ORIGINAL RESEARCH

Anxiety, Depression, Hopelessness and Perceived Social Support Levels of Women with and without Threatened Miscarriage

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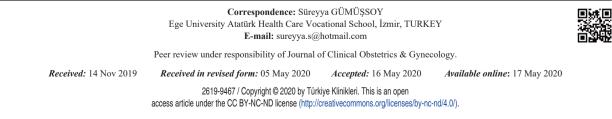[a]Ege University Atatürk Health Care Vocational School, İzmir, TURKEY
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ABSTRACT Objective: The study was designed to investigate the the levels of anxiety, depression, hopelessness, and perceived social support of pregnant women with threatened miscarriage (TM) and without TM. **Material and Methods:** This descriptive study was conducted with 167 pregnant women with TM (82) and without TM (85) who were admitted to the gynecology and obstetrics clinic of a tertiary hospital between September 2017 and 2018. The study data were collected using the Pregnant Women Information Form, Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI), Beck Hopelessness Scale (BHS) and Multidimensional Scale of Perceived Social Support (MSPSS). The data were analyzed with percentages, arithmetic mean, Fisher's Exact test, t test, Chi Square and One-way ANOVA tests. **Results:** The mean BDI, BAI and BHS scores of the participants with TM (12.10±1.28, 11.82±1.38 and 9.41±0.66 respectively) were higher than those of the participants without TM (6.64±0.67, 6.51±0.60 and 4.30±0.55 respectively). The mean scores the participants with TM obtained from the MSPSS were lower than those of the participants without TM (60.28±14.93 and 66.84±8.83 respectively). **Conclusions:** It was determined that the pregnant women with TM had higher levels of anxiety, depression and hopelessness and lower levels of perceived social support than did the healthy pregnant women without TM. It is thought that anxiety, depression, hopelessness and perceived social support of pregnant women including those diagnosed with TM and providing them with social support would minimize their risk of developing psychosocial distress such as anxiety, depression and hopelessness.

Keywords: Anxiety; depression; social support; threatened miscarriage

Pregnancy is not only a period of positive expectations but also a process during which stress and difficulties are experienced. Besides psychosocially influencing women whose pregnancy continues healthily, pregnancy may lead to the arousal of psychological distress, emergence or progression of psychosocial problems such as depression and anxiety in women who has risky conditions regarding with pregnancy.[1-5] Approximately 16-20% of women are reported to suffer from emotional distress in the prenatal period.[6,7] Psychological distress developing during pregnancy is thought to cause an increase in the risk of having a series of pregnancy-related con-

cerns.[8] On the other hand, conditions causing risks to pregnancy such as threatened miscarriage (TM) may be the source of psychological distress. TM is defined as a condition occurring in 20-25% of pregnancies and manifesting itself as bleeding in the first half of pregnancy. Ultrasound will show that the cervix is closed, and there is a live intrauterine gestation. Bleeding usually occurs in small amounts, but sometimes it may become more serious.[9]

TM is a common complication occurring during the early stages of pregnancy. It is a leading cause of hospitalizations during pregnancy and a serious emotional burden on the pregnant woman unlike the other

types of miscarriages because in TM, pregnancy continues and prospective mothers are concerned about the unclear fate of their unborn children.[10] This uncertainty and concern occurring during pregnancy drive the pregnant woman who is excited and hopeful about the future of the baby to despair, and shatter her future dreams.[11] The mother's awareness of the risk of pregnancy, hospitalization, bed rest, or all these factors can cause anxiety, depressive symptoms and hopelessness during pregnancy, or may increase existing anxiety, depression symptoms and hopelessness levels.[4,12] This emotional tension, namely depression and anxiety, is reported to bring about negative fetal and maternal results by increasing the risk of developing pregnancy- and birth-related complications.[13,14] Pregnant women's reactions to complicated pregnancy may change in connection with personality structures, defense systems, family support, as well as social support systems.[15]

