



## Original Article

# Social support and its role in the prevention of depression and anxiety during pregnancy in Turkmen women



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### ABSTRACT

**Introduction:** Pregnancy makes significant changes that require various psychological adjustments and are often associated with depression and anxiety. Social support is one of the factors that play an important role in anxiety and depression. The aim of this study was to determine the relationship between social support with depression and anxiety during third trimester pregnancy in Turkmen women.

**Methods:** This cross-sectional study was conducted on 320 pregnant women referred to rural health houses and urban health centers in Aq-Qala County in 2016 based on multistage cluster sampling method. Demographic checklist, the Vaux social support questionnaire, the Vandenberg anxiety during pregnancy questionnaire and the Edinburgh Postnatal Depression Scale were filled for all women. Data were analyzed using SPSS software version 18. Descriptive statistics, Spearman correlation coefficient and Generalized linear regression model were used.

**Results:** The mean age of the pregnant women was  $25.7 \pm 5.5$  years. Majority of the women (97.8%) were housewives and 34.7% had primary education. Social support was inversely correlated with depression and anxiety. Social support had a significant direct relationship with the duration of marriage and age at marriage and a significant inverse relationship with concern about cost of delivery and marital discord ( $P < 0.05$ ). Depression had a significant direct correlation with education and income status. Both depression and anxiety had a significant direct correlation with concern about cost of delivery and a significant inverse correlation with family support ( $P < 0.05$ ).

**Conclusion:** Pregnant mothers with high social support are less likely to experience depression and anxiety. Developing programs to increase family support, reduce marital discord, and concern about the cost of delivery can increase social support and reduce depression and anxiety in Turkmen women.

### Introduction

Pregnancy is both an important and stressful event in every woman's life (1). Studies show women experience major mood disorders during pregnancy. In addition to physiological differences and the various fertility related crises, inaccurate attitudes and beliefs towards women, exposure to different forms of violence and sexual discrimination may also affect women's mental health, especially during pregnancy, and cause depression (2). Studies have shown that women are more susceptible to depression during pregnancy compared to postpartum period and the prevalence of depression in pregnant women is higher than the general population (3).

Depression in a pregnant mother can result in many problems, including increased rate of cesarean section, weight loss, reduced first minute APGAR score, delay in prenatal care, and self-forgetfulness and postpartum depression (4-7). Furthermore, maternal anxiety during pregnancy can lead to increased spontaneous preterm labor and low birth weight, decreased neonatal height and head circumference and lower APGAR score at 1<sup>st</sup> and 5<sup>th</sup> minutes after birth (7-9), as well as increased probability for labor induction and elective cesarean section (10, 11) and decreased infantile growth rates (11).

Social support plays an important role in preventing anxiety and depression during pregnancy (12). Social support is defined as obtaining information, financial support, health advice and emotional support from the social network, on behalf of those an individual is interested in or has valued such as spouse, relatives, friends, and contact with Religious Institutions (13). Social support is a strong force for successful coping with stressful situations and facilitates patient tolerance against problems (14). Although a number of studies show that depressed or anxious pregnant mothers reported less social support (5, 12, 15-17), Abdollahzade Rafi's study did not report a link between pregnancy anxiety and social support (12). Some studies have observed a link between ethnic differences and the level of social support during pregnancy (18) Racial, ethnic, and cultural factors may influence social support for pregnancy. Furthermore, depression and anxiety in pregnancy are considered as risk factors that affect pregnancy outcomes, including successful delivery and delivery of a healthy baby. Therefore, identifying the influencing factors on depression and anxiety for pregnant women seems necessary. Given that there is a gap of information in this regard among Turkmen women, this study was conducted with the aim of determining the relationship between social support with depression and anxiety during third trimester pregnancy in Turkmen women.

## Methods

### Study population

This cross-sectional study was conducted on 320 Turkmen pregnant women in Aq-Qala County, Golestan Province, Iran during the year 2016 based on multistage cluster sampling method. Statistical population included 2487 pregnant women who were registered in rural health houses and urban health centers (primary health care centers) in 2016. Sample size was calculated using the equation for sample size calculation for correlation studies, considering  $Z_{\alpha} = 1.64$ ,  $Z_{\beta} = 0.84$  and  $r = -0.17$  (9). Based on the clustered sampling design and effect size of 1.5, the final sample size was calculated as 320 subjects. Among the 1835 rural pregnant women, 234 women were selected, while out of the 652 urban pregnant women, 83 were selected based on the population proportion of rural and urban residents (with rural predominance).

