



ORIGINAL ARTICLE

Bipolar Disorder Screening in Pregnant Women

Demet Saglam Aykut¹, Filiz Civil Arslan¹, Mihriban Yildirim¹, Suleyman Guven², Ahmet Tiryaki³

¹School of Medicine, Department of Psychiatry, Karadeniz Technical University, Trabzon, Turkey

²School of Medicine, Department of Gynecology and Obstetrics, Karadeniz Technical University, Trabzon, Turkey

³School of Medicine, Department of Psychiatry, Aydin University, Istanbul, Turkey

Objective: Characteristically, the onset of bipolar disorder is the early adulthood and the first episode affects women of childbearing age. The studies indicate that 60–70 % of women with bipolar disorder experience mood symptoms during the periods of pregnancy and/or postpartum. The aim of the present study is to determine the prevalence of bipolar disorder in pregnancy and the risk of bipolar disorder among pregnant women who had positive screening for prenatal depression.

Methods: The study involved 347 literate pregnant women between the ages of 18–50. All patients were screened with self-report scales of Edinburgh Postnatal Depression Scale (EPDS) and Mood Disorders Questionnaire (MDQ). MDQ score of 7 or above in addition to a clinical interview with SCID-I.

Results: Three hundred forty-seven pregnant women participating in the study, completed both scales. Of the participants, 52 (16.5%) EPDS scale was found to be positive indicator while 27 (8.5%) MDQ scale was positive indicator. Diagnosis of bipolar disorder was considered in 3 (11.1%) out of 27 individuals who had MDQ score of 7 or above by a clinical interview with SCID-I. The results also indicated that the probability of positive EPDS screening is significantly higher than negative screening in participants with positive MDQ screen ($p=0.001$).

Discussion: As a result of the study, 8.5% of patients who were referred to the obstetrics and gynecology outpatient clinic in the perinatal period was found to have higher risk for bipolar disorder. Diagnosis of bipolar disorder was considered in 11.1% of patients of high risk group. EPDS was negative in 16 (5.1%) of 27 patients who were screened with MDQ.

Keywords: Bipolar disorder, pregnancy, prenatal period

INTRODUCTION

Bipolar disorder (BD) is a common yet serious psychiatric disorder with a global lifetime prevalence of 2.4 % (1, 2, 3). Bipolar disorders are a spectrum of disorders involving episodes of depression and mania or hypomania (4, 5). Onset is typically in early adulthood. Bipolar symptoms can be exacerbated during pregnancy and postpartum (6).

Fewer than half of pregnant women with a mental health illness are identified in clinical settings. Among

women who are identified, only 15% receive mental health care, fewer than 10% receive adequate treatment, and less than 5% achieve remission from their disorder (7). Studies have shown that 60-70% of women with BD experience mood attacks during pregnancy and/or the postpartum period (8). While there remains much uncertainty about the risk of mood episodes during pregnancy in the literature (1), there are some studies showing that pregnancy poses a risk for bipolar disorder (9, 10), especially when the pregnancy period worsens and the risk of recurrence increases (11, 12).

Screening for signs of depression during pregnancy can help establishing the diagnosis of depression in this period. However, in a recent study, it was stated that depressive symptoms detected during pregnancy may also indicate underlying bipolar disorder susceptibility

Corresponding author: Demet Saglam Aykut, MD
Department of Psychiatry, Karadeniz Technical University School of Medicine, Kalkinma Mah. 61080 Trabzon, Turkey
E-mail: demetsaglam@hotmail.com
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(13). Thus the percentage of women screened positive for prenatal depression that have BD rather than unipolar depression is not known.

It is important to recognize mental health disorders during pregnancy for they can have negative impact on maternal, fetal, and newborn health and child's development. Adequate treatment of maternal mental health disorders is a public health priority due to its significant impact on both short- and long-term women's health and child development (7). A study from Sweden reported an increased risk of being small for gestational age and neonatal hypoglycemia in infants born to women with bipolar disorder (4, 14).

The purpose of this study is to determine the prevalence of BD in pregnant women and the potential risk of BD in pregnant women screened positive for depressive disorder.