Antenatal depression and anxiety affect one out of four women in the first trimester; however, this rate is higher in women diagnosed with TM.[16] It is thought that screening of pregnant women including those diagnosed with TM for depression and anxiety would make it possible for early identification and diagnosis, and management of health problems.[16] Although the emotional impact of miscarriage and pregnancy loss on women has been well researched, the number of studies investigating the effects of TM on the psychological status of pregnant women is rather limited. Mental health symptoms are rarely evaluated in pregnant women diagnosed with TM in the clinical setting.[9] It is important to understand the emotional impact and psychological consequences of TM on pregnant women. Pregnant women having different levels of social support and pregnancy acceptance status may affect psychological condition of women during pregnancy. To find out such needs of pregnant women, their anxiety, depression, hopelessness, and perceived social support levels during pregnancy should be identified. Thus, it is expected that pregnant women's anxiety, depression, and hopelessness can be reduced and that their psychosocial adaptation to pregnancy can be facilitated.[10,15] Psychosocial problems such as anxiety, depression and hopelessness that may occur especially in the first trimester

of pregnancy may affect the pregnancy physiologically and prevent it to continue healthy. By determining the depression, anxiety and hopelessness levels and applying therapeutic approaches and determining the social support status of the pregnant women and providing the necessary social support, an effective development that can positively affect the pregnancy process can be achieved clinically. The present study was designed to investigate the anxiety, depression, hopelessness and perceived social support levels of pregnant women with TM and pregnant women without TM.

RESEARCH QUESTION

Is there any significant difference in anxiety, depression and perceived social support levels between pregnant women with TM and witout TM?

Is there any relationship between anxiety, depression and perceived social support levels between pregnant women with TM and witout TM?

MATERIAL AND METHODS

SETTING AND SAMPLE

This descriptive study was carried out with 167 pregnant women with TM (82) and without TM (85) who were admitted to the gynecology and obstetrics clinic of a tertiary hospital between September 2017-2018. This hospital is one of the largest hospitals in the region. In the gynecology outpatient clinic of this hospital located in İzmir, the third biggest city in Turkey, almost all of the current practices regarding women's health are performed. The gynecology and obstetrics clinic has a capacity of 33 beds and in the clinic approximately 1200 deliveries take place.

Inclusion criteria for the pregnant women diagnosed with TM were being married, being literate, being able to understand and speak Turkish, being volunteer to participate in the study and having 20 week gestation and (including 20th week) not having any complication. Pregnant women who had a previous or current diagnosis of a psychiatric disorder and who had a history of serious life-threatening disease or who were currently treated due to such problems were excluded from the study.

The sample size of the study was not determined before the study was started. A post-hoc power analysis was performed with the G*Power 3 Data Analysis program based on the data of the present study. The power analysis was performed using the independent sample t-test at a 95% confidence interval and p=0.05 significance level. When the power analysis was conducted measurements on 82 pregnant women diagnosed with TM and 85 pregnant women without TM had been carried out. In the power analysis, the power of the study was determined as 0.89, its effect size was moderate (0.5) and it was concluded that the sample was a good representative of the population as the power of a study is suggested to range between 80 and 90 in the literature.[17,18]

DATA COLLECTION METHOD

Data Collection Tools: The study data were collected using the Pregnant Women Information Form, Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI), Beck Hopelessness Scale (BHS) and Multidimensional Scale of Perceived Social Support (MSPSS). All data were collected by face-to-face interviews by researchers and took an average of 20-25 minutes to collect.

Pregnant Women Information Form: The form was developed by the researchers (all the authors of this paper) in line with the literature regarding TM and psychosocial distress during early pregnancy includes 12 items questioning pregnant women's sociodemographic and pregnancy-related characteristics.[4,13,16]

Beck Depression Inventory (BDI): The inventory is composed of 21 items and used to determine depression risk and to measure the severity of depression symptoms. The validity and reliability study of the Turkish version of the inventory was performed by Hisli.[19] The minimum and maximum possible scores to be obtained from the overall scale are 0 and 63 respectively. Based on the scores obtained from the BDI in the validity and reliability study, depression levels are interpreted as follows: 0-13=no depression, 14-19=mild depression, 20-28=moderate depression and 29-63=severe depression.[19] In the present study, the Cronbach's alpha internal consistency value was found as 0.94.

