

Characteristics Associated with Prenatal Distress in Turkish Women: A Cross-sectional Study

Basak Demirtas Hicyilmaz (PhD)

Associate Professor, Department of Nursing, Faculty of Nursing, Ankara University, Ankara, Turkey

ARTICLE INFO	ABSTRACT
<p><i>Article type:</i> Original article</p>	<p>Background & aim: Recent studies show that more research are needed on characteristics associated with prenatal distress. It was therefore aimed to examine the level of prenatal distress in Turkish pregnant women and its relationship with the women's personal and obstetric characteristics.</p>
<p><i>Article History:</i> Received: 01-Jul-2020 Accepted: 19-Nov-2020</p>	<p>Methods: This was a cross-sectional study. A total of 221 pregnant women who admitted for prenatal care between 15th April and 1st June 2016 were recruited for this study. Nineteen individuals declined to participate; accordingly, 202 individuals with uncomplicated pregnancy in all trimesters were included in the study. Data were collected using a demographic-obstetric questionnaire and the Tilburg Pregnancy Distress Scale. Student's t-test, and variance analysis were used to analyze the data.</p>
<p><i>Key words:</i> Prenatal Care Anxiety Depression Pregnant Women Psychological Distress</p>	<p>Results: More than one third of the pregnant women (37.6%) were found to experience prenatal distress. Women with unplanned pregnancies (18.33±6.07) ($p<0.05$) had a risk of prenatal distress. Also, women whose husbands were primary school graduates (16.66±6.14) ($p>0.05$) and who had a low level of income (16.61±5.92) ($p>0.05$) were still at risk for prenatal distress, as their mean scores were above the distress scale cut-off point.</p> <p>Conclusion: The results emphasize that nurses and midwives may not contribute to the reduction of distress levels during pregnancy in the hospital settings. For this reason, a referral system seems to be the best solution to follow-up the healthy pregnant women in primary care settings and transfer them to the secondary care settings, when necessary.</p>

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Introduction

Pregnancy is a stressful period in which anxiety and depression can be seen, requiring new roles and biopsychosocial compliance for both the pregnant woman and their family. While psychological distress can be defined as depression, anxiety, and/or stress, prenatal distress can be defined as those fears and concerns of the mother that relate to the health of the fetus, changes in her body, pregnancy, and childbirth (1,2,3). The prevalence of psychological distress in pregnancy varies according to country. The prevalence of women with depression symptoms during pregnancy varies from 11% to 27% in developing countries (4). In Turkey, the prevalence of depressive symptoms in pregnancy is reported as 27.3-

36.3% whereas the prevalence of postpartum depression is 21.8-36.9% (5,6). Karaçam and Ancel (2009) found that 27.9% of pregnant women experience depression requiring treatment (5). Maternal psychological stress is conceptualized as a teratogen, which can result in perinatal and/or damaging developmental consequences (7). The American College of Obstetricians and Gynecologists (ACOG) recommends that patients be screened at least once during the perinatal period for symptoms of depression and anxiety (8). The National Institute for Health and Care Excellence (NICE) guidelines encourage obstetric care providers to facilitate general discussion with pregnant women around mental health (9). Due to the

* Corresponding author: Basak Demirtas Hicyilmaz, Associate Professor, Department of Nursing, Faculty of Nursing, Ankara University, Ankara, Turkey. Email: hicyilmaz@ankara.edu.tr

negative effects of prenatal distress on both mother and fetus, it is important to evaluate pregnant women psychologically.

Abnormal fetal heart rate, fetal distress, fetal death, and spontaneous abortion are among the negative effects of prenatal distress on the fetus. Huizink et al. (2004) suggested that an increase in maternal cortisol may decrease uteroplacental blood flow (10). Furthermore, Korhonen et al. (2019) concluded that maternal prenatal distress during pregnancy influences infant hypothalamic–pituitary–adrenal (HPA) axis functioning as well as the functioning of the immune system (11). A study by Göbel et al. (2018) revealed that the quality of perceived emotional proximity to the fetus was consistently impaired by anxiety (12). Coussons-Read et al. (2012) found that increased inflammatory cytokines in the mother's circulation due to distress were determinants of preterm labor (13). Preeclampsia, bleeding, placental anomalies, increased use of epidural analgesia, increased use of vacuum/forceps, emergency caesarean section, and preterm birth risk are known to be important problems that may be caused by prenatal distress. Early cessation of breastfeeding, low birth-weight, low Apgar score, increase in admission to neonatal intensive care unit, postpartum depression, neonatal growth retardation, and deterioration in behavioral, cognitive, and emotional development in children are problems that are caused by prenatal distress during the postpartum period (14). This study aims to examine the level of prenatal distress in Turkish pregnant women and its relationship with the women's personal and obstetric characteristics.

