

The Determination of Prenatal and Early Postnatal Anxiety Level and Identification of Predisposing Factors for High Anxiety Level

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Abstract

Background: to evaluate the anxiety levels of women with uncomplicated pregnancies during prenatal and early postnatal periods and also to determine the effect of socio-demographic variables.

Methods: 200 women with uncomplicated pregnancies in their last trimester of gestation were included in this study. STAI was administered twice to participants in their last trimester of gestation (PNAS) and the second day of postnatal (EPAS) for measurement of anxiety scores. Socio-demographic characteristics including age, level of education, mode of delivery (vaginal or cesarean section), income status, availability of a supporter, pregnancy status of the plan (planned or unplanned) and way to conceive (spontaneous or IVF) were also recorded.

Findings: PNAS was 48.55 ± 7.76 and EPAS was 44.76 ± 6.03 . PNAS in <30 years-old group was higher than in ≥ 30 years-old group, although not achieved significantly significant (49.32 ± 7.29 vs. 47.63 ± 8.23 , $p=0.12$). Women in illiterate group had the highest PNAS (50.57 ± 7.33 , $p=0.004$). PNAS was significantly higher in women delivered vaginally ($p<0.001$). There was a trend towards increasing PNAS with unplanned pregnancy, with no availability of a supporter and with IVF pregnancy. There were no significant relationships between PNAS and income status.

Conclusion: Determination of prenatal anxiety level and knowing unfavorable predisposing factors could be useful. Because significant changes in prenatal maternal emotional well-being because of absence of self-efficacy for childbirth and psychosocial adaptation to pregnancy and birth anxiety. The unfavorable predictive factor for prenatal anxiety were <30.

Keywords: Postpartum depression; Postnatal anxiety level; Pregnancy

Introduction

Postpartum depression and anxiety disorder are common and serious complications of childbirth and also critical mental health problems [1]. Postpartum depression and anxiety disorder involve the development of depressive disorder in the postpartum period and are characterized by an emotional disturbance that accompanies the increased and critical responsibilities of caring for an infant. They are directly associated with a significant increase in risk for both mother and child. Such as maternal insufficiency to provide ideal care to the newborn infant and compromising infant attachment and child development.

While the lifetime prevalence of anxiety in women is approximately 30.5%, women are more likely to have anxiety than are men [2]. However anxiety and depression are two of the most common complaints with a prevalence of 30% during pregnancy and the puerperium several studies have indicated that maternal stress and anxiety have profound effects on pregnancy and they are predictors of adverse pregnancy outcomes [3]. including low birth weight and prematurity [4-6]. It was also shown that women with anxiety disorders during pregnancy are at increased risk for postnatal depressive symptoms [7]. However the majority of women with anxiety disorders during pregnancy were found to be undiagnosed and untreated. Moreover there are some predictive factors for anxiety disorders during pregnancy. They might be affected by differences in culture (such as genetic, the level of education, nutritional and sociodemographic) maternal age parity and the mode of delivery. The identification of these predictive factors can help in identifying women with anxiety disorders during pregnancy. Therefore, it seems reasonable to determine the anxiety levels of pregnant women during the prenatal and postnatal periods and some predictive factors.

We think that screening for anxiety disorders during pregnancy

is essential. In the present study we aimed to evaluate anxiety levels in pregnant women during the prenatal and early postnatal periods and to determine the effect of some important socio demographic variables including age level of education mode of delivery whether the pregnancy was planned or unplanned availability of a birth companion income status and method of conception (spontaneous or IVF) on anxiety levels during the prenatal and postnatal periods and the value of the State Anxiety Inventory (STAI) for assessment of maternal mental well-being.

Materials And Methods

Participants

The study protocol was approved by the Ethical Committee of the Medical Faculty of Yeditepe University. The study was conducted at the Department of Obstetrics and Gynecology, Yeditepe University Hospital Istanbul a comprehensive health science center and Bakirkoy Dr.Sadi Konuk Health Teaching and Research Hospital a research and education hospital between April and July 2013. Healthy women with uncomplicated pregnancies in their last trimester of gestation whose pregnancy was being followed at our department while waiting for their prenatal medical appointments and also on postnatal second day were invited to participate in the study. Sociodemographic variables

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including age level of education mode of delivery (vaginal or cesarean section) presence of high risk pregnancy income status availability of a birth companion whether the pregnancy was planned or unplanned and method of conception (spontaneous or IVF) were collected and the Spielberger State-Trait Anxiety Inventory (STAI) was administered to all women who met the inclusion criteria. After informed consent was obtained 200 pregnant women above 18 years old were included in the study. All women enrolled in this study were primigravida and they gave birth at term.