Beck Anxiety Inventory (BAI): The 21-item BAI is used to measure the severity of anxiety symptoms experienced by an individual. The validity and reliability study of the Turkish version of the inventory was performed by Ulusoy et al.[20] According to the scores, anxiety levels are classified as low (0-17 points), moderate (18-24 points) and high (25 points and more).[20] In the present study, the Cronbach's alpha internal consistency value was found as 0.95.

Beck Hopelessness Scale (BHS): The 21-item BHS is used to measure a person's negative expectations of the future. The validity study of the Turkish version of the scale was performed by Seber et al.[21] The higher the score is, the higher the level of hopelessness is.[21] In the present study, the Cronbach's alpha internal consistency value was found as 0.90

Multidimensional Scale of Perceived Social Support (MSPSS): The scale whose Turkish validity study was conducted by Eker and Arkar has 12 items some of which are as follows: "My family (e.g., my mother, my father, my spouse, my children, my brothers/sisters) really tries to help me", "I can trust my friends when things go bad", "I have friends who can share my joy and my sorrows", "I have a special person other than my family and friends (e.g., boyfriend, fiancé, relative, neighbor, physician) with whom I can share my joy and sorrows".[22] The items are rated on a 7-point scale ranging from 1 (Very Strongly Disagree) to 7 (Very Strongly Agree). The scale assesses the adequacy of social support obtained from three different sources (family, friends and a special person). The lowest and highest possible scores to be obtained from the overall scale are 12 and 84 respectively. The higher the score is, the higher the social support is.[22] In the present study, the Cronbach's alpha internal consistency value was found as 0.97

DATA ANALYSIS

The study data were analyzed using the IBM-SPSS 24.0 package program. The Kolmogorov-Smirnov test was used to assess the normal distribution of the data. The distribution of the data obtained from the groups was compared with percentages (age, educational level, occupation, income situation, marriage year, gestation week, family type, chronic diseases,

situation of conceiving a child before, situation of having a living child before abortion/curettage/still-birth, number of birth), arithmetic mean (age, gestational age, BDI, BAI, BHS, MSPSS score), Fisher's Exact test, "t" test and Chi-square test (between the group of women descriptive characteristics). Correlation analysis was used to determine the relationship between the BDI, BAI, BHS and MSPSS scales. In addition, power analysis was performed using G*Power 3 Power Analysis Program to reveal the power of the study. Results were evaluated at a 95% confidence interval. p-values<0.05 were considered statistically significant.

ETHICAL CONSIDERATION

The study was carried out after the approval of the University Scientific Research and Publication Ethics Board (142-2017) was granted. After the permission of the ethics committee, written permission was obtained from the institution where the research will be conducted. After the women who met the inclusion criteria for the study were informed about the aim, methodology, expected benefits, predictable risks and difficulties of the study. The possible risks the study might pose to their health, its unfavorable aspects in terms of their personal characteristics, and the conditions in which the research would be carried out, they were told that participation was voluntary and they could withdraw at any time. After they orally approved participating in the study, their written informed consent was obtained. The study was carried out in accordance with the Helsinki Declaration Principles