METHODS

Sampling

Four hundred twenty-one pregnant women that were randomly selected from 2982 pregnancies admitted to Karadeniz Technical University School of Medicine's Obstetrics and Gynecology outpatient clinic between January and June 2016 according to the referral day (Tuesdays or Thursdays) were included in the study regardless of the pregnancy period. The study group comprised of 421 pregnant women aged between 18-50 years without any previous psychiatric diagnosis and treatment, and with no family history of psychiatric disorders. Seventy-four pregnant women were excluded because of inability to cooperate for the tests and to comprehend the scales, loss of hearing or vision, and refusal to participate in the study. The remaining 347 pregnant women were included in the study.

Assessment Tools

Sociodemographic Data Form: This was designed by the authors to assess sociodemographic data (such as age, gender, marital status, and employment status) of the participants.

Structured Clinical Interview (SCID-1) for DSM-IV Axis 1 Disorders: The SCID-I was developed by First et al. in 1997 for the purpose of revealing DSM-IV-TR Axis I diagnoses using a structured clinical evaluation tool (15). The reliability and validity of the Turkish version were conducted by Corapcioglu et al. in 1999 (16).

Mood Disorder Questionnaire (MDQ): MDQ is a self-report instrument developed by Hirschfeld et al (17) in 2000 to screen lifetime history of manic and/or hypomanic symptoms. MDQ includes 13 Yes/No questions mainly derived from DSM-IV in the first sub-item, and the second sub-item asks whether several of any reported manic or hypomanic symptoms or behaviors were experienced during the same period of time or associated with functional impairment related. The total score is the sum of overall scores for each item marked as yes (1 point) or no (0 point). The Turkish version of the MDQ has been validated by Konuk et al. (18) in 2007. Sensitivity of 81% and specificity of 53% were determined at a cut-off score of 5, sensitivity of 75% and specificity of 63% at a cut-off score of 6, and sensitivity of 64% and specificity of 77% at a cut-off score of 7.

Edinburgh Postnatal Depression Scale (EPDS): Developed by Cox et al., this scale is used to determine the risk of depression in the postpartum period and to measure the level and severity of change. The EPDS is a self-report, 4-point Likert-type scale consisting of 10 items. Responses consisting of four options are scored between 0 and 3. The lowest possible score is 0 and the highest possible score is 30. At evaluation, items 1, 2 and 4 are scored 0, 1, 2 and 3, while items 3, 5, 6, 7, 8, 9 and 10 are reverse scored, 3, 2, 1 and 0. The EPDS was adapted into Turkish by Engindeniz et al. in 1997. A cutoff point of 12/13 has been calculated for the EPDS, and women with a total scale score exceeding the cutoff point are regarded as an at-risk group. A Cronbach alpha value of 0.79 has been determined at validity and reliability investigation (19, 20).

Process: Participants were informed about the research and socio-demographic data including age (18-50 years), length of education, average gestational weeks and working status were recorded after the written

approval was obtained. Each patient was screened by EPDS and MDQ scales on a self-report basis. An EPDS score of 12 or above was considered as positive for depressive disorder, and MDQ score of 7 or above was accepted to indicate bipolar disorder. Bipolar disorder diagnosis was made according to SCID-I in a pregnant patient with positive MDQ score. Clinical interviews, SCID-I, self-report scales of MDQ and EPDS were administered to pregnant women included in the study by the physician responsible for the research.

The study was initiated after the approval of Karadeniz Technical University School of Medicine Ethics Committee was obtained with number 2016-03 in Apr 4 (2016).

Statistical Analysis

Statistical analysis was performed on SPSS (Statistical Program for Social Sciences) 13.0.1 software. Categorical variables were expressed as numbers and percentage at analysis of descriptive data, while mean and standard deviation were used for numeric variables. Qualitative data were compared using the chi square test. Bidirectional p values less than 0.05 were considered statistically significant.

RESULTS

Three hundred forty-seven pregnant women with a mean age of 30.4±5.9 were included in the study. Participants' mean length of education was 9.3±3.9 years, and mean week of gestation was 23.5±10.6. In addition, 263 (75.8%) were unemployed, while 84 (24.2%) were working.