In primary health care institutions, family physicians and family health personnel are responsible for the follow-up of pregnant women without risk, and refer to secondary health care if there is any risk (15). However, in Turkey hospitals operate as secondary care institutions, and serve both pregnant and risky pregnant women since referral from primary care is not compulsory. Moreover, women mostly apply to secondary health institutions on the grounds that they provide a more detailed physical examination.

The cost of prenatal care at hospital without referral from primary care institution is also increasing. In accordance with the guidelines prepared by the Turkish Ministry of Health and other organizations related to women's health, a woman is monitored at least four times throughout her pregnancy. During these visits, a physical examination is performed; laboratory tests, iron and vitamin D drug requirements are evaluated; and immunization is performed in accordance with the trimester. It is noteworthy that according to prenatal follow-up guidelines, there are no forms for determining distress in pregnancy and psychosocial assessment is not integrated into prenatal follow-up (15). This situation makes it difficult to identify women who are in distress and women who are prone to the development of distress. Furthermore, due to the short duration of antenatal visits and the considerable workloads within secondary health care, communication with the healthcare professional is limited. In such a busy environment, health personnel may not find enough time for the psychosocial evaluation.

Materials and Methods

This cross-sectional study was conducted between 15th April and 1st June 2016 in the antenatal outpatient clinic of a university hospital in Ankara, Turkey. Inclusion criteria for this study were as follows: Turkish pregnant women with at least a primary-school level of education, who spoke Turkish, who were at least 18 years old, and who had no pregnancy complications. The exclusion criteria for this study were as follows: risk of preterm birth, bleeding during pregnancy, abourtus imminens, placenta previa, premature rupture of membranes, multiple pregnancies such as twins and triplets, fetus-related medical problems, and conceiving with assisted reproductive technology. A total of 221 pregnant women who met the inclusion criteria were recruited for this study (the total population who applied for prenatal care between 15th April and 1st June 2016). Nineteen individuals declined to participate; accordingly, a total of 202 (91%) individuals were included in the study.

After informed consent had been obtained from all the voluntary participants, they were invited to a private consultation room. Two forms, the pregnancy description form, and the

Tilburg Pregnancy Distress Scale (TPDS) were used to collect the study data. Both the pregnancy description form and the TPDS were distributed to the pregnant women by the researcher at the end of the antenatal follow-up. These were then collected by the researcher after being filled out by the pregnant women, which took about 15–20 minutes.

Pregnancy description form: This form comprises 19 questions, the majority of which are multiple choice questions. The form consists of two parts, including questions on descriptive information (age, income, social security, education, husband's education, etc.), and obstetric information (gravida, recent mode of delivery, pregnancy planning, gestational week, prenatal follow up etc.). An advisory group, including two maternity nurse practitioners, two obstetricians, and university faculty members was used to ensure validity of this instrument. All members of the advisory group agreed on the validity of the questionnaire. Validity of the instrument was ensured by successfully piloting the questionnaire with 15 mothers. The findings of this pilot questionnaire were not included in the final analysis. To ensure the reliability of this instrument, the same advisory group as used to determine the instrument's validity examined the coding process of those answers to the open-ended questions as provided by these mothers. All members of the advisory group agreed on the coding process.