RESULTS

The data in the article does not show normal distribution. The analysis of the distribution of the participating patients in terms of their sociodemographic characteristics demonstrated that the mean age was 31.51±4.25 years for the participants with TM and 30.98±4.20 years for the participants without TM; mean gestational age was 10.81±3.90 weeks for the participants with TM and 7.17±3.67 weeks for the participants without TM. The distribution of the sociodemographic characteristics of women included in the study is given in Table 1. The Chi-square analy-

sis performed to examine the homogeneity of the groups showed that they were homogeneous, that is, they had similar descriptive characteristics such as age (p=0.486), education (p=0.653), income (p=0.788), marriage year (p=0.082), family type (p=0.205), chronic diseases (p=0.183), occupation (p=0.493), situation of conceiving a child before (p=0.337), situation of having a living child before (p=0.060), abortion/curettage/stillbirth condition (p=0.560), number of birth (p=0.070), and gestation week (p=0.880) (Table 1). The comparison of the mean scores the participants obtained from the BDI (with TM=12.10±1.28; without TM=6.64±0.67), BAI (with TM=11.82±1.38; without TM=6.51±0.60), BHS (with TM=9.41±0.66; without TM:4.30±0.55) and MSPSS (with TM=60.28±14.93; without TM=66.84±8.83) revealed statistically significant differences between the groups (p<0.05). The mean scores the participants obtained from the scales are presented in Table 2. The correlation between the mean scores the participants obtained from the BDI and BAI, BDI and BHS, BDI and MSPSS, BAI and BHS, BAI and MSPSS, BHS and MSPSS is shown in Table 3. There was a significant high positive correlation between BDI and BAI mean scores in both groups, because their anxiety levels increased as their depression levels increased (with TM: r=0.66, p<0.001; without TM: r=0.66, p<0.001).

There was a significant negative moderate correlation between BDI and MSPSS (with TM: r=-0.59, p<0.001; without TM: r=-0.56, p<0.001) and between BAI and MSPSS (with TM: r=-0.58, p<0.001; without TM: r=-0.45, p<0.001) in both groups, which suggests that the participants with low social support had high levels of anxiety and depression. However, the correlation between BAI and BHS was significant, positive and moderate, that is, they became more hopeless about pregnancy as their anxiety levels increased (with TM: r=0.59, p<0.001; without TM: r=0.47, p<0.001). While there was a significant negative high correlation between the BHS and MSPSS (with TM: r=-0.66, p<0.001; without TM: r=-0.53, p<0.001) in the women with TM, there was a significant negative moderate correlation in the women without TM that is, they became more hopeless about pregnancy as their social support levels decreased (Table 3).

TABLE 1: Distribution of the women according to their sociodemographic characteristics.					
	With TM (n=82)		Without TM (n=85)		χ²/p
	n	%	n	%	
Age group (years)					
20-24	4	4.9	8	9.4	χ²=2.44
25-29	24	29.3	26	30.6	p=0.486
30-34	32	39.0	35	41.2	
35-40	22	26.8	16	18.8	
Educational level					
Elementary	17	20.7	20	23.5	χ²=0.85
High school	51	62.2	47	55.3	p=0.653
University and higher	14	17.1	18	21.2	
Occupation					
Yes	41	50.0	47	55.3	χ²=0.46
Not working	41	50.0	38	44.7	p=0.493
Income situation					
Less than revenue expense	31	37.8	31	36.5	χ²=0.47
Meets income expense	42	51.2	47	55.3	p=0.788
More than revenue	9	11.0	7	8.2	
Marriage Year					
0- 2	26	31.7	19	22.4	χ²=6.69
3-5	33	40.2	27	31.8	p=0. 082
6-8	15	18.3	30	35.3	
9 and higher	8	9.8	9	10.5	
Gestation week					
-4	5	6.1	8	9.5	χ²=10.31
5-9	21	25.6	23	27.0	p=0. 880
10-14	36	43.9	29	34.1	
15-19	14	17.1	20	23.5	
20	6	7.3	5	5.9	
Family type					
Nuclear family	78	95.1	84	98.8	χ²=1.96
Large family	4	4.9	1	1.2	p=0.205
Chronic diseases					
No	72	87.8	80	94.1	χ²=2.03
Yes	10	12.2	5	5.9	p=0.183
Situation of conceiving a child before					
Yes	35	42.7	21	24.7	χ²=0.92
No	47	57.3	64	75.3	p=0.337
Situation of having a living child before					
No	58	70.7	72	84.7	χ²=4.72
Yes	24	29.3	13	15.3	p=0.060
Abortion/curettage/stillbirth condition*					
No	24	63.2	13	72.2	χ²=0.44
Yes	14	36.8	5	27.8	p=0.560
Number of birth					
1.	48	58.5	64	75.3	χ²=5.32
2.	28	34.1	17	20.0	p=0.070
3. and higher	6	7.3	4	4.7	

*The statistical analysis was performed for only women who conceived child.

