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Perceived Social Support and Stress among Pregnant Women at Health Centers of Iran- Tabriz

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ABSTRACT

Introduction: Social support is considered the interaction between the person and environment, which reduces stressors, covers the effects of stress and consequently protects individuals from the harmful effects of stressful situations. This study aimed to determine social support in pregnant women and its relationship with the rate of pregnant women's perceived stress at health centers of Tabriz in 2012-13.

Methods: This cross–sectional study was carried out on 450 pregnant women selected through cluster sampling. Data collection tools consisted of a demographic questionnaire, interpersonal support evaluation list (ISEL) and perceived stress questionnaire (PSS) that were completed in an interview. The range of obtainable score for social support and perceived stress was 0-90 and 0-30, respectively. Descriptive and analytical statistics including Pearson and Independent t-test were used for analyzing the data.

Results: The mean score of social support and perceived stress in pregnant women was 96.6 (14.6), and 11.5 (5.5), respectively .The women with favorable social support had significantly less stress than the women with unfavorable social support.

Conclusion: The study finding showed that the rate of social support in highly stressful women is significantly less than low-stress mothers. Therefore, considering adverse effects of the stress on pregnancy outcomes, some strategies should be designed and implemented in order to strengthen and improve the social support for pregnant women so that it can reduce the rate of pregnant women's stress.

Introduction

Social support refers to the emotional and material resources that are provided to an individual through interpersonal communications.[1] Social support is an exchange of resources between at least two individuals; resources perceived by the provider or the recipient to be intended to promote the health of the recipient.[2]

Perception of social support during times of stress may have a positive impact on health by helping alter perceptions of threat, lower anxiety, and increase coping ability. Additionally, cognitive aspects of social support may serve as a buffer, which may attenuate physiological reactivity to stress.[3]

Pregnancy is one of the critical situations for women in which the need for social support is felt more than ever and requires precise and effective attention. It significantly affects some women's life with stress while others do not get affected even when they encounter the most severe and dangerous conditions.[4,5]

For most women, pregnancy is a time of positive expectation, but may also be a time for psychological and physiological challenges. It is accompanied by hormonal changes and can represent a time of increased vulnerability for the onset or return of depression.[6] However, the high prevalence of maternal depression in poor countries may be related to women's exposure to several depression-related risk factors, including

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poverty,[7-9] low social support,[9,10] domestic violence,[11-13]HIV/AIDS[14,15] and reproductive health outcomes and behaviors such as high parity, unwanted pregnancy, unsafe abortion, infertility, and pregnancy complications.[16-18]

In pregnancy, maternal stress (i.e., perceived stress, depressive symptoms, racial discrimination, stressful life events, and pregnancy-specific anxiety) has been associated with preterm birth, low birth weight, risk of gestational hypertension, and adverse health and behavioral outcomes.[19–22]

Some researchers consider stress as a fundamental part of mental pressure during pregnancy and an important factor for accelerating the biochemical changes of mother's stressed body. These researchers found a close relationship between mother's stress during pregnancy and some negative outcomes of birth.[23,24]

Evidence from population-based epidemiological and clinical studies suggests that after accounting for the effects of other established socio-demographic, obstetric and behavioral risk factors, women reporting higher levels of psychological stress during pregnancy are at significantly increased risk of preterm birth.[25]

Other researchers such as a Tinsley et al., studied the relationship between negative events during pregnancy and birth outcomes and found that stress at the beginning of pregnancy leads to disorders during delivery.[26]

Mental health specialists believe that individual's reaction to stressful events and also the amount of stress caused by the events is influenced by different individual and social factors. Studies have shown that one of the most basic effective factors involved in reducing stress during pregnancy is social support. Undesirable social support of pregnant women has different adverse effects on mothers and their fetus's health.[27,28] In some studies, maternal social support before and during the pregnancy has been stated as a potential factor in reducing stress. Social support can be provided by husband, consultant or a reliable family member or friends before, during and after the pregnancy. The programs designed to make social networks at pregnancy for pregnant women may reduce the complications of pregnancy stress.[29,30]

Considering adverse effects of stress on pregnancy outcomes and also lack of a study in this field in Iran, this study was conducted to determine social support status during pregnancy and its relationship with perceived stress.