Tilburg Pregnancy Distress Scale (TPDS): The TPDS was developed in the Netherlands by Pop et al. (2011) (16). Cronbach's alpha of the scale was noted to be .78. Cronbach's alpha value of the Social (Partner involvement) subscale was reported as .80, and the Negative Affect subscale reported as .81. The Turkish validity and reliability study of the Scale was performed by Ertuğrul et al. (2015) (17). Cronbach's alpha of the Scale was reported as .70. Cronbach's alpha value of the Social (Partner involvement) subscale was reported as .71 for the Social (Partner involvement) subscale, and .66 for the Negative Affect subscale. The Scale comprises 16 items and has two main sub-dimensions, including Negative Affect and Partner Involvement. The Negative Affect subscale consists of 12 items pertaining to pregnancy,

birth, fear, anxiety, perceptions, and concerns. The Partner Involvement subscale consists of four items related to partner support during pregnancy. The scale is a four-point Likert-type scale (0=often, 1=quite often, 2=sometimes, and 3=rarely or never). In the scoring, the scores of 3rd, 5th, 6th, 7th, 9th, 10th, 11th, 12th, 13th, 14th, and 16th items were reverse scored. The minimum score possible from the scale is 0 and the maximum score possible is 48; the maximum scores for the two subscales are 33 and 15 for the Negative Affect and the Partner Involvement subscales, respectively. The scale has a certain cut-off point. A total score of 16.5 or above indicates a risk for prenatal distress (depression, anxiety, stress).

Ethical considerations: All participating pregnant women were informed by the researcher about the aim and method of the study; all those who were willing to participate in the study were asked to fill out the forms individually in a separate room. Ethics Committee approval (Approval date: 23.05.2016; Approval number: 167) and the permission of the study hospital were obtained before the study was carried out. The study was conducted according to the Declaration of Helsinki.

Personal and pregnancy-specific factors, such as age, education, husband's education, income, gravida, recent mode of delivery, pregnancy planning, gestational week, prenatal follow up were independent variables of this research. It has been investigated as to whether these factors are associated with prenatal distress. Data were analyzed using SPSS 23 package program. A Shapiro–Wilk test was used to evaluate whether the data fit the normal distribution. It was determined that the data fit the normal distribution. Descriptive statistics were used to evaluate the study data. Independent samples t-test and variance analysis were used to determine the relationship between the independent variables and Tilburg Pregnancy Distress Scale scores. A value of $P < 0.05$ was considered to indicate statistical significance.

Results

Almost half of the pregnant women (41.6%) were in the 25–30 age group and were high school graduates (44.6%). A majority (81.7%) of

the women were unemployed, had a middle-income (87.1%), and had social security (81.2%). More than half of the women were multiparous (59.9%), and more than half

(60.4%) of the women's last delivery had been vaginal. More than half (60.9%) of the women were in the last trimester and close to a quarter (17.8%) did not receive prenatal follow-up.

Table 1. Mean TPDS Scores according to the characteristics of the pregnant women

Characteristics	N (%)	Mean TPDS Score±sd	Test and p value
Age group*			
19-24	70(34.7)	13.50±7.15	F=2.264 p=0.107
25-30	84(41.6)	15.05±6.67	
31-43	48(23.8)	16.29±7.87	
Education			
Primary school	19(9.4)	13.57±5.26	F=2.383 p=0.07
Secondary school	52(25.7)	16.96±7.02	
High school	90(44.6)	13.80±7.32	
University	41(20.3)	14.87±7.46	
Husband's education			
Primary school	15(7.4)	16.66±6.14	F=0.530 p=0.662
Secondary school	46(22.8)	15.32±6.21	
High school	93(46.0)	14.44±7.55	
University	48(23.8)	14.45±7.67	
Employment tatus			
Employed	37(18.3)	14.48±7.51	t= -0.304 p=0.761
Unemployed	165(81.7)	14.88±7.12	
Income level perception			
Low	21(10.4)	16.61±5.92	F=0.740 p=0.479
Moderate	176(87.1)	14.60±7.28	
High	5(2.5)	14.60±8.64	
Social security			
Yes	164(81.2)	14.64±7.29	t= -0.705 p=0.482
No	38(18.8)	15.55±6.74	

*mean±sd 27.10±5.17 (min. 19; max. 43)

Table 2. Mean TPDS Scores according to the obstetric characteristics of pregnant women