The 347 subjects in the study completed both scales. Fifty-two (16.5%) subjects' EPDS scores were regarded as positive while the MDQ scores of 27 (7.8%) were assessed as positive. A diagnosis of BD was considered in 3 (11.1%) of the 27 women with MDQ scores of 7 or more at clinical interviews based on SCID- I. The MDQ scale was also positive in 11 (21.2%) of the women with positive EPDS scores. The EPDS was negative in 16 (59.3%) of the 27 patients screened positive at MDQ. Participants' scale evaluations are shown in Figure 1.

In addition, patients with positive MDQ screening had a significantly higher EPDS positivity compared to negativity (Odds Ratio (OR)=4.16, Confidence Interval (CI)=1.8-9.6) (p=0.001). Receiver Operating Characteristics (ROC) analysis for MDQ are shown Table 1.

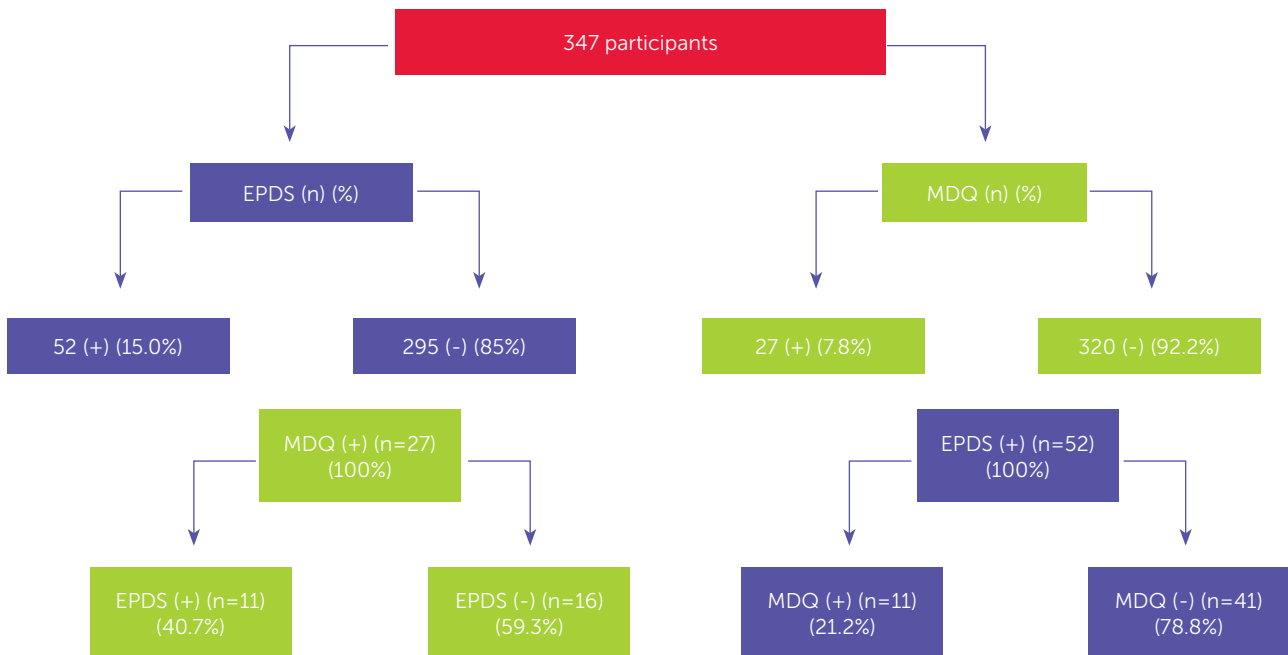


Figure 1: Participants' EPDS and MDQ evaluation results.

EPDS: Edinburgh Postnatal Depression Scale
 MDQ: Mood Disorders Questionnaire

Table 1: ROC analysis for MDQ

MDQ	Sensitivity	Specificity
0.5	0.98	0.30
1.5	0.89	0.54
2.5	0.79	0.71
3.5	0.62	0.82

MDQ: Mood Disorders Questionnaire

DISCUSSION

The purpose of this study is to determine the prevalence of BD among pregnant women referred to a university hospital's obstetrics and gynecology outpatient clinic and to reveal the risk of BD in pregnant women screened positive for prenatal depressive disorder. According to our study findings, 7.8% of pregnant women in the prenatal period were at high risk of BD, and a diagnosis of BD was considered in 11.1% of subjects in the group identified as high risk during structured interviews. One recent study of pregnant women reported that 5.1% of pregnant women were at high risk in terms of BD (13). Similarly, studies using different screening tools have reported prevalence of BD as 7.6-9.8% in general society, while a prevalence of BD of 0.5-4.3% has been reported in screening using structured interviews in a clinical population receiving primary health services (21).