Materials and methods

This study was a cross–sectional study on pregnant women referred to health centers of Tabriz University of Medical Sciences, from October 2012 to May 2013. The number of samples was calculated using STATA software (version 9.2) according to Campos et al.,[31] study and considering d=0.05 around the mean, m=1.15, SD=0.4, α=0.05. Considering design effect equal to 2 and because of cluster sampling, the sample size was calculated 370persons that was increased to 450 persons considering the probable loss.

After getting permission from Ethics Committee of Tabriz University of Medical Sciences, the volunteer pregnant women who had all the criteria were invited to participate in this study. Inclusion criteria for this study included pregnancy of 26-36 gestational week covered by selected centers, having reading and writing literacy, self- reported good general health, age between 18 and 35 years, not tobacco or substance use, no history of divorce and separation, not having the jobs which require night shifts, singleton pregnancy, no history of infertility, not having fetal abnormalities and intrauterine growth retardation during the study and without obstetrics Problems (hypertension, bleeding, Gestational, diabetes,…). Cluster sampling method was used in this study; first, 10 centers were randomly selected from among 40 centers in Tabriz, and then in each

selected center and proportionate to the number of clients of each center, those pregnant women who volunteered to enter the study were invited and written informed consent was obtained from the cases who met the inclusion criteria.

Three questionnaires were used in order to collect the information and were completed through an interview by the researcher.

1-The demographics questionnaire: It was a researcher-made 19-Item questionnaire including client's and her husband's age and job, the level of client's and her husband's education, number of pregnancies, gestational age, infant gender and obstetrics risks (bleeding, hypertension, gestational diabetes…).

2-Interpersonal Support Evaluation List (ISEL): It includes 30 questions about the rate of social support received by mother from family, friends and community members. The questions have four options which include definitely false, may be probably false, probably true and definitely true.

Since a specific cut-off point has not been determined for ISEL in previous studies, we considered 50% of the score in order to classify pregnant mothers into two groups of favorable and unfavorable social support, so that the mothers who had earned the score below or equal 45 from the total score of 90 were classified as having unfavorable social support, and those earning the score higher than 45 were classified as having favorable social support.

3-Perceived Stress Scale (pass): this questionnaire was developed by Kohen et al., in 1983 and has three versions with 4, 10, and 14 items used for evaluating perceived general stress in the last month.

It evaluates the thoughts and feelings about stressful events, controlling, overcoming, and coping with the experienced stresses.

This scale also investigates the risk factors in behavioral disorders and shows the process of stressful relations.

Ten-item PSS was used in this study. This scale also investigates the risk factors in behavioral disorders and shows the process of stressful relations. A five-point Likert style answer is used in this questionnaire as "never, almost never, sometimes, fairly often and very often". There are 6 negative questions (a minimum score of zero and a maximum score of 4 was given to options of "never" and "very often", respectively), and 4 positive questions (a minimum score of 4 and a maximum score of 0 were given to options of "never" and "very often", respectively).

Content validity and face validity were used to determine the questionnaire validity. The reliability was determined by repeatability (ICC=Intra-class correlation) and internal consistency (cronbach's alpha coefficient) through test and retest on 30 persons. ICC (95% confidence interval) and Cronbach's alpha were 0.86 (0.71 to 0.94), and 0.86 for social support and 0.86 (0.70 to 0.93) and 0.84 for perceived stress, respectively descriptive statistics including the frequency, mean and standard deviation were used to describe ISEL, demographics and PSS.

Pearson's test was used to determine the relationship between social support of mother and perceived stress and independent t-test was used in order to determine the difference between stress rate and social support.

The data were analyzed using SPSS, version13. To compare any of the questions of perceived stress and social support status, Mann Whitney test was used.

Results

The mean (standard deviation) of the participants' age and gestational age was 35 (26.5) years, and 1.1 (3.86) weeks, respectively. The mean (SD) of body mass lndex (BMI) and pregnancy interval during the study was 25.6 (4.7) kg/ m^2 and 5.7 (3.2) years, respectively.