Obstetric characteristics	No (%)	Mean TPDS Score ±sd	Test and p value
Gravida			
Primigravida	81(40.1)	13.92±7.43	t= -1.438 p=0.152
Multigravida	121(59.9)	15.40±6.97	
Recent mode of delivery			
Vaginally	67(60.4)	15.29±6.65	t= -0.449 p=0.654
Cesarean	44(39.6)	15.90±7.51	
Pregnancy planning			
Planned	181(89.6)	14.40±7.20	t= -2.401 p=0.017
Unplanned	21(10.4)	18.33±6.07	
Gestational week			
First 14 weeks	26(12.9)	15.80±7.29	F=2.122 P=0.122
15-27 weeks	53(26.2)	13.09±7.10	
28-40 weeks	123(60.9)	15.34±7.12	
Prenatal follow-up			
Yes	166(82.2)	14.55±7.21	t= -1.095 p=0.275
No	36(17.8)	16.00±7.00	

The mean distress scores of the women who were older than 31 years (16.29±7.87), and who had no social security (15.55±6.74) were found to be higher (p>0.05). Those women whose husbands were primary school graduates (16.66±6.14) and those women who have a low level of income perception (16.61±5.92) were at risk of prenatal distress (p>0.05) (Table 1).

The mean distress scores of those women who have two or more pregnancies (15.40±6.97), who were in their first (15.80±7.29) or last trimester (15.34±7.12) of pregnancy, and who did not have regular

antenatal follow-up (16.00±7.00) were found to be higher (p>0.05). The women’s mean distress scores were higher for among those whose pregnancies were unplanned (UPP) (18.33±6.07) (p<0.05) (Table 2).

Although not shown in the table, further analysis determined that partner support was inadequate for those women with UPP and the partner involvement for those women with planned pregnancies was more adequate (6.28±3.06) (p<0.05 t=-2.513). Comparatively, it was found that recent mode of delivery did not affect the women’s distress scores (Table 2).

Table 3. Lowest–highest obtainable TPDS scores and the TPDS scores obtained by the pregnant women

TPDS	Lowest–highest scores that women can obtain	Lowest–highest scores that women obtained	Mean score±sd
Partner involvement	0–15	0–15	4.66±3.16
Negative affect	0–33	0–32	10.15±6.46
TPDS Total Score	0–48	0–47	14.81±7.18

The mean total distress score was 14.81±7.18. The mean score of the partner involvement sub scale was 4.66±3.16 and the mean score of the negative affect subscale was 10.15±6.46 (Table 3). The TPDS has a certain cut-off point. A total score of 16.5 or above indicates a risk of prenatal distress (depression, anxiety, stress). According to the cut-off point, 37.6% of pregnant women experienced distress (stress, anxiety, depression) (Figure 1).

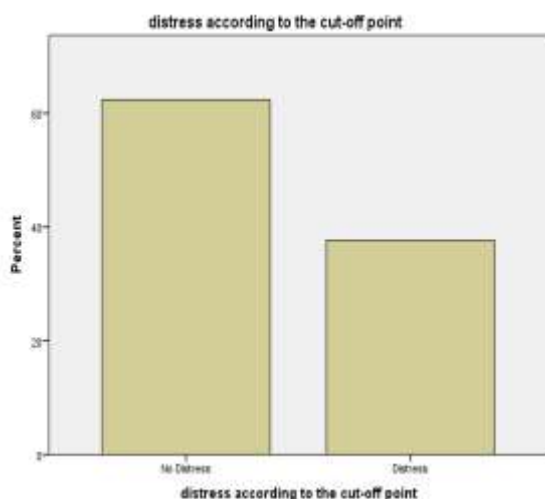


Figure 1. Distress according to cut-off point

Discussion

This study was conducted to examine the level of prenatal distress in Turkish pregnant women and the relationship between the women’s personal and obstetric characteristics. The findings of the study revealed that more than a quarter of the pregnant women experience prenatal distress. Women with UPP (p<0.05) had a risk of prenatal distress. Women with husbands who were primary school graduates (p>0.05) and who had low levels of income (p>0.05) were still at risk of prenatal distress, as their mean scores were above the cut-off point; though these findings were not found to be statistically significant. The mean prenatal distress scores of those women who were not regularly followed up during pregnancy (p>0.05), who were in the first (p>0.05) and last trimester of pregnancy (p>0.05), or who had two or more pregnancies (p>0.05), were also close to the cut-off point.

