Published Online: 2025 November 17

Research Article

The Relationship Between Anxiety During Pregnancy and Perceived Social Support in Pregnant Women Referred to Health Center in Semnan (2019)

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Received: 11 November, 2025; **Accepted:** 11 November, 2025

Abstract

Background: Pregnancy leads to numerous changes, including alterations in psychological needs, often resulting in anxiety that necessitates various psychological adjustments. Social support is a key factor influencing anxiety.

Objectives: This study aimed to determine the relationship between anxiety during pregnancy and perceived social support in pregnant women.

Methods: This cross-sectional study included 1,095 pregnant women who referred to the Tadayon Comprehensive Health Center in Semnan city in 2019, using a convenience sampling method. All participants completed a demographic checklist, the shortened Social Support Questionnaire (SSQ), and the shortened Pregnancy-Related Anxiety Questionnaire (PRAQ). Data were analyzed using SPSS version 21 software. Descriptive statistics, Spearman's correlation coefficient, and a generalized linear regression model were employed.

Results: The mean age of participants was 29.38 ± 4.94 years. Most women (73.3%) were housewives, and 64.5% had academic education. Nearly half (47%) were experiencing their first pregnancy, and 1.5% had a history of miscarriage or stillbirth. Social support demonstrated a significant inverse correlation with pregnancy anxiety ($R = -0.214$, $P < 0.001$). Higher education level, primigravidity, and a history of miscarriage were associated with greater social support ($P < 0.001$). Increasing age was associated with lower prenatal anxiety ($P = 0.029$).

Conclusions: The findings underscore the protective role of social support in mitigating pregnancy anxiety. These results suggest that interventions to enhance social support, tailored to factors such as age, education, and parity, may improve mental well-being during pregnancy. Thus, developing and implementing targeted social and cultural programs to strengthen social support for pregnant women is a key implication of this research.

Keywords: Anxiety, Pregnant Women, Social Support, Stress, Psychological, Quality of Life

1. Background

Pregnancy is a critical period in a woman's life and is often accompanied by stress and anxiety, requiring significant psychological adjustment (1). This period involves both physiological and psychological adaptations for the mother and her family, demanding special attention (2). Pregnancy increases both physical and emotional needs, which may contribute to anxiety and depression (3). The role of stress and anxiety in the onset or prognosis of physical and mental disorders is well established, with some physical illnesses potentially originating from stress and anxiety (4). Although stress and anxiety are inherent aspects of life, they can also result in change, growth, and, in certain contexts, improved well-being (5). Various findings

How to Cite: Taheri S V, Saffarieh E, Taherian M H, Mirmohammadkhani M. The Relationship Between Anxiety During Pregnancy and Perceived Social Support in Pregnant Women Referred to Health Center in Semnan (2019). Middle East J Rehabil Health Stud. 2026; 13 (2): e168101. https://doi.org/10.5812/mejrh-168101.

indicate that anxiety is a prevalent psychological issue during pregnancy, often following a U-shaped trajectory, with levels peaking during the first and third trimesters (5).

Psychological disorders during pregnancy negatively affect quality of life and, if untreated, may adversely influence fetal development (6). Prolonged anxiety can activate the autonomic nervous system, cause contraction of smooth muscles in arteries, reduce uterine-placental blood flow and oxygenation, lead to abnormal fetal heart rate patterns, and heighten the risk of preterm labor (7).

Studies have shown that social support is a vital coping mechanism during stressful situations, including pregnancy (8, 9), and interacts with all levels of stress exchange patterns (10). Al-Mutawtah et al. (11), in a systematic review, highlighted the wide range of emotional support experienced and valued by pregnant women from various sources. Some women expressed satisfaction, while others reported dissatisfaction, with tangible and intangible forms of support. For certain individuals, spirituality played an important role in mitigating stress, while for others, it increased stress levels (11). A lack of social support negatively influences the mother's mental state during and after pregnancy (12).

Social support can reduce stress, potentially increase resilience, and improve quality of life by mediating between stressful life factors and physical or mental problems and by strengthening cognitive abilities (8). Individuals with greater social support are believed to experience a higher quality of life (13) and are less vulnerable to illness even when encountering new stressors. Conversely, maladaptive thinking and behaviors are more common among those with little social support (14). Therefore, social support during pregnancy and the postpartum period is critical (15). Despite advances in addressing physical problems during pregnancy, mental health issues remain significant for pregnant women (16). Some studies in Iran report moderate to severe anxiety and low levels of social support among pregnant women (17, 18).