TABLE 2: Comparison of scores obtained from the Beck Depression Inventory, Beck Anxiety Inventory, Beck Hopelessness Scale and Multidimensional Scale of Perceived Social Support.

	n	$\bar{\chi}$	SS	t/p
Beck Depression Inventory				
With TM	82	12.10	1.28	t=3.79
Without TM	85	6.64	0.67	p<0.001*
Beck Anxiety Inventory				
With TM	82	11.82	1.38	t=3.56
Without TM	85	6.51	0.60	p<0.001*
Beck Hopelessness Scale				
With TM	82	9.41	0.66	t=5.90
Without TM	85	4.30	0.55	p<0.001*
Multidimensional Scale of Perceived Social Support				
With TM	82	60.28	14.93	t=-3.47
Without TM	85	66.84	8.83	p<0.001*

*p<0.05.

TABLE 3: Correlation between the Beck Depression Inventory, Beck Anxiety Inventory, Beck Hopelessness Scale and Multidimensional Scale of Perceived Social Support Scores of Study Groups.

	With TM (n=82)		Without TM (n=85)	
	r	p	r	p
Beck Depression Inventory / Beck Anxiety Inventory	0.66	<0.001*	0.66	<0.001*
Beck Depression Inventory / Beck Hopelessness Scale	0.64	<0.001*	0.58	<0.001*
Beck Depression Inventory / Multidimensional Scale of Perceived Social Support	-0.59	<0.001*	-0.56	<0.001*
Beck Anxiety Inventory / Beck Hopelessness Scale	0.59	<0.001*	0.47	<0.001*
Beck Anxiety Inventory / Multidimensional Scale of Perceived Social Support	-0.58	<0.001*	-0.45	<0.001*
Beck Hopelessness Scale / Multidimensional Scale of Perceived Social Support	-0.660	<0.001*	-0.535	<0.001*

*p<0.05.

There was a significant positive high correlation between the BDI and BHS (with TM: r=0.64, p<0.001; without TM: r=0.58, p<0.001). According to these results, as the depression levels of women with TM increase, their hopelessness levels increase in parallel.

DISCUSSION

In the present study, the psychosocial status of pregnant women with TM and pregnant women without TM was investigated. In several clinical studies, mis-carriage and pregnancy loss have been reported to cause mental distress such as depression, anxiety, anger and grief. Most of these studies focused on abortions resulting in early pregnancy loss such as spontaneous abortions, induced curettages and recurrent miscarriages.[23-25] However, the number of studies on mental problems such as anxiety and depression disorders in pregnant women with TM is quite limited.

In the present study, the mean BDI, BAI and BHS scores of the participants with TM were higher