Sampling was performed by dividing the study population into rural and urban strata. Clusters were identified among the rural health houses and urban health centers in each stratum. Two urban health centers were selected among three urban health centers and among the 54 rural health houses in the rural area, 12 were randomly selected. Then each health center or health house was considered as a cluster and based on the population proportion of pregnant women in each center, pregnant women were randomly selected through medical record number.

### Inclusion and exclusion criteria

All Turkmen pregnant women with gestational age above 24 weeks who referred to the health centers and were registered in the health centers were included in the study. Subjects should not have had acute psychological disorders or mental diseases, high-risk pregnancy, including hypertension, preeclampsia, bleeding or spotting, decrease in fetal active movement, leakage or rupture of membranes, placenta previa, placental abruption, acute weight gain or weight loss, vaginal infections and fever. Women had the right to leave the study at any time they were not willing to complete the study.

### Ethical considerations

The study was approved by the Golestan University of Medical Sciences Research Ethical Committee (code No: 17230593072017) and permission was observed from each health center. A written consent was obtained from all pregnant women. They were not forced to complete the questionnaires if they were not willing to. Questionnaires were filled anonymously and the collected data were kept confidentially.

### Data collection method

Data collection tool included four sections: demographic checklist, the Vaux social support questionnaire, the Vandenberg anxiety during pregnancy questionnaire and the Edinburgh Postnatal Depression Scale (EPDS). Demographic checklist included 15 questions regarding age, education level, occupation, income status, history for pregnancy or delivery related complications.

The Vaux social support questionnaire includes 23 questions in three domains; family, friends and relatives. The family domain includes 8 questions (2, 4, 7, 9, 11, 13, 18 and 22), friends domain includes 8 questions (1, 5, 6, 10, 15, 19 and 23) and relatives domain includes 7 questions (3, 8, 12, 14, 17, 20 and 21). Questions were scored based on the binary answer of the subjects (yes was scored 1 and no was scored zero). The total score was 23. Higher scores indicate higher social support. The reliability of this questionnaire was previously approved in the study by Ebrahimi-ghavam et al. (19).

The Vandenberg anxiety during pregnancy questionnaire was developed by Vandenberg in 1990. The questionnaire includes 34 questions in 5 domains. The questionnaire was revised by Huizink et al. and the number of questions were reduced to 10 and the domains into 3. The domains included "fear of giving birth" (1, 2 and 3), "fear of bearing a handicapped child" (4, 5, 6 and 7) and "concern about one's appearance" (8, 9 and 10). Questions were answered in a 5-point Likert scale ranging from completely agree (score 5) to completely disagree (score 1). The higher the score the higher the anxiety (20). Reliability and validity of the questionnaire was approved in the studies by Huizink et al. and Abdollahzade Rafi et al. (20, 12).

The Edinburgh Postnatal Depression Scale (EPDS) is used to assess depression in pregnancy and postnatal period and includes 10 multiple choice questions. Some questions are rated from low intensity to high intensity (1, 2 and 4) while in other questions rating is from high intensity to low intensity (3, 5, 6, 7, 8, 9 and 10). Each choice is rated from zero to 3 based in the severity of the symptom. The total score is 30. Scores equal or higher than 13 represent pregnancy depression, while scores between 10 and 13 indicate borderline depression status (21, 22). Reliability and validity of the questionnaire was approved by Abdollahzade Rafi et al. and Montazeri et al. (12, 23).

The questionnaires were distributed by two trained researchers between pregnant women in health centers and the completed questionnaires were collected in the same day.

### Statistical analysis

Data were entered in the Statistical Package for Social Sciences (SPSS) software version 18. Mean, standard deviation, frequency and percentage were used for data description. Normality of data was assessed using the Shapiro-Wilk test. As all the three study variables (depression, anxiety and social support) were not normally distributed, the Spearman correlation coefficient was used to assess the linear correlation between the variables

and to assess the effect of independent variables on the outcome, generalized linear regression model was used. As depression and anxiety had positive skewness, the generalized linear regression model with gamma distribution was used for the analysis. As the social support variable had negative skewness, normal distribution with logarithm link function was chosen as the best model based on the goodness of fit assessment.