Multiple factors contribute to anxiety and stress during pregnancy. Given that women with lower social support tend to experience higher anxiety, and considering the adverse effects of anxiety on pregnancy outcomes (19), strategies to strengthen social support for pregnant women should be developed to help reduce anxiety levels. While previous studies have extensively explored the link between perceived social support and pregnancy-related anxiety, the influence of cultural context on this relationship requires further investigation. In many societies, especially countries like Iran, family structures and cultural norms significantly affect a woman's emotional well-being during pregnancy. Therefore, understanding how these cultural factors shape both the perception of social support and the experience of anxiety is crucial for the development of culturally sensitive interventions.

2. Objectives

Anxiety during pregnancy can significantly impact maternal and child well-being (20, 21). However, comprehensive data on its prevalence and contributing factors, particularly the role of social support, remain scarce in the Iranian context. Given the critical importance of maternal and child health outcomes, this study aimed to determine the level of anxiety experienced by pregnant women referred to health centers in Semnan and specifically to investigate the relationship between pregnancy anxiety and perceived social support, while rigorously controlling for potential confounding demographic and obstetric variables. The findings of this research provide essential information for the design and implementation of targeted anxiety control and prevention measures.

3. Methods

3.1. Study Design and Participants

This cross-sectional study was conducted as part of the Semnan Cohort Study of Maternal and Neonatal Health, which involves the systematic examination and recording of data regarding maternal and neonatal outcomes during pregnancy and after delivery.

A total of 1,095 pregnant women aged 18 to 45 years were initially approached via convenience sampling at the prenatal care health center in Semnan. The final sample included 1,023 pregnant women, yielding a high participation rate of 93.4%. The remaining 72 cases (6.6%) were excluded from the final analysis. Exclusion criteria included incomplete completion of the Pregnancy-Related Anxiety Questionnaire (PRAQ) or Social Support Questionnaire (SSQ) (specifically, a missing response rate exceeding 10% for either scale), missing key demographic information essential for analysis (e.g., age or gestational week), or inconsistencies between questionnaire responses and medical chart data. The high participation rate and strict exclusion criteria help minimize selection bias and enhance the study's integrity.

Data were collected using a structured questionnaire administered through interviews when pregnant

women attended the health center for routine prenatal care. The purpose of the study was explained to each participant, and written informed consent was obtained prior to participation. The study was approved by the Ethics Committee of Semnan University of Medical Sciences (IR.SEMUMS.REC.1398.254).

3.2. Instruments

3.2.1. Pregnancy-Related Anxiety Questionnaire

The PRAQ by Van den Bergh (22), validated in Persian by Askarizadeh et al. (23), was used to assess anxiety. The shortened form with 8 items was employed. The total score is the sum of scores for each item, graded from one to four, resulting in a possible range of 8 to 32. Higher scores indicate greater anxiety. The internal consistency of the questionnaire, as measured by Cronbach's alpha, was reported at 0.78 by Askarizadeh and Behroozy (24), 0.743 by Nasrabadi et al. (25), and 0.73 in the present study.

The eight items are:

1. I am worried about whether I can continue my current pregnancy until the time set by the doctor for delivery.

2. I feel that the anxieties and worries of this pregnancy have overwhelmed me.

3. I am worried about being able to take care of my new baby.

4. I am sure I can have some control over my pregnancy outcomes (likely reverse-scored).

5. I am worried about my delivery.

6. I am sure my baby will be healthy (likely reverse-scored).

7. I am cautious about providing my baby with items such as clothes, room, etc.

8. I have tried very hard to take the necessary precautions during pregnancy (in terms of weight, sexual issues, activity and diet, smoking, etc.).

3.2.2. Social Support Questionnaire

To assess perceived social support, the SSQ developed by Sarason et al. in 1983 (26) and validated in Persian by Naseh et al. (27) was used. The Cronbach's alpha was reported as 0.85 by Afarini et al. (28), 0.96 by Naseh et al. (27), 0.90 by Sarason et al. (26), and 0.87 in the current study. The shortened 8-item SSQ measures both the extent of a person's social network and satisfaction with this support across two scores: SSQN (average number of people presumed to provide support) and SSQS (average satisfaction with this support). Each item is scored from one to five, yielding a total score range of 8 to 40, with higher scores indicating greater perceived social support.

The eight items are:

1. There are people around me who care about what happens to me.

2. I am respected and loved.

3. I have the opportunity to talk to others about work and home problems.

4. I have the opportunity to talk to others about personal and family problems.

5. I have the opportunity to talk to others about financial problems.

6. I am invited to go out and do activities with other people.

7. I receive valuable advice from others on important life issues.

8. There are people available to take care of me if I get sick.

3.3. Data Collection Method

Data were collected using questionnaires administered via interviews when pregnant women attended the prenatal care health center for routine care. The study's purpose was explained, and willingness to participate was confirmed. Written consent was obtained from all participants.

