, 23 were in trimester 1, 21 were in trimester 2 and 6 in trimester 3.

The average age of pregnant women in the last 6-8 weeks was 28 years. The highest frequency was 12 pregnant women at the age of 29. No significant inclination of the Gaussian curve was observed.

According to descriptive data, an average age of 29.39 was found. The youngest participant was 18 years old and the oldest 40 years old (general age).

According to descriptive data, an average age of 31.37 was found. The youngest participant was 24 years old and the oldest 40 years old (participants who gave birth >1 year with no suicide attempt).

According to descriptive data, an average age of 29.53 was found. The youngest participant was 21 years old and the oldest 38 years old (participants who gave birth >1 year with suicide attempt).

According to descriptive data, an average age of 28.74 was found. The youngest participant was 24 years old and the oldest 36 years old (age of participants that are pregnant with no suicide attempt).

According to descriptive data, an average age of 28.26 was found. The youngest participant was 23 years old and the oldest 36 years old (age of participants that are pregnant with suicide attempt).

According to descriptive data, an average age of 29.2 was found. The youngest participant was 24 years old and the oldest 38 years old (age of participants who gave birth </=6-8 weeks with no suicide attempt).

According to descriptive data, an average age of 27.73 was found. The youngest participant was 18 years old and the oldest 40 years old (age of participants who gave birth </=6-8 weeks with suicide attempt).

The overall results of the Beck questionnaire

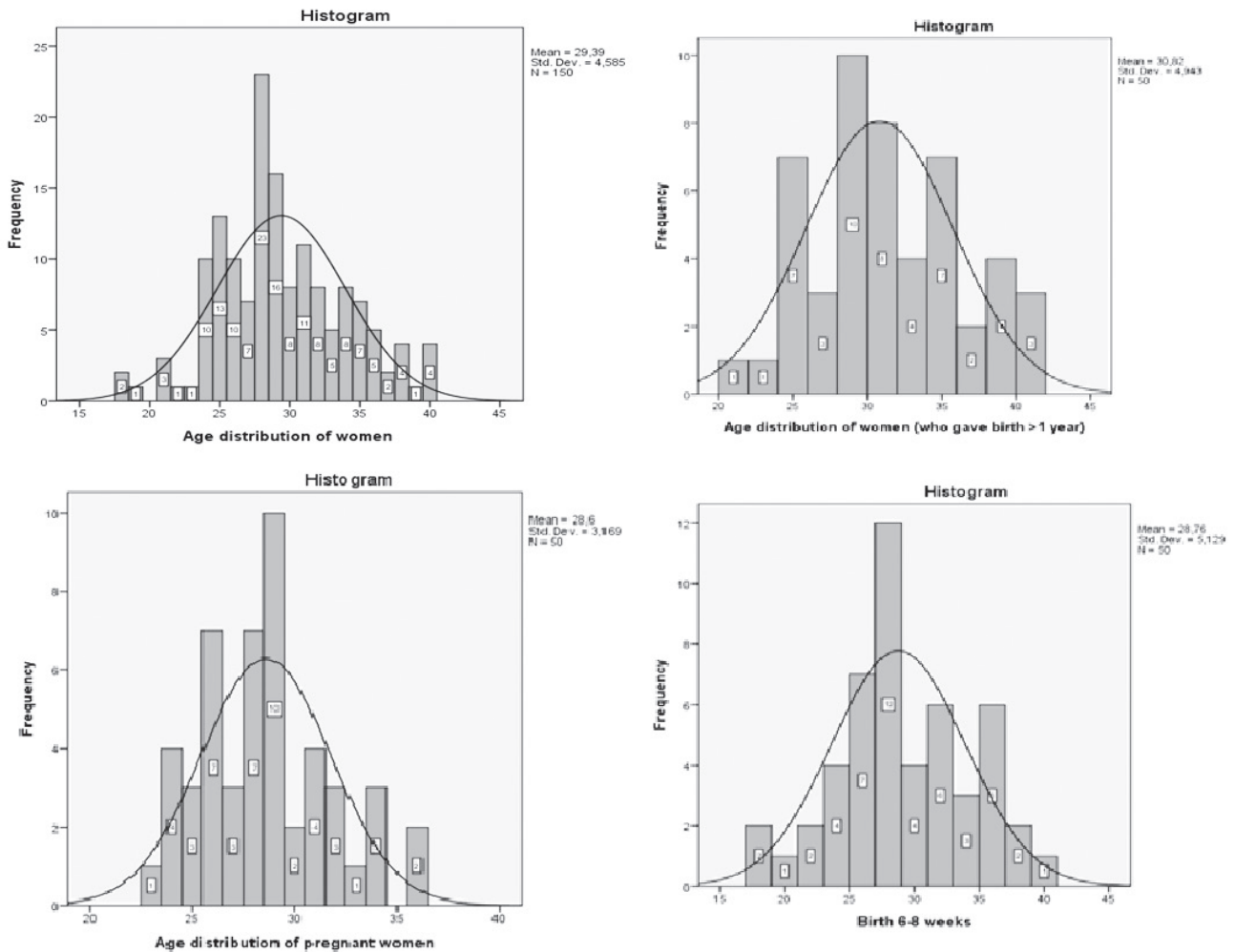


Figure 1. Descriptive analysis .

indicated an average of 26.22. This average denotes severe depression (the minimum score was 8 and the maximum was 57).