than those of the participants without TM. Consistently with the present study, in their study, Chee et al. found that 17% of the pregnant women had depressive symptoms in the first trimester and that this rate doubled in the pregnant women diagnosed with TM. In addition, while almost half of the pregnant women diagnosed with TM had a high level of anxiety, only less than one fourth of the women with uncomplicated pregnancies had a high level of anxiety.[26] Similarly in another study, the Beck Anxiety Inventory score was 18.90±10.52 in the TM group and 8.24±5.24 in the healthy control group (p<0.001) whereas the Beck Depression Inventory score was 18.07±8.49 in the TM group and 7.47±6.22 in the healthy control group (p<0.001).[10] In Zhu et al.'s study, the rate of depression and anxiety symptoms was significantly higher in the pregnant women diagnosed with TM than that in the women with uncomplicated pregnancies.[16] The findings of the abovementioned studies show a potential relationship between TM and anxiety and depression. Pregnancy-related uncertainty causes anxiety even in women with healthy pregnancy, and women diagnosed with abortus imminens have more uncertainty about their pregnancies because they carry a risk of pregnancy loss and may experience more prenatal anxiety and depression than do other women. Therefore, during pregnancy, patients with TM should be evaluated in terms of not only medical condition but also anxiety and depression. It is stated that in society, women generally perceive pregnancy as hope. Pregnant women's feelings and concerns related to their current pregnancies are thought to increase their anxiety to develop a new pregnancy loss in the future and decrease their hope.[27] In women with psychological problems such as anxiety and depression, the perceived social support level decreases and thus they become more hopeless.[28,29] Similarly, in the present study, in both groups, hopelessness levels increased and perceived social support levels decreased as depression and anxiety levels increased. In a study conducted by Zu et al., it was found that depressive symptoms were 2.7 times more in women with TM and 48.8% of women with TM were at high risk for anxiety.[16] Therefore, clinicians should be sensitive to the psychological consequences of TM.

Social support is very important for pregnant women who are at risk of abortion to cope effectively with this stress.[29] The mean MSPSS scores the participants with TM were lower than those of the participants without TM. Social support gives people a sense of being loved and cared, and provides a respectable and moral bond between people. In addition, social support facilitates an individual to not only confront and accept the situation, but also get help from others, especially in their hour of need. In several studies, it is stated that depressive people with low social support remain depressed longer than those with high social support.[30,31] Social support given by family, spouse and friends is stated to prevent women from developing anxiety and depression.[12] Similarly, in the present study, depression and anxiety levels increased as the perceived social support levels decreased.

Therefore, it is thought that provision of social support to pregnant women with TM, may have mental benefits and help them have a healthier pregnancy and postpartum period.

According to our research, a positive correlation was found between BDI, BAI mean score and BHS mean scores; a negative correlation was found between MSPSS mean score and BHS mean scores. Prenatal depressive and anxiety symptomatology affects one in every four women in the first trimester and is even more common among women who are at risk of miscarriage. Screening for targeted depression and anxiety, including women who are under the threat of miscarriage, can facilitate early and effective detection and management of mental health problems among pregnant women.[32] However, there is no study in the literature comparing the women with and without TM with regard to depression, anxiety, perceived social support and hopelessness levels. It is thought that the high BHS scores of women with high BAI and BDI mean scores may have resulted from negative beliefs about the continuation of pregnancy.

CONCLUSION

At the end of the present study, it was determined that the pregnant women with TM had higher levels of

anxiety, depression and hopelessness, and lower levels of perceived social support than did the pregnant women without TM.

In the light of the study results, because of having higher anxiety, depression and hopelessness levels and lower perceived social support levels, women with TM constitutes a risk group that needs further psychosocial screening and psychosocial support during the provision of healthcare.

Pregnant women at risk of abortion can be given psychoeducation regularly to cope with possible anxiety status. Support from nurses, doctors and social workers can be obtained to investigate the social support opportunities of pregnant women at risk of abortion, and the family can be given psychoeducation to increase the social support that the family can show to the pregnant woman. It is thought that anxiety, depression and hopelessness levels can be reduced by applying care to these pregnant women in order to increase their social support, and they can contribute to a uncomplicated pregnancy by minimizing their psychological problems.

LIMITATIONS

There are some limitations to this study. The first of these limitations was inability to confirm clinical depression using a psychiatric consultation due to financial constraints and a limited budget. Another limitation was the relatively small sample size, but this size is acceptable for a sample consisting entirely of clinical cases. However, the results may be different in populations including those of different religious, ethnic and cultural groups and cannot be generalized to all women.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Süreyya Gümüşsoy;* ***Design:*** *Süreyya Gümüşsoy, Sevgül Dönmez, Özlem Çiçek;* ***Control/Supervision:*** *Süreyya Gümüşsoy, Sevgül Dönmez, Özlem Çiçek;* ***Data Collection and/or Processing:*** *Süreyya Gümüşsoy, Özlem Çiçek;* ***Analysis and/or Interpretation:*** *Süreyya Gümüşsoy;* ***Literature Review:*** *Süreyya Gümüşsoy, Sevgül Dönmez;* ***Writing the Article:*** *Süreyya Gümüşsoy, Sevgül Dönmez, Özlem Çiçek;* ***Critical Review:*** *Süreyya Gümüşsoy, Sevgül Dönmez, Özlem Çiçek.*