35% of the participants had elementary education, 92.8% of the pregnant women were housewife, almost 2/3 of the pregnant women's husbands had elementary or

Secondary school education and half of them (50%) were self-employed. Of the pregnant women, 97% did not have pregnancy problems .The pregnancy intervals of more than ¾ of the participants (76%) was more than 5 years. Half of them (50%) had normal body mass index (BMI) (Table1).

The mean of favorable social support score was 69.6 (14.6). Fifty people (11.1%) had unfavorable social support. The mean (SD) of the perceived stress was 11.5 (5.5).

Comparing of two groups according to independent t-test showed that, there was a significant difference between two groups (with favorable and unfavorable social support) of pregnant women.

The rate of stress in the women with favorable social support was significantly less than those with unfavorable social support (Table 2).

In the review of each questioning PSS, there was also a significant difference between the two groups of pregnant women with desirable and undesirable social support (Table 3).

Discussion

The results of this study showed that pregnant women had relatively favorable social support. Of the study population, 11.1% had unfavorable social support. The rate of stress in mothers with less social support was significantly more than others.

The mean (SD) of the favorable social support score was 69.6 (14.6) in pregnant women. This indicates that their perceived social support is relatively high. The mean of social support score in the present study is higher than that in Collins, et al.,[32] study on Canadian pregnant women this can be related to cultural differences between two communities. It seems women in our country get more social support than others. But The mean score in this study is less than that in Hondnett et al., study on Latin American and European, and–American pregnant women.[33] Because this study was about "Support during pregnancy for women at increased risk of low birthweight babies",while in this study women without obstetric problems are studied.

Social support acts as a defense against stressful events of life and provides necessary coping skills to deal with the stress.[8]

The mean score of perceived stress in pregnant women was 11.5 (5.5). This mean score is higher than that in Slykerman et al., study in New Zealand.[34] This difference may be related to differences in sample size in two study.

Also the mean score of perceived stress in this study is less than that in Collins et al., study on American women.[32] This difference may be due to sample size. Because the sample size in Collins et al., study (129 women) was lower than this study (450 women).

Mother's stresses during pregnancy leads to anxiety and mental problems in their infant in the future. Furthermore, stressful pregnancy causes complications for the fetus.[33] Chemical substances released from mother's brain in response to stress have direct effects on fetal brain which is in developing. This effects maybe more at the beginning of pregnancy in which the protective barrier between mother and fetus has not been completed yet.[7,30]

In this research, there was a significant negative correlation between social support and the rate of perceived stress. findings of this study is compatible with the findings of previous studies such as Monroe et al., study on American pregnant women and Holahan and Moos study on pregnant women of Texas, the USA.[35,36]

Davis et al., study on American pregnant women and Aranda et al., study on Mexican pregnant women demonstrate the protective effect of social support at the time of stress. It also prevents the appearance of stress disorders and depression or moderate the severity of psychological symptoms.[37,38]

Logsdon et al., reported that 50% of women before childbirth and 1/3 of them

Table 1. Demographic characteristics of couples by sex

Variable	N (%)	Variable	N (%)
Number of pregnancies		**Age** (years)	
1	237 (52.7)	Less than 25	165(36.6)
2	145 (32.2)	25-29	138 (30.6)
3 and more	68 (15.1)	29 or more	147 (32.8)
mean (SD)	1.7 (0.9)	mean (SD)	26.5 (5.1)
Occupation		**Education**	
housewife	418(92.8)	Primary school	157 (34.9)
working at home	21(4.7)	Secondary school	139(30.9)
work outside the home	11(2.5)	Diploma	128(28.4)
		University	26 (5.8)
Spouse occupation		**Spouse Education**	
Unemployed	16 (3.5)	Primary school	141 (31.3)
Labour	131(29.1)	Secondary school	140(31.1)
employees	58(12.8)	Diploma	125(27.8)
self-employed	245(54.6)	University	44(9.8)
Birth spacing (years)		**BMI** (kg/m²)*	
less than 3	28(6.2)	Underweight	36(8)
3 to 5	88(19.6)	Normal	227(50.4)
More than 5	334(74.2)	Overweight	84(18)
mean (SD)	5.7(3.2)	Obese	103(23.6)
		mean (SD)	25.6(4.7)
Pregnancy problems**			
yes	13(2.9)		
no	437(97.1)		