Anxiety measures

The STAI was administered to all participants for measurement of anxiety scores [8,9]. As noted earlier, the STAI is a widely used and fully validated instrument for the assessment of acute and chronic anxiety. The STAI was administered twice to participants in their last trimester of gestation and on postnatal day 2. In addition to the STAI for all study participants sociodemographic characteristics including age level of education mode of delivery (vaginal or cesarean section) income status availability of a birth companion whether the pregnancy was planned or unplanned and method of conception (spontaneous or IVF) were recorded. The STAI consists of 20 questions that are descriptors of emotional conditions on a 4-point scale: 1 rarely 2 sometimes 3 often and 4 usually [10]. There is substantial overlap between STAI assessed anxiety and depressed mood [11]. Of the STAI scores obtained ≤ 36 was considered to be no concern 37-42 was considered to be mild anxiety >42 was considered to be high anxiety.

Statistical analysis

Statistical analyses were performed using the Statistical Package for the Social Sciences version 21 (SPSS, Chicago, IL, USA Continuous variables were reported as mean \pm SD and categorical data were reported as number and percentage. The Kolmogorov-Smirnov test was used to determine whether or not they were normally distributed. For normally distributed variables the two independent samples t test was used to compare the mean difference between the two independent groups. The paired sample t test was used to compare the measurements at two time points. One-way ANOVA was used to test the mean differences between more than two independent groups. Levene's test was used to assess the homogeneity of the variances. When overall significance was observed pairwise post-hoc tests were performed using Tukey's test $P \leq 0.05$ was considered statistically significant.

Results

Two hundred eligible volunteers were recruited. The study outcomes are presented in Table 1. Prenatal anxiety score average in their last trimester of gestation was 48.55 ± 7.76 and early postnatal anxiety score average on postnatal day 2 was 44.76 ± 6.03 . Women were classified in two groups according to age as <30 and ≥ 30 years old to compare both anxiety score averages in terms of age. The results revealed that prenatal anxiety score average in the <30 years old group was higher than that in the ≥ 30 years old group although not significantly (49.32 ± 7.29 vs. 47.63 ± 8.23 $p=0.12$). Level of education was classified as illiterate primary education high school and university. Women in the illiterate group had the highest prenatal anxiety score average (50.57 ± 7.33) and this score was significantly higher than that in the other education groups ($p=0.004$) of the 200 participants. 115 (57.5%) delivered vaginally, while 85 (42.5%) underwent cesarean delivery. Prenatal anxiety score average was significantly higher in women who delivered vaginally ($p<0.001$). There was a trend towards increasing prenatal anxiety score average with unplanned pregnancy with lack of a birth companion and with IVF pregnancy as well. There

Variables	Prenatal anxiety score average	Early postnatal anxiety score average	p
Age			
<30 years-old (n=109)	49.32 \pm 7.29	44.62 \pm 5.47	<0.001*
≥ 30 years-old (n=91)	47.63 \pm 8.23	44.91 \pm 6.67	<0.001*
The level of education			
Illiterate (n=20)	50.57 \pm 7.33	42.75 \pm 6.46	<0.001*
Primer education (n=74)	50.35 \pm 6.39	45.36 \pm 6.96	<0.001*
Highschool (n=30)	48.23 \pm 8.58	46.73 \pm 4.26	0.36
Univesity (n=76)	46.24 \pm 8.2	43.91 \pm 5.3	0.007
The mode of delivery			
Vaginal (n=115)	50.31 \pm 6.93	44.64 \pm 5.7	<0.001*
Cesarean (n=85)	46.16 \pm 8.21	44.91 \pm 6.49	0.09
Pregnancy statu of the plan			
Planned (n=171)	48.27 \pm 8.009	44.84 \pm 6.27	<0.001*
Unplanned (n=28)	50.29 \pm 6.02	44.32 \pm 4.55	<0.001*
Availability of a supporter			
Yes (n=15)	46.6 \pm 9.47	42.67 \pm 5.48	0.06
No (n=185)	48.71 \pm 7.61	44.92 \pm 6.06	<0.001*
Way to conceive			
Spontanous (n=179)	48.44 \pm 7.74	44.59 \pm 5.68	<0.001*
IVF (n=21)	49.52 \pm 7.9	46.19 \pm 8.54	0.057
Income status			
Mild (n=43)	47.86 \pm 7.55	43.63 \pm 5.86	<0.001*
Moderate (n=116)	49.22 \pm 7.84	44.81 \pm 6.05	<0.001*
High (n=41)	47.37 \pm 7.6	45.78 \pm 6.1	0.173

All values are expressed as mean \pm SD. * $P<0.05$. significant difference

Table 1: The study outcomes.

was no significant relationship between prenatal anxiety score average and income status. Early postnatal anxiety score averages were similar in all groups and they were lower than prenatal anxiety score averages.