Two primary questionnaires were used: The PRAQ and the SSQ. The PRAQ is a shortened 8-item version, scored from 8 to 32, with higher scores indicating greater anxiety. The SSQ, also an 8-item form, measures both the SSQN and SSQS, with total scores ranging from 8 to 40. Higher scores indicate greater perceived social support.

All collected data were entered into a checklist and subjected to statistical analysis. Of the initial sample, 1,023 pregnant women fulfilled the inclusion criteria and their data were used in the final analysis.

3.4. Statistical Analysis

A total of 1,023 pregnant women met the inclusion criteria and their data were analyzed. Normality of the data was assessed using the Kolmogorov-Smirnov and Shapiro-Wilk tests. If quantitative parameters were normally distributed, parametric tests such as ANOVA and independent *t*-test were used; otherwise, nonparametric tests such as the Mann-Whitney U and Kruskal-Wallis tests were applied. Correlations between quantitative parameters were assessed using the Pearson correlation coefficient. Statistical analysis was

conducted using SPSS version 21, with a significance level set at less than 0.05.

3.5. Ethical Consideration

This study was conducted in accordance with the ethical principles of the Ethics Committee of Semnan University of Medical Sciences. Approval was obtained from the Ethics Committee (reference number IR.SEMUMS.REC.1398.254). Before data collection and intervention, the study objectives, methods, and potential complications were explained to all participants, and written informed consent was obtained from each.

4. Results

Of the 1,095 pregnant women referred to the Tadayon Health Center, 1,023 met the inclusion criteria and completed the study. The demographic and maternal characteristics of the participants are presented in Table 1. The mean age of participants was 29.38 ± 4.94 years. The majority had academic education (64.5%) and were unemployed (73.3%). Additionally, 47% were experiencing their first pregnancy.

Table 1. Demographic and Maternal Characteristics

Parameters	No. (%)
Education	
Primary	92 (9)
Diploma	271 (26.5)
Academic	660 (64.5)
Job	
Employed	273 (26.7)
Unemployed	750 (73.3)
History of pregnancy	
Yes	542 (53)
No	481 (47)
History of miscarriage	
Yes	15 (1.5)
No	1008 (98.5)

The overall mean scores for pregnancy-related anxiety and perceived social support are summarized in Table 2. The mean anxiety score was 21.19 ± 3.56, and the mean social support score was 32.66 ± 8.03.

Table 2. Mean and Standard Deviation and Scope of Pregnancy-Related Anxiety and Social Support Criteria for the Whole Scale

Items	Mean ± SD	Min-Max
Anxiety score	21.19 ± 3.56	8 - 29
Social support score	32.66 ± 8.03	8 - 40

In this study, significant differences were observed in social support scores across subgroups based on education level, previous pregnancy history, and history of miscarriage, with greater social support observed among those with academic education, a history of previous pregnancy, or miscarriage (Table 3). No significant differences were found in pregnancy anxiety scores across these subgroups.

As shown in Table 4, a significant negative correlation was found between pregnancy anxiety and perceived social support ($R = -0.214$, $P < 0.001$). This inverse relationship suggests that as perceived social support increases, pregnancy-related anxiety tends to decrease. This correlation remained significant after controlling for variables such as age, education, occupation, pregnancy history, and miscarriage history.

5. Discussion

This study examined the relationship between pregnancy anxiety and perceived social support during pregnancy. Both social support and anxiety are crucial considerations in the care of pregnant mothers. A lack of social support or the presence of anxiety can affect not only the mother and fetus but also the entire family. Several factors, including satisfaction with social support and maternal anxiety, may significantly impact a woman's ability to recover during the postpartum period (29). Certain factors can interfere with the healing process and hinder maternal and child care. The cultural foundations and customs prevalent in Iranian society may significantly influence the level of attention and support — particularly from family members — received by mothers. Factors such as culture, ethnicity, geography, and societal definitions of women's roles may affect pregnancy anxiety and perceived social support. However, further research is needed to clarify these relationships.

Our findings, which reveal a significant inverse correlation between social support and pregnancy-related anxiety, should be interpreted within the context of Iranian culture. Unlike many Western societies, where social support may primarily come from a partner or friends, the Iranian support network often includes extended family, such as mothers, mothers-in-law, and female relatives, who play a central role in supporting pregnant women. This robust familial network may explain the relatively high level of perceived social support observed in our sample.