The EPDS was evaluated as positive in 15% of all participants in this study. MDQ positivity was determined in 21.2% of the group evaluated as EPDS-positive. In support of these findings, more than 20% of patients receiving anti-depressants for depression in a population receiving primary health services were reported to screen positive for BD (13, 22). These findings suggest that a group of patients during pregnancy may be misdiagnosed as depressive disorder if they are not evaluated for bipolar disorder.

EPDS was negative in 16 (59.3%) of 27 patients screened with MDQ in this study. This result suggests that MDQ positivity would be overlooked if depressive symptoms of 16 patients were screened with EPDS which is a cross-sectional evaluation method. A study in literature on screening BP disorder showed that 21.4 % of EPDS positive pregnant women were also screened positive for MDQ and it is concluded that the risk of BP disorder would be underestimated when only EPDS scale is used

for screening (13). In light of the findings, it can be inferred that depressive symptoms during pregnancy might indicate a tendency to develop BD. Therefore, it is more appropriate to perform a longitudinal evaluation of BD symptoms with MDQ besides a cross-sectional assessment of depressive symptoms. MDQ(+) pregnant women with BP risk were referred to psychiatry outpatient clinic.

The need for screening for any disease partly depends on the prevalence of that disease (23, 24). Gestational diabetes is observed at a level of 2-6% at routine prenatal screening (25) and gestational hypertension at 5% (26). On the basis of the present study findings, although levels of positive screening for BD in the prenatal period are higher than those of gestational diabetes and hypertension, routine screening for BD is still not performed. In addition, risks such as premature birth, a low birth weight, elevation in fetal stress hormone levels and changes in neurobehavioral functions may be seen unless depressive and manic episodes in the perinatal period are treated (27). The appearance of a mood disorder during pregnancy can lead to impulsivity or self-harm behaviors, substance use, inattention concerning perinatal care and a hormonal environment deleterious to child development. When acute treatment is required in such a situation, the child will be exposed to high-dose psychotropic medications (28).

The uniqueness of the present study, in our opinion is the large sample size, application of strict inclusion and exclusion criteria and administration of SCID-I for diagnostic evaluation. In addition, in literature, no screening study has been performed evaluating the prevalence of bipolar disorder during pregnancy in Turkey. Cross-sectional evaluation at clinical interviews and the lack of long-term following may be regarded as limitations of this study. Differences in MDQ scoring in the literature may be regarded as a further limitation. Another limitation is that patients screened positive for EPDS but negative for MDQ did not undergo diagnostic interviews. In addition, diagnostic interviews were based on MDQ positivity since the aim of the study was to examine BD in pregnant women. Besides, EPDS is a measurement tool for postpartum period but it is also used for pregnant women in the literature (13, 29, 30).

Mental health disorders during pregnancy must be treated adequately as a public health priority. Otherwise, it would negatively affect both women's health and child development (7). Also women with bipolar disorder have an increased risk for pregnancy complications (9). Recognition and adequate treatment of maternal mental health disorders is a public health priority due to its significant impact on both short- and long-term women's health and child development. The provision of mental health care as an essential element of prenatal care is critical to the overall improvement of women's health (7). Our study findings emphasize the need to screen BD in pregnant women. Effective screening tests for BD in pregnancy period can help establishing early diagnosis and enabling early intervention to prevent a potential mood episode, particularly in the postnatal period, and also prevent clinical events that may be deleterious to both mother and her fetus.

Ethics committee approval: The study was initiated after receiving the approval of the Karadeniz Technical University School of Medicine Ethics Committee on April 4, 2016 (no: 2016-03).

Conflict of Interest: No potential conflict of interest was reported by the authors.

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