Discussion

The current finding showed significant changes in prenatal maternal emotional well-being measured by anxiety score average because of absence of self-efficacy for childbirth and psychosocial adaptation to pregnancy and birth anxiety. The prenatal anxiety score averages were prominently higher than early postnatal anxiety score averages because the women were more confident in their ability to cope with the postpartum period. This study also revealed that there are some predictive variables for emotional well-being during pregnancy. The unfavorable predictive factors for prenatal anxiety were unplanned pregnancy vaginal delivery lack of a birth companion and IVF pregnancy. Lower education level IVF pregnancy and unplanned pregnancy were associated with higher prenatal pregnancy anxiety scores. There was a trend towards increasing prenatal anxiety score average in the <30 years old group.

Anxiety is a complex psychological construct and the reactions of anxiety to stressful situations and their determinants have received much attention during the last decade [12]. Trait anxiety is a stable measure of anxiety proneness and contributes to the more state related anxiety responses in anticipation of childbirth. Anxiety level during late pregnancy might predicate anxiety disorder. Further determination of prenatal maternal anxiety level seems particularly important in the presence of unfavorable predisposing factors and thus it could help in the diagnosis and treatment of anxiety disorders during pregnancy in the prevention of postnatal depressive symptoms in increasing self-efficacy for childbirth in decreasing adverse pregnancy outcomes of maternal anxiety and in enabling psychosocial adaptation to pregnancy. Because anxiety disorders during pregnancy have a high prevalence the potential negative effects on mother child and child's well-being the great detrimental affects on the quality of life of women the acceptability

of routine screening with self-report instruments the misconceptions about symptoms associated with pregnancy and postpartum. In fact preventive approaches are based on risk characterization which is the first step towards any intervention strategy.

A study that involved women between the ages of 18 and 45 years in their last trimester of pregnancy and at low risk for obstetric complications revealed that stress anxiety financial problems perceived lack of parenting knowledge. A difficult relationship with the mother-in-law unplanned pregnancy and low self-efficacy were associated with antenatal depression while antenatal depression unplanned pregnancy difficult relationship with the mother-in-law dissatisfaction with overall care stress lack of social support giving birth to a female baby feeling pressured to birth the baby quickly and perceived low parenting knowledge were associated with postnatal depression [13]. In another study low annual income unemployment conception after IVF treatment and a previous history of miscarriage were also found to be associated with antenatal anxiety and depression [14]. In addition a cross-sectional study showed that conception after IVF treatment low income level low educational level and low marital satisfaction were significantly related to antenatal anxiety [15]. Another study showed that prenatal anxiety was significantly related to self-efficacy for childbirth in late pregnancy and antenatal characteristics influence intrapartal outcomes in nulliparas [16]. Bastani et al. confirmed the benefits of promoting relaxation during pregnancy in a study including a total of 110 obstetrically and medically low-risk primigravid women with a high anxiety level demonstrated by Spielberger's STAI [17]. In general studies that investigated prenatal maternal anxiety concluded that reducing anxiety and stress (with relaxation techniques) during pregnancy could help improve birth outcomes and self-efficacy for childbirth in late pregnancy [1,4,5]

Some limitations of the present study need to be pointed out: (1) all women enrolled in this study were primigravida and they gave birth at term but multiparity and preterm delivery can be affected by prenatal and early postnatal anxiety level (2) The relatively small sample size (3) The effect of social support for women was not determined.

In conclusion in light of our results and the literature determination of prenatal anxiety level and knowing unfavorable predisposing factors could be useful. The most important results in this study are determination of high prenatal anxiety level and identification of predisposing factors for high prenatal anxiety level despite the relatively small sample size. The current findings might be the first part of our study in future we will aim to study the effect of relaxation education in women with predisposing factors determined in the current study on prenatal and early postnatal anxiety level and pregnancy outcomes. These findings could be helpful for the provision of social and educational support at home during antenatal visits and also at hospital during childbirth for women with high prenatal anxiety levels especially in the presence of predisposing factors to reduce their anxiety and stress and to improve self-efficacy for childbirth maternal insufficiency to provide ideal care to the newborn infant psychosocial adaptation to pregnancy and pregnancy outcome.

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