In this study, although the mean distress score of the study group (14.81±7.18) was below the cut-off point, it was found that almost half of the women (37.6%) were experiencing distress. Molgora et al. (2020) in their study, concluded that women could experience distress even in the absence of a high score that was above the cut-off on the TPDS (18). That the majority of the study group had a low or

moderate level of income, and that nearly a quarter of this group had no social security may explain the risk of prenatal distress. Similarly, according to our study results, the distress scores of women with a low level of income were above the TPDS cut-off point, which indicates a risk for prenatal distress. Research results revealed that the greatest impact on the development of depression was low socioeconomic status and that low socioeconomic status (SES) during pregnancy was associated with a shorter breastfeeding duration throughout the postpartum period (19–22). It is possible that psychosocial disturbances, such as low SES during pregnancy, could lead to a decreased ability to breastfeed throughout those changes in maternal hypothalamic-pituitary-adrenal (HPA) activity (23). The findings of this study and other studies indicate that low socioeconomic status is a disadvantage and that those interventions that reduce stress, and which start in the pre-conceptional period are important. In their research, Nwebube et al. (2017) found that level of anxiety and depression decreased significantly in a study group who received music therapy. They also emphasized that music therapy during prenatal period is a pleasant, relaxing, and an inexpensive intervention (24).

Furthermore, in our study, women with husbands who were primary school graduates were still at risk of prenatal distress, as their mean scores were above the TPDS cut-off point, although not found to be statistically significant. Similarly, Erbil et al. (2009) found that the distress scores of those pregnant women whose husbands had a low level of education were higher (25). Çapık et al. (2015) emphasized that, as the level of education of the pregnant woman's partner increases, the risk of developing prenatal distress decreases (21). In fact, culturally limited communication with the partner and the thought that pregnancy is only the responsibility of the woman might also explain the higher levels of distress seen in our study group. González-Mesa et al. (2018) found statistically significant differences in prevalence of depression between Turkish (30.0%) and Spanish (9.9%) pregnant women; they identified certain socio-cultural features, such as country of residence, the planning of the

pregnancy, and insufficient partner support were the best predictor variables for depression (26). Despite the existence of a policy to promote male participation in women's health issues in Turkey, it is known that men continue to regard women's health issues to be solely the concern of women. It is important to provide men with health education about their roles in pregnancy and childbirth.

The findings of our study indicate that women with unplanned pregnancy have high prenatal distress scores and are at risk for prenatal distress. Whether the pregnancy was planned was found to be the only statistically significant variable in the present study. Women's mean distress scores were found to be higher for those with UPP. Ekrami et al. (2020) emphasized that women's emotions pertaining to their pregnancy is closely associated with their behavior during antenatal and postpartum period (27). Similarly, other studies show that the distress scores of pregnant women who did not plan their pregnancy are higher than those who did plan their pregnancies (5,21,28). Prenatal education book, which is commonly used in health institutions in our country, emphasizes that unplanned and unintended pregnancies should be carefully evaluated and directed to specialists if necessary (29). ACOG recommends psychosocial screening for all pregnant women, including screening for depression, stress, psychosocial support, and pregnancy intention (8).

Moreover, further analysis of the results of the present study show that partner support was lower in unplanned pregnancies. Studies show that women who receive more support from their spouses during pregnancy have more positive attitudes, receive more prenatal care, have lower prenatal distress, and have better health behaviors (19,28,30,31). Tanner et al. (2012) found that mothers who perceive that they have strong social support from their husbands during pregnancy can control their stress during the early stages of their pregnancy, and experience a lower level of emotional distress in the postpartum period and less distress in their babies (32). The results of a study by Molgora et al. (2020) revealed that the psychological state of the mother is more closely related to marital adjustment rather than

obstetric variables. Based on these findings, it can be said that social support provided by the woman's spouse and family is very important (18). It is very important to plan initiatives to increase the partner support for women with unwanted pregnancies. Nurses and midwives can contribute to the reduction of distress levels during pregnancy by increasing partner support. Meiksin et al. (2010) emphasized that the first prenatal visit provides an important opportunity for improving communication between pregnant women and health professionals. These visits provide healthcare staff with the opportunity to learn about the psychosocial environment of the pregnant woman, provide support, make necessary suggestions, plan the necessary interventions for women with UPP, and improve the pregnancy results (33).