However, these cultural dynamics can also complicate matters. Traditional beliefs and expectations regarding pregnancy and childbirth may, in some cases, inadvertently contribute to anxiety. For example,

Table 3. Mean and Standard Deviation of Social Support and Pregnancy Anxiety Scores Among the Subgroups Studied

Sub-groups	No.	Pregnancy Anxiety		Social Support	
		Mean ± SD	P-Value	Mean ± SD	P-Value
Education level			0.561		< 0.001
Primary	92	21.56 ± 3.42		30.06 ± 9.37	
Diploma	271	21.21 ± 3.60		31.49 ± 8.39	
Academic education	660	21.13 ± 3.57		33.50 ± 7.54	
Job with income			0.622		0.827
No	750	21.23 ± 3.50		32.69 ± 8.09	
Yes	273	21.10 ± 3.72		32.57 ± 7.88	
Pregnancy history			0.076		< 0.001
No	481	20.98 ± 3.60		33.72 ± 7.86	
Yes	542	21.38 ± 3.53		31.71 ± 8.07	
History of miscarriage			0.085		< 0.001
No	1008	21.34 ± 3.55		31.61 ± 8.05	
Yes	15	22.60 ± 2.16		34.33 ± 8.52	

Table 4. Unadjusted and Partial Correlation Coefficients Between Pregnancy Anxiety and Perceived Social Support, Controlling for Demographic and Obstetric Variables

Correlations	Coefficient	P-Value
Adjusted		
Age	-0.218	< 0.001
Education level	-0.221	< 0.001
Job with income	-0.214	< 0.001
Pregnancy history	-0.223	< 0.001
History of miscarriage	-0.223	< 0.001
Unadjusted	-0.214	< 0.001

cultural beliefs about food, physical activity, or childbirth practices may place additional pressure on pregnant women. Although our study did not directly assess these cultural stressors, the association observed highlights the importance of social support as a buffer. Future research should explore these specific cultural factors in more detail.

In the present study, the relationship between education level and occupation with pregnancy anxiety was evaluated. No significant relationship was found between pregnancy anxiety and education level or occupation. In other words, higher education levels, employment, a history of miscarriage, or first pregnancy were associated with increased social support but not with anxiety. Similarly, Rafiee et al. found no relationship between income, occupation, education, and pregnancy anxiety (30). Yu et al. also reported no association between job status and pregnancy anxiety (31). However, other studies such as Gao et al. (32) and Yu et al. (31) reported a significant relationship between education and pregnancy anxiety, which contrasts with our findings. It appears that, due to cultural and geographical differences and societal definitions of women's roles in Iran, education level may not be an anxiety factor for pregnant women, though this warrants further investigation.

There was no significant relationship between pregnancy anxiety and a history of previous pregnancies or miscarriages. In line with the study by Nath et al. (33), our findings indicated that anxiety during pregnancy was higher in mothers without a history of miscarriage, but this difference was not statistically significant. Madhavanprabhakaran et al. found the highest anxiety in women during the third trimester, and those without previous pregnancies reported higher anxiety, which decreased with maternal age (34). Our findings align, showing higher anxiety in first-time mothers and a significant association between older age and lower anxiety.

Our results showed a significant correlation between perceived social support and education level, previous gestational history, and history of miscarriage; with

increasing education, history of miscarriage, or experience of first pregnancy, perceived social support scores increased. Occupation had no correlation with perceived social support. Abdollahpour et al. found no significant relationship between occupation and social support, but education and social support were significantly associated (35). Yu et al. (31) observed no significant relationship between age, occupation, and social support, which aligns with our results. However, studies in specific ethnic groups, such as Rafiee et al. (30) among Turkmen pregnant women, found no association between miscarriage history, previous pregnancy, and social support, which contrasts with our findings — possibly due to cultural differences. In Iranian society, a history of miscarriage and stillbirth may prompt increased attention and support, particularly from the mother's family.

Social and family support are influential factors in anxiety disorders during pregnancy across different societies, regardless of economic development or education level (36). Family contexts vary significantly between cultures. Anxiety levels have been reported as higher in larger families with more children, although large families are now less common in contemporary Iranian society. This decline, along with weakening traditional ties, may reduce family support, which could partially explain our results.