Ordinal independent variables, including education level and etc., were entered into the model as continuous variables and binary independent variables were entered into the model as zero or one. Regarding the large number of independent variables and the probability of multicollinearity, the variance inflation factor (VIF) was assessed for each independent variable. Age and parity were excluded from the model due to the VIF value larger than 5. The level of statistical significance was set as  $p < 0.05$  for all tests.

**Results**

A total of 320 pregnant women who referred to the Aq-Qala health centers were included in this study. The mean maternal age was  $25.7 \pm 5.5$  years old. Minimum and maximum age of the women was 14 and 42 years old respectively. Majority of

the subjects (97.8%) were housewives and 34.7% had primary education while 37.3% of the subjects had their second pregnancy.

Regression model results indicated that age at marriage, duration of marriage, concern about cost of delivery, and marital discord were among the factors affecting the level of social support ( $P < 0.05$ ). This finding indicated that social support increased with increase in age at marriage or duration of marriage and having concern about the cost of delivery and marital discord significantly reduced the average social support. The four factors including family support, concern about the cost of delivery, education level and income also had a significant effect on depression considering the effect of other variables ( $P < 0.05$ ), so that depression level decreases with the increase in family support concern about the cost of delivery lead to a significant increase in the level of depression and increase in the level of education or income was associated with increased average depression. Furthermore, family support and concern about the cost of delivery also had a significant effect on the level of anxiety considering the effect of other variables ( $P < 0.05$ ). This finding indicated that the anxiety level decreases with the increase in family support and having concern about the cost of delivery increased the level of anxiety (Table 1).

**Table 1.** Generalized linear regression models results and the mean score of the social support, anxiety and depression based on the variables

Variable		Total social support			Depression			Anxiety			
		B*	P-value		B	P-value	B	P-value			
Family support					-0.080	0.008					
Friend's support					-0.024	0.292					
Relative's support					-0.028	0.359					
Age at pregnancy		-0.003	0.085		0.004	0.581		0.002		0.549	
Age at marriage		0.006	0.006		0.001	0.945		-0.002		0.688	
Duration of marriage		0.006	0.039		0.014	0.291		0.000		0.942	
Variable		Number (Percentage)	Mean	B	P-value	Mean	B	P-value	Mean	B	P-value
Place of residence	Urban	95 (29.7)	18.8	-0.004	0.844	9.4	0.039	0.591	25.4	0.051	0.164
	Rural	225 (70.3)	19.5			7.7			23.5		
Education Level	Primary school	111 (34.7)	19.6	-0.003	0.739	7.1	0.092	0.011	23.4	0.018	0.306
	Secondary school	97 (30.3)	18.8			7.8			24.2		
	High school	79 (24.7)	19.1			8.8			24.6		
	University	31 (9.7)	20.0			8.1			24.2		
Occupation	House wife	313 (97.8)	19.2	-0.031	0.565	8.2	0.192	0.417	24.1	0.119	0.291
	Employed	7 (2/2)	21.2			6.7			22.0		
Husband's education level	Primary school	84 (26.3)	19.4	-0.012	0.188	7.2	0.023	0.537	23.7	-0.007	0.689
	Secondary school	131 (40.9)	19.3			8.4			23.9		
	High school	71 (22.2)	19.5			9.0			24.6		
	University	33 (10.3)	18.5			9.3			25.1		
Income status	Very good	9 (2.8)	20.1	0.003	0.787	5.3	0.120	0.027	25.8	-0.016	0.547
	Good	153 (47.8)	19.3			7.4			23.5		
	Average	127 (39.7)	19.3			9.0			24.2		
	Weak	30 (9.4)	18.7			9.9			25.6		
Concern about cost of delivery	Yes	115 (35.9)	18.6	-0.057	0.003	9.6	0.183	0.021	25.8	0.097	0.013
	No	205 (64.1)	19.7			6.8			23.1		
Marital discord	Yes	8 (2.5)	18.0	-0.130	0.036	11.8	0.085	0.694	30.2	0.139	0.208
	No	312 (97/5)	19.6			7.6			22.8		
Bad events in life	Yes	33 (10.3)	19.2	-0.018	0.523	9.5	0.152	0.162	25.2	0.037	0.506
	No	287 (89/7)	19.3			7.5			23.9		