REFERENCES

1. Obrochta CA, Chambers C, Bandoli G. Psychological distress in pregnancy and postpartum. Women Birth. 2020;5:1871-92. [Crossref] [PubMed] [PMC]

2. Astepe BS, Bosgelmez S. Antenatal depression and anxiety among women with threatened abortion: a case-control study. Gynecology Obstetrics & Reproductive Medicine. 2019;1-8. [Crossref]

3. Çalık YK, Aktaş S. Depression in pregnancy: prevalance, risk factors and treatment. Current Approaches in Psychiatry. 2011;3(1):142-62.

4. Biaggi A, Conroy S, Pawlby S, Pariante CM. Identifying the women at risk of antenatal anxiety and depression: a systematic review. J Affect Disord. 2016;191:62-77. [Crossref] [PubMed] [PMC]

5. Nagandla K, Nalliah S, Yin LK, Majeed ZA, Ismail M, Zubaidah S, et al. Prevalence and associated risk factors of depression, anxiety and stress in pregnancy. Int J Reprod Contracept Obstet Gynecol. 2016;5(7):2380-8. [Crossref]

6. Wilcox M, McGee BA, Ionescu DF, Leonte M, LaCross L, Reps J, et al. Perinatal depressive symptoms often start in the prenatal rather than postpartum period: results from a longitudinal study. Arch Women's Ment Health. 2020;6. [Crossref] [PubMed]

7. Karlsson L, Tolvanen M, Scheinin NM, Uusitupa HM, Korja R, Ekholm E, et al. Cohort profile: the FinnBrain birth cohort study (FinnBrain). Int J Epidemiol. 2018;1;47(1):15-6j. [Crossref] [PubMed]

8. San LCI, Meaney S, McNamara K, O'Donoghue K. Psychological and support interventions to reduce levels of stress, anxiety or depression on women's subsequent pregnancy with a history of miscarriage: an empty systematic review. BMJ Open. 2017;7;7(9): e017802. [Crossref] [PubMed] [PMC]

9. Dadkhah F, Kashanian M, Eliasi G. A comparison between the pregnancy outcome in women both with or without threatened abortion. Early Hum Dev. 2010;86(3):193-6. [Crossref] [PubMed]

10. Aksoy H, Aksoy Ü, Karadağ Ö, Hacımusalar Y, Açmaz G, Aykut G, et al. Effect of threatened miscarriage on maternal mood: a prospective controlled chort study. Turkiye Klinikleri J Gynecol Obst. 2015;25(2):92-8. [Crossref]

11. Cote-Arsenault D, Bidlack D, Humm A. Women's emotions and concerns during pregnancy following perinatal loss. MCN Am J Matern Child Nurs. 2001;26(3):128-34. [Crossref] [PubMed]

12. Agostini F, Neri E, Salvatori P, Dellabartola S, Bozicevic L, Monti F, et al. Antenatal depressive symptoms associated with specific life events and sources of social support among Italian women. Matern Child Health J. 2015;19(5):1131-41. [Crossref] [PubMed]

13. Lia J, Gaob J, Wangc CC, Ngd E, Wub X. Evidence-based interventions of threatened miscarriage. World J Tradit Chin Med. 2017;3(1):50-9. [Crossref]

14. Metin A, Pasinlioğlu T. The relationship between perceived social support and prenatal attachment in pregnant women. Int Refereed J Gynaecol Maternal Child Health. 2016;5:49-66. [Crossref]