*BMI (kg / m²) were measured on weight and height and BMI were classified into 4 groups, less than 19.8, 19.8-26, 27-29and greater than or equal to 29. ** Pregnancy Problems including minor problems except problems mentioned in the inclusion criteria

Table 2. Relationship between social support and perceived stress in pregnant women referred to health centers of Tabriz

Variable	Perceived Stress Mean (SD)¥
Social support	
Favorable	10.7 (4.9)
Unfavorable	17.5 (5.8)
The score of perceived stress	11.5 (5.5)€
Comparing the two groups with favorable and unfavorable social support	6.7 (p<0.001)*
Relationship between social support and perceived stress	r=-0.5, (p<0.001)**

¥ Standard deviation, € Mean difference and Standard deviation, *Mean difference and P-value according to independent t-test, ** According to Pearson's test

Table 3. Perceived Stress in pregnancy mother with social support favorable and unfavorable (n=450)

Questions	Never (%)	Almost never (%)	Some times (%)	Fairly often (%)	Very often (%)	P**
In the last month, how often have you been upset because of something that happened unexpectedly?						
Favorable	21	50	20.7	7	1.2	<0.001
Unfavorable	7.6	31.4	44.2	15.4	3.2	
In the last month, how often have you felt that you were unable to control the important things in your life?						
Favorable	26	50	20	1.9	2.1	0.003
Unfavorable	18.6	32.5	39.5	9.4	-	
In the last month, how often have you felt nervous and "stressed"?						
Favorable	8.7	45.6	40.9	4	0.9	0.005
Unfavorable	6.6	17.8	64.5	6.7	4.4	
In the last month, how often have you felt confident about your ability to handle your personal problems?*						
Favorable	48.9	38.8	8.2	2.2	1.9	<0.001
Unfavorable	8.8	48.8	22.3	11.2	8.9	
In the last month, how often have you felt that things were going your way?*						
Favorable	40.3	43.8	12.8	1.8	1.3	<0.001
Unfavorable	11	37.8	40	3.1	8.1	
In the last month, how often have you found that you could not cope with all the things that you had to do?						
Favorable	14	70	11.2	2.9	1.9	<0.001
Unfavorable	6.6	37.7	33.3	17.7	4.7	
In the last month, how often have you been able to control irritations in your life?*						
Favorable	45	37.2	8.3	8	1.5	<0.001
Unfavorable	6.6	53.3	31.1	6.8	2.2	
In the last month, how often have you felt that you were on top of things?*						
Favorable	25.3	17.5	13.3	17.6	26.3	<0.001
Unfavorable	2.2	4.6	13.5	20	60	
In the last month, how often have you been angered because of things that were outside of your control?						
Favorable	8.4	68	19	2.2	2.4	<0.001
Unfavorable	13.3	28.8	44.5	6.7	6.7	
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?						
Favorable	16.2	54.9	25.5	2.5	0.9	0.002
Unfavorable	17.7	28.9	40	8.9	4.5	

* These questions are positive and others are negative**independent t-test

after childbirth are exposed to anxiety disorders and depression. Appropriate social support for pregnant mother, first by her husband and then by the society, can reduce the risk of postpartum depression and stress by 40%.[39]

One of the limitations of the present study is that it was cross-sectional so a causal relationship cannot be established. It is recommended that further studies be conducted to evaluate social support of mothers during pregnancy and even before conception to obtain more precise results about the relationship between social support and perceived stress.

Conclusion

The findings of the study showed that the rate of social support for pregnant women was relatively high and there was a negative correlation between the rate of social support and perceived stress. Considering that, mothers with undesirable social support may experience more stress in their life and consequently, the risk of mental disorders and undesirable pregnancy and childbirth outcomes increases in these mothers, therefore, it seems that empowerment of the individuals in adulthood in the field of interpersonal communication skills can increase the necessary abilities in achieving social resources needed for maintaining mental health and resisting against the stressful life events. Furthermore, activating the support system (especially, pregnant mother's husband and his family) may have excessive influence on reducing pregnant mother's mental disorders.

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Ethical issues

None to be declared.

Conflict of interest

The authors declare no conflict of interest in this study.

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