Marriage with consent	Yes	308 (96.3)	19.3	-0.048	0.253	7.8	0.176	0.329	24.1	0.029	0.735
	No	12 (3.8)	19.8			6.5			23.5		
Unintended pregnancy	No	271 (84.7)	19.4	0.006	0.781	7.4	-0.010	0.913	23.9	-0.029	0.530
	Yes	49 (15.3)	18.8			9.4			25.0		
Number of children	0	115 (35.9)	18.6	-0.003	0.829	8.9	0.038	0.568	25.7	-0.037	0.263
	1	125 (39.1)	19.5			8.4			23.0		
	2	67 (20.9)	20.0			6.7			23.2		
	3≤	13 (4.1)	20.1			8.3			22.6		
Stillbirth history	0	310 (96.9)	19.3	-0.026	0.434	7.8	0.034	0.814	24.1	0.035	0.619
	1	7 (2.2)	20.1			6.8			24.2		
	2	3 (0.9)	18.6			7.0			23.3		
Abortion history	0	272 (85.0)	19.3	0.001	0.958	8.1	-0.010	0.905	23.9	-0.027	0.525
	1	45 (14.1)	19.0			8.4			24.0		
	2≤	3 (0.9)	21.0			5.6			21.3		
Having another wife by the husband	Yes	6 (1.9)	20.5	0.055	0.421	3.5	-0.172	0.529	23.0	0.001	0.994
	No	314 (98.1)	19.5			7.8			23.0		
Being a second wife	No	313 (97.8)	19.5	-0.108	0.103	7.8	0.309	0.208	23.0	-0.074	0.549
	Yes	7 (2.2)	18.6			5.6			22.6		

\* Regression coefficient

Total social support level was  $19.3 \pm 3.08$ . Considering the score range (0-23), pregnant women had a relatively high level of social support. Furthermore, regarding the score range for anxiety questionnaire, subjects had a moderate

anxiety level. Considering the cut-off value of 13 for depression, 67 (20.9%) subjects had depression, 47 (14.7%) were at borderline depression state and 206 (64.4%) did not have depression (Table 2).

**Table 2.** Total social support score and its domains, depression and anxiety among pregnant women

Variables	Domain	Mean ± SD
Social support	Total social support (0-23)	19.3 ± 3.08
	Family support (0-8)	6.8 ± 1.3
	Friend's support (0-8)	6.9 ± 1.7
	Relative's support (0-7)	5.6 ± 1.15
Depression	Total depression (0-30)	8.2 ± 5.1
Anxiety	Total anxiety (10-50)	24.0 ± 6.8
	Fear of giving birth (3-15)	8.2 ± 3.5
	Fear of bearing a handicapped child (4-20)	9.0 ± 2.8
	Concern about one's appearance (3-15)	6.8 ± 3.5

Table 3 showed a significant inverse linear relationship between depression and total social support score and its domains ( $P < 0.05$ ). Similarly, a significant inverse linear relationship was observed between total anxiety and total social support score and its components except for relative's support. Fear of giving birth had a significant inverse linear relationship with total social support score, friend's support, and relative's support ( $P < 0.001$ ), this finding indicated that fear of giving birth is reduced with the increase in any of the mentioned variables. Fear of

bearing a handicapped child was only significantly correlated with family support ( $P < 0.05$ ), indicated that the fear of bearing a handicapped child significantly reduced with the increase in family support. Concern about one's appearance has a significant inverse linear relationship with total social support score, family support, and friend's support ( $P < 0.05$ ), this finding indicated that increase in any of the mentioned variables was associated with a significant reduction in concern about one's appearance.