In our study, the mean distress scores of the pregnant women who did not have regular antenatal follow-up were higher and were close to the TPDS cut-off point, although not found to be statistically significant. This situation can be explained by the feeling of trust provided by regular prenatal follow-up. Although prenatal follow-ups are reassuring for determining that there is no physical problem, or when determining that everything is under control, the fact that there is no statistically significant difference between the distress scores of those women who do and do not receive regular follow-up emphasizes that the psychological dimension should be evaluated with different interventions in prenatal follow-ups. Yapp et al. (2019) revealed that pregnant women want midwives to ask open questions allowing them to discuss mental health issues (34). In Turkey, however, the formal of provision of prenatal education by nurses and midwives is not currently included in routine prenatal care services. As a solution, follow-up and antenatal training for all no-risk pregnant women should be activated in primary care as part of the responsibility of family medicine, rather than being provided in second level institutions where the number of nurses, midwives, and doctors is insufficient. Additionally, formal provision of prenatal education by nurses and midwives should be included in routine prenatal

care services, which could be a major change in Turkey.

The mean distress scores of the pregnant women in the first and last trimester of pregnancy were higher and close to the TPDS cut-off point, although not found to be statistically significant. Similarly, Çalık and Aktaş (2011) found that anxiety and depression were more common in the first and third trimester (35). In a further study, no statistically significant relationship was found between prenatal distress scores and gestational week (21). Faramarzi et al. (2019) demonstrated that late-pregnancy distress has negative effects on all indexes of birth outcomes, such as weight, height, and head circumference (36). The second trimester would be the most convenient period in which stress levels could be reduced. Pan et al. (2019) identified that the eight-week mindfulness program when provided to women in the second trimester effectively reduced self-perceived stress (37). According to Ibrahim et al. (2019), positive appraisal is the only way of coping with stress that predicted reduced distress (38). Barber et al. (2017) stated that face-to-face conversations, where concerns can be expressed and questions can be asked, is very important for managing stress (39). Similarly, researchers suggested that enhancing self-efficacy and self-confidence and gaining skills pertaining to a positive emotional approach could be beneficial for pregnant women who are in distress (40–42). As is understood from our study and other study findings, it seems useful to develop intervention programs for pregnant women during the second trimester.

This study was limited to a single center in Ankara and is also limited because it was only carried out in a secondary healthcare institution.

Conclusion

This study was conducted to examine the levels of prenatal distress in Turkish pregnant women, as well as the relationship between personal and obstetric characteristics such as income, husband's education, planned or unplanned status of pregnancy, social security, number of previous pregnancies, gestational week, prenatal follow-up, and recent mode of delivery. The findings of the study revealed that more than a quarter of the pregnant women experienced prenatal distress. A high level of

prenatal distress was associated with having unplanned pregnancy, having husbands who were primary school graduates, having a low level of income, lack of regular follow-up, and being in the first and last trimester of pregnancy. Women with unplanned pregnancies had a risk of prenatal distress and it was the only statistically significant variable in the present study.

In the hospital, due to the increase in the number of patients alongside healthy pregnant women, only a physical evaluation of the pregnant woman can be undertaken. The results of this study emphasize that interventions for reducing distress levels during pregnancy—such as increasing partner support, increasing partner involvement in unplanned pregnancies, improving different interventions for evaluating pregnant women psychologically, and developing intervention programs for pregnant women during second trimester—require more time. Hospitals are secondary healthcare institutions, and in the hospital setting, it does not seem that nurses and midwives are able to contribute to the reduction of pregnant women's distress levels during pregnancy. For this reason, a referral system seems to offer the best solution. Follow-up of healthy pregnant women in primary care settings, when necessary, should be transferred to the secondary care settings to reduce patient density in hospitals. Prenatal distress, which healthy pregnant women often experience, could be reduced by implementing more effective prenatal services. A more effective implementation of antenatal education and support in the context of primary health care would be more likely to make a difference in terms of a holistic approach to healthy pregnant follow-up. Since this study was limited to a single center in Ankara, it is thought that its results are not generalizable.

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Conflicts of interest

The author declare no conflicts of interest.

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