The Beck score for participants who gave birth >1 year with no suicide attempt indicated an average of 15.97. This average denotes moderate depression (the minimum score was 10 and the maximum was 25).

The Beck score for participants who gave birth >1 year with suicide attempt indicated an average of 41.06. This average denotes severe depression (the minimum score was 28 and the maximum was 51).

The Beck score for participants they are pregnant with no suicide attempt indicated an average of 24.74. This average denotes severe depression (the minimum score was 13 and the maximum was 38).

The Beck score for participants they are pregnant with suicide attempt indicated an average of 40.2. This average denotes severe depression (the minimum score was 22 and the maximum was 52).

The Beck score for participants who gave birth <=6-8 weeks with no suicide attempt indicated an average of 16.34. This average denotes moderate depression (the minimum score was 8 and the maximum was 26).

The Beck score for participants who gave birth <=6-8 weeks with suicide attempt indicated an average of 47.8. This average denotes severe depression (the minimum score was 26 and the maximum was 57).

Beck questionnaire Scores 0 - 9 = normal; 10 - 15 = mild; 16 - 23 = moderate; 24 - 63 = severe depression.

Table 1. Mann-Whitney U test for suicidal depression

Beck depression	
Mann-Whitney U	57,000
Wilcoxon W	5622,000
Z	-9,463
Asymp. Sig. (2-tailed)	0,000

a. Grouping Variable: Suicid.

Table 2. Kruskal-Wallis test for depression by number of births

Beck depression	
Chi-Square	35,696
df	3
Asymp. Sig.	0,000

a. Kruskal Wallis Test. b. Grouping Variable: Nasteri.

Table 3. Kruskal-Wallis test for depression by trimester

Beck depression	
Chi-Square	16,425
df	3
Asymp. Sig.	0,001

a. Kruskal Wallis Test. b. Grouping Variable: Trimestru.

The purpose of the Edinburgh Questionnaire is to indicate whether or not a person has depression, because the degree of depression is not classified.

The average non-pregnant depression (Beck) was 23.50 (moderate depression), that of pregnant women was 29.38 (severe depression), and that of those who gave birth was 25.78 (severe depression).

Since the value of significance was over 0.066 (over 0.005), then it was found that the differences are not significant.

The mean depression of people with suicide was 43.02 (severe depression), and that of people without suicide was 19.02 (moderate depression).

The value of significance was 0.001, which indicates that the differences between the two groups on suicide were significant (people with suicide had a higher average) (Table 1).

People who did not give birth had an average of 16.34 (moderate depression), those with one birth had an average of 31.78 (severe depression), those with two births had an average of 26.19 (severe depression), and those with three births they had an average of 33.69 (severe depression).

The registered significance was 0.001, which indicated significant differences in terms of the number of births (people with 3 births had the highest average). People who did not fit in any quarter had an average of 24.64 (severe depression), those in the first quarter had an average of 30.57 (severe depression), those in the second quarter had an average of 28.76 (severe), and those in the 3rd trimester had an average of 27.17 (severe depression) (Table 2).

The recorded significance was 0.001, which indicated significant differences in terms of quarters (people in the 1st quarter had the highest average). Pregnant women had an average of 17.50, and those who gave birth had an average of 17.92 In the case presented, the values of the confidence interval went through 0 (Lower -2,396; Upper 1,556), which indicated that the differences on depression depending on the stage are insignificant. People without suicide attempt had an average of 15.20, and those with attempted suicide 23.57 (Table 3).

The significance of 0.001 of the Mann-Whitney U test indicated significant differences in depression according to suicide (people with suicide attempts had a higher average). People without any birth had an average of 15.46, those with one birth 20.86, those with two births 16.97, those with three births 20.73 (Table 4).

The significance of 0.001 indicated significant differences in depression depending on the number of

births (people with one birth had the highest average). The participants without trimester had an average of 17.92, those from trimester 1 had an average of 17.87, those from trimester 2 had an average of 17.24, and those from trimester 3 had an average of 17. Given that the significance was 0.832 (greater than 0.005), then it was concluded that the differences in depression of the quarters are not significant (Table 5).