**Table 3.** Relationship between social support with depression and anxiety during pregnancy

Variables	Total social support		Family support		Friend's support		Relative's support	
	Spearman correlation coefficient	P-value						
Depression	-0.271	<0.001	-0.207	<0.001	-0.238	<0.001	-0.164	0.003
Total Anxiety	-0.198	<0.001	-0.186	<0.001	-0.170	0.002	-0.088	0.117
Fear of giving birth	-0.223	<0.001	-0.064	0.253	-0.218	<0.001	-0.187	<0.001
Fear of bearing a handicapped child	-0.073	0.191	-0.152	0.007	-0.075	0.181	0.018	0.752
Concern about one's appearance	-0.177	0.002	-0.176	0.002	-0.109	0.051	-0.071	0.204

**Discussion**

The results of this study showed an inverse relationship between total social support and depression. Previous studies in Iran also

reported a significant inverse relationship between social support and depression (12, 24), which was in line with the results of the present study. A study conducted in Southwestern Ethiopia reported that women who reported high and moderate social

support during pregnancy had significantly fewer depressive symptoms (25). In studies conducted in Germany, the United States, Malawi, Pakistan, and Turkey, social support was regarded as an influencing factor for depression in pregnant women (15, 16, 26-29). Social support plays a key role in the manifestation of depressive symptoms in pregnant women (26). Social support seems to act as a protector in exposure to stress, and prevents depression or decreases the severity of psychological symptoms.

The present study showed an inverse relationship between total social support score and anxiety. In contrast, Abdollahzade Rafi et al. did not find a significant relationship between social support and anxiety among pregnant mothers (12), despite the similarity of questionnaires between our study and the study by Abdollahzade Rafi et al., the difference in the findings may be due to the cultural and ethnic differences in the two communities. Other studies conducted in Iran, the United States and Pakistan, reported that pregnant women who received more social support were less anxious (16, 17, 30), these findings were in consistent with the findings of the present study. Previous studies showed that pregnant women with more social support have a higher ability to cope with stress (14). Social support positively and directly affects people's health in the presence or absence of stress, and maintains individuals' mental health by reducing or balancing the undesirable effects of stress in life (1, 29).

In this study, pregnant mothers who had low family support and were concerned about the cost of delivery had higher levels of depression and anxiety compared to those with better social support. Other studies conducted in Iran have reported a relationship between depression in pregnant women with support from family and relatives and concern about the cost of delivery (31). In Bangladesh, factors related to anxiety in pregnancy included poor economic status and lack of social support (32). Studies in the United States also showed that depressed pregnant women received less family support (5, 33, 34).

The present study showed that women with higher education level and better income status had more severe depression. These findings indicated higher levels of expectation from educated and well-paid women in Turkmen ethnicity. Whereas other studies showed that women with lower education (29, 35, 36) and socioeconomic status (24, 35, 36) were more depressed. One reasons for this difference may be cultural differences between the societies in our study and the previous studies. Studies have shown that socioeconomic factors can be effective in depression of pregnant women and indicate the need to consider these factors in the care of pregnant women.

One of the strengths of this study was the use of validated social support, depression and anxiety questionnaires, as well as the use of two-stage cluster sampling method that covered all urban and rural health centers in the county. One of the disadvantages of this study was the cross-sectional study method because couldn't show strong evidence for the relationship between social support with depression and anxiety. Cohort studies are recommended in order to further assess the relationship between social support with depression and anxiety among pregnant women.

## Conclusion

In Turkmen women, duration of marriage and the age at marriage had a direct relationship with social support and marital discrepancy had an inverse relationship with social support. Concern about the cost of delivery was inversely correlated with social support and had direct relationship with depression and

anxiety. The education level and income status of pregnant women were also inversely related to depression. By examining the simultaneous effect of all domains of social support, the only domain that had an impact on anxiety and depression was family support. According to the estimated coefficients, a decrease in marital discord resulted in an increase in social support and a decrease in the concern about the cost of delivery, which led to a greater reduction in anxiety and stress. Therefore, it can be said that developing programs to reduce marital discord and concern about the cost of delivery can lead to increased social support and decrease depression and anxiety in Turkmen women. It is also suggested that policies be implemented to increase family support, as an effective factor in reducing depression and anxiety in Turkmen pregnant women.

## Ethical disclosure

The study was approved by the Golestan University of Medical Sciences Research Ethical Committee (code No: 17230593072017) and permission was observed from each health center. A written consent was obtained from all pregnant women.

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## Author contributions

Study concept and design: NR, NS; acquisition of data: FE, NR; analysis and interpretation of data: NS, NR; drafting of the manuscript: NR, NS, FE and MAR; critical revision of the manuscript for important intellectual content: NR, M AR, HR and NS.

## Conflict of interest

No conflict of interest has been reported by the authors.

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