15. Gümüşdaş M, Apay S, Özorhan S. Comparison of psycho-social health in pregnant women with and without risk. HSP. 2014;1(2):32-42. [Crossref]

16. Zhu CS, Tan TC, Chen HY, Malhotra R, Allen JC, Østbye T, et al. Threatened miscarriage and depressive and anxiety symptoms among women and partners in early pregnancy. J Affect Disord. 2018;237:1-9. [Crossref] [PubMed]

17. Chow SC, Shao J, Wang H, Lokhnygina Y. Sample size calculations on clinical research. 3rd ed. Boca Raton, FL: CRC Press; Taylor&Francis Group; 2008. p.13.

18. Faul F, Erdfelder E, Buchner A, Lang AG. Statistical power analyses using G*Power 3.1: tests for correlation and regression analyses. Behavior Research Methods. 2009;41(4):1149-60. [Crossref] [PubMed]

19. Hisli N. Validity, reliability of beck depression ınventory for university students. Psikoloji Dergisi. 1989;7:3-13.

20. Ulusoy M, Sahin NH, Erkmen H. Turkish version of the beck anxiety inventory psychometric properties. J Cogn Psychother Int Q. 1998;12(2):163-72.

21. Seber G, Dilbaz N, Kaptanoğlu C, Tekin D. Despair scale: validity and credibility. J Crisis. 1993;1(1):139-42.

22. Eker D, Arkar H. Factorial structure, validity, and reliability of the multidimensional scale of perceived social support. Turkish Psikoloji Dergisi. 2001;12:17-25. [Crossref]

23. Charles VE, Polis CB, Sridhara SK. Abortion and long-term mental healthoutcomes: a systematic review of the evidence. Contraception. 2008;78(6):436-50. [Crossref] [PubMed]

24. Qu F, Wu Y, Zhu YH, Barry J, Ding T, Baio G, et al. The association between psychological stress and miscarriage: a systematic review and meta-analysis. Sci Rep. 2017;7(1):1731. [Crossref] [PubMed] [PMC]

25. Xing H, Luo Y, Wang SHY. Effects of negative emotions and life events on women's missed miscarriage. Iran J Public Health. 2018;47(2):219-24. [PubMed]

26. Chee CY, Lee DT, Chong YS, Tan LK, Ng TP, Fones CS, et al. Confinement and other psychosocial factors in perinatal depression: a transcultural study in Singapore. J Affect Disord. 2005;89(1-3):157-66. [Crossref] [PubMed]

27. Cote-Arsenault D. The influence of perinatal loss on anxiety in multigravidas. J Obstet Gynecol Neonat Nurs. 2003;32(5):623-9. [Crossref] [PubMed]

28. Yağmur Y, Oltuluoğlu H. Social support and hopelessness in women undergoing ınfertility treatment in eastern Turkey. Public Health Nursing (Boston, Mass.). 2011;29(2):99-104. [Crossref] [PubMed]

29. Maghade MA, Singh DA, Faye AD, Gawande S, Tadke R, Bhave SH, et al. A study of depressive features and perceived social support in patients with miscarriage. Indian Journal of Mental Health. 2018;5(4):412-18. [Crossref]

30. Arshad T, Hafeez N. Religiosity social support and distress in miscarriage. Pakistan Journal of Professional Psychologists. 2016;7(1):46-58.

31. Harris LF, Roberts SC, Biggs MA, Rocca CH, Foster DG. Perceived stress and emotional social support among women who are denied or receive abortions in the United States: a prospective cohort study. BMC Womens Health. 2014;19(14):76. [Crossref] [PubMed] [PMC]

32. Dagklis T, Tsakiridis I, Chouliara F, Mamopoulos A, Rousso D, Athanasiadis A, et al. Antenatal depression among women hospitalized due to threatened preterm labor in a high-risk pregnancy unit in Greece. J Matern Fetal Neonatal Med. 2018;31(7):919-25. [Crossref] [PubMed]