DISCUSSION

We would like to start the analysis (medical perspective) by indicating the average scores for the studied groups. We want to draw attention to groups without suicide attempts. In our personal clinical practices, we had often noticed a greater resilience in terms of stress, bad news management, and acceptance of treatment from mothers who already had at least one child of kindergarten age than in the case of pregnant women. This seems normal because there are a number of morphological and physiological changes that the body undergoes to facilitate pregnancy and childbirth. Thus, the results that frame the average scores for depression (Beck) for people who have already given birth 15.97 compared to 24.74 pregnant women do not surprise and come as a confirmation of our empirical observations in the clinic. An interesting aspect is the speed with which the body self-regulates. Newly mothers have an average of 16.34, although the period from birth is short. During our residency programs, we were often told about the principle of homeostasis which tends to balance either in the case of pathology or outside the pathology from the perspective of psychology. In this case, we can only admire areas of study like neurosciences that studied how the brain works, and how the nervous system interacts with other parts of the body, and often remember inter-connected

elements like how psychiatric disorders not only contribute to pain intensity but also to increased risk of disability [15-19] as a possible argument in addition to the increased value of the average Beck score for this category as having a higher risk from a psychological perspective.

From the psychology perspective (clinical psychology and psychology applied to the field of national security) we must say that there are many theoretical directions under the dome of psychology [20-21], from the best known to exotic ones. Some are similar to medical perspectives and others are more exotic and focused on spirituality [22]. And we also have specific forms that have been included in certain areas like applied psychology in the field of national security [23]. In this case, the analysis will be made from the perspectives indicated in the previous title. General results are not surprising. We have depression, we have antepartum depression with postpartum onset and many colleagues also consider depression during pregnancy as a common form [24]. Pregnant women should be considered at risk because they have a greater susceptibility to depression in these times of uncertainty.

From a profiler's perspective women are protective. We do not have to quote anthropology to know that women will protect their children all the more as they still carry them in their wombs and have difficulties due to their physiological status. We do not wish to analyze the direct mechanisms involved in the COVID-19 pandemic but from an information circulation aspect.

We would like to suggest the possibility of disinformation based on certain population dynamics [25-27]. The mediatic campaign was, not optimal. One could argue that it acted as a catalyst that guided the population towards uncertainty [27, 28], a decreased level of trust in the government and the medical professionals, that generated a polarization on the existence vs. nonexistence of COVID-19.

The discussions and opinions of the research group may vary. Our unique backgrounds may act as a possible bias as we tend to filter information from different perspectives. This being said a joint opinion regarding the effects of the pandemic can be made. The overall effects are devastating on multiple levels of society.

Managing the effects of the pandemic has put enormous stress on all implicated. The principles of information and disinformation remain the same as do the ones of planting ideas and guided social cohesion

Table 4. Mann-Whitney U suicide depression test

	Edinburgh
Mann-Whitney U	28,500
Wilcoxon W	2513,500
Z	-7,703
Asymp. Sig. (2-tailed)	0,000

a. Grouping Variable: Suicid.

Table 5. Kruskal-Wallis test of depression by number of births

	Edinburgh
Chi-Square	19,415
df	3
Asymp. Sig.	0,000

a. Kruskal Wallis Test. b. Grouping Variable: Nasteri

[25-29]. Based on the scale of dis pandemic no one could blame the lack of preparation or cooperation on a global level. There are still many unknowns from a medical and psychological perspective. We must continue in our research and enrich our scientific knowledge so that we can make informed (to the best extent) decisions [30-31].

In conclusion, the psychological effects of the Covid-19 pandemic are very significant, especially in at risk populations. COVID-19 induces very high levels of depression in pregnant women, especially in some trimesters. Having children already seem to have a protective role against depression. Hypothesis 1 was tested and confirmed by the nonparametric Mann-Whitney U test because its sig value was 0.001, and the mean table indicated higher values in the suicide attempt group. Hypothesis 2 was tested and confirmed by the non-parametric Kruskal-Wallis test, because its sig value was 0.001, and the average table indicated the highest value in the group with 3 births. Hypothesis 3 was tested and confirmed by the non-parametric Kruskal-Wallis test because its sig value was 0.001, and the average table indicated the highest value in quarter 1. Hypothesis 4 was tested confirmed by the non-parametric Mann-Whitney U test because its sig value was 0.001, and the mean table indicated higher values in the group attempting suicide. Hypothesis 5 was tested and confirmed by the non-parametric Kruskal-Wallis test because its sig value was 0.001, and the mean table indicated the highest value in the one-birth group.

Conflict of interest

The authors declare that they have no conflict of interest.

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Institutional Review Board Statement

This study was approved by the ethics commission from the doctoral school (institutional review board equivalent) of "Ovidius" University of Constanta.

Informed Consent Statement

Written informed consent was obtained from all subjects prior to participating in the current study.

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