Family structure and religion may also play a role. Gonzalez-Mesa et al. found higher anxiety levels in Muslim women, regardless of geographical origin (37). Historically, family structure and religion have shaped cultures and civilizations, influencing societal perspectives and individual experiences. Religious beliefs and practices, such as prayer, are often considered resources that can enhance resilience (38). A positive correlation between religious engagement and mental or physical health has been reported (39). Some research suggests that religious education increases calmness in pregnant women, and those who participate in such programs demonstrate better resilience to severe anxiety during pregnancy (38).

Differences in perceived support from spouses, household roles, and employment status are also important contributors to anxiety prevalence in different societies. The roles of women, shaped by diverse religious and cultural backgrounds, influence emotions experienced during pregnancy (37).

Our findings of a significant inverse correlation between pregnancy anxiety and perceived social support are consistent with many other studies. Bodaghi et al. (40) also found that anxiety and depression symptoms inversely relate to social support and recommended addressing social support to reduce anxiety in pregnant women. Social support is the most powerful protective factor for coping with stressful situations, including pregnancy and anxiety (41). The hypothesis of the effectiveness of social support on health suggests that social support prevents the negative effects of stress and anxiety by fostering positive, stable, and rewarding emotions, and by reducing negative impacts (42). This is especially beneficial in highly stressful situations, with social support acting as a resource for coping with anxiety and stress. Thus, social support helps women manage stressful events such as childbirth.

Al-Mutawtah et al. (11) noted that even among high-risk pregnancies, social support reduces anxiety. Topal and Terzioglu (43) reported that higher social support decreased anxiety in women undergoing therapeutic miscarriage. Several studies in Iran (30, 40, 44) have emphasized the significant role of social support in reducing anxiety during pregnancy. The present study reinforces the importance of social support in mitigating anxiety by controlling for confounding variables, consistent with previous research. Strengthening social support, especially from families, is recommended as an effective means to reduce anxiety in pregnant women. Comprehensive programs — cultural, social, or care-based — should be implemented to increase social support and control anxiety during pregnancy.

5.1. Conclusions

The findings of this study indicate that higher education levels, first pregnancy, and a history of miscarriage, along with greater social support and increasing age, are associated with lower anxiety during pregnancy. Pregnant mothers with higher social support experience less pregnancy-related anxiety. As social support plays a significant role in reducing anxiety during pregnancy, it is recommended to plan and implement social and cultural programs to increase social support among pregnant women.

5.2. Study Strengths and Limitations

This study has several limitations that may affect the generalizability and depth of its findings. Firstly, the sample was geographically limited to a single health center in Semnan and included only Iranian, Persian-speaking individuals, restricting generalizability to other ethnic or national groups. Secondly, the sample was drawn exclusively from public health centers, excluding pregnant women receiving care at private clinics, which may impact representation, particularly

regarding socioeconomic factors. Additionally, the reliance on partial correlation analysis is a methodological limitation. While this approach controls for linear effects of background variables, it primarily addresses bivariate relationships and does not employ multivariate analyses such as multiple linear regression, which would provide more powerful, simultaneous estimation of the independent contribution of social support in predicting pregnancy anxiety while rigorously adjusting for all potential confounders.

Future studies should address these limitations by conducting multicenter research to better understand national trends in pregnancy-related anxiety and social support. It is also critical for future research to employ multivariate analyses for deeper, simultaneous estimation of the independent contribution of social support and other confounders. Researchers should examine the interactive effects of depression, stress, and anxiety, as well as the role of specific types of social support in reducing anxiety. Finally, the effectiveness of interventions designed to increase social support, particularly for high-anxiety groups, should be explored.

Acknowledgements

We would like to express our sincere gratitude to all the pregnant women who generously participated in this study. Their cooperation was invaluable to our research. We also thank the Ethics Committee of Semnan University of Medical Sciences for their ethical approval. Special thanks to the supervisors and members of the student committee for their guidance and support, and to the staff of the Tadayon Health Center for their contributions. This article is derived from the thesis of the first author, Seyed Vahid Taheri, for the degree of general practitioner.

Footnotes

Authors' Contribution: S. V. T., E. S., and M. M. were the principal investigators of the study. E. S. and M. M. contributed to the concept and design. M. T., E. S., and M. M. revised the manuscript and critically evaluated the intellectual content.

Conflict of Interests Statement: We declare that one of our authors (Majid Mirmohammadkhani) is of the editorial board. The journal confirmed that the author with CoI was excluded from all review processes.

Data Availability: The dataset presented in the study is available on request from the corresponding author during submission or after publication.

Ethical Approval: IR.SEMUMS.REC.1398.254 .

Funding/Support: The study was supported by the Vice Chancellor of Research, Semnan University of Medical Sciences.

Informed Consent: Written informed consent was obtained from those who agreed to participate.

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