ORIGINAL PAPER

Relationship Between Marital Quality, Social Support and Mental Health During Pregnancy

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Abstract

The aim of this study was to investigate the relationship between marital quality and mental health during pregnancy. This cross-sectional study was conducted on 300 Iranian pregnant women. The ENRICH marital satisfaction subscales, levels of domestic violence, perceived social support, as well as depression and anxiety levels were assessed using a questionnaire. AMOS path analysis was used to explore the causal relationship and the mediating effect of social support among the variables of marital quality subscales and mental health. The results showed that, adjusted for age, the history of infertility and level of anxiety were related to marital satisfaction, marital relationships and level of depression which were related to the level of domestic violence. Sexual satisfaction and the level of perceived social support had a mediating role in such relationships. The study confirmed that marital quality is an important predictor of mental health. Improving the marital quality may lead to improvement in mental health.

Keywords Mental health · Pregnancy · Marital communication · Marital satisfaction · Social support

Introduction

Mental disorders are common problems (Milgrom et al. 2008; Alipour et al. 2012) and associated with poor maternal and fetal consequences, such as increased risk of preeclampsia (Alder et al. 2007), preterm birth, low birth weight (Ibanez et al. 2012), and postpartum depression (Alipour et al. 2012). Pregnancy and transition to the parental role cause biological, psychological and social changes in women (Gourounti et al. 2012) due to creation of new relationships between couples (Lederman 1990).

Parents are often faced with new challenges in this period. Therefore, during pregnancy and after childbirth, they are vulnerable to mental problems (Smith et al. 2011). It is believed that multiple socioeconomic and biological factors affect mental health during pregnancy (Fisher et al. 2012). However, several studies have shown that marital satisfaction has a relationship with mental health (Cummings and O'Reilly 1997; Ryan et al. 2005; Lancaster et al. 2010).

Provision of support for women continuing pregnancy can in some communities prevent mental issues. In the Iranian society, the motherhood roles are considered the most important of the women's gender roles which influence the quality of marital life and women's mental health (Aliakbaridehkordi et al. 2012). In addition, formation of new roles and tasks for the couple during pregnancy may affect the relationship between mental health and couple relationships.

Further, social support is related to marital relationships and has an impact on women's mental health (Qadir et al. 2013). However, there is no clear consensus as to how a combination of marital relations and social support contributes to the influence of women's mental health during pregnancy. Both social support and marital satisfaction are associated and may be substantial mediators in the mental health

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link. Therefore, the aim of this study was to test an assumed structural model for a better understanding of whether social support mediates the relationships between marital quality and mental health in pregnant women.

Methods

This cross-sectional study was performed from September 2015 to January 2016 on Iranian pregnant women refereed to healthcare centers in Isfahan, Iran. Our samples were selected using a random method on obtaining the approval of the Ethics Committee affiliated to Isfahan University of Medical Sciences. According to Pokok's statistical formula, the sample size was so designed as to include 300 women, and to possess a testing power of 80% to assess the association between a set of variables. The minimum required sample size was estimated considering a 95% confidence level. P1 (58.7) is the estimated proportion of marital conflict in women with psychological disorders and P2 (41.3) is the estimated proportion of marital conflict in women without psychological disorders (Forouzandeh et al. 2003).

The study participants were recruited from pregnant women under prenatal health care. A stratified cluster sampling was performed on a random selection of health care centers and pregnant women based on their health file numbers. The women so selected were given two blanks to complete: Written Informed Consent and Demographic Characteristics. The variables were marital satisfaction, marital relationships, conflict resolution, sexual satisfaction, and domestic violence related to marital quality, depression, and anxiety related to mental health. Furthermore, the perceived social support was treated as the mediator variable.

Measures

Marital Quality

The Evaluation and Nurturing Relationship Issues, Communication and Happiness) ENRICH (questionnaire was used to measure marital communication, marital relationships, conflict resolution and sexual satisfaction. The tool comprised a five-point Likert scale for reactions of "strongly disagree (0)" to "strongly agree (4)" with 10 items and a score range of 0–40. A higher score indicated a higher marital quality (Fowers and Olson 1989). Furthermore, Domestic Violence was assessed using a researcher-made questionnaire. The initial questionnaire was developed using an international literature review of related articles and books on the Iranian social and cultural context. The validity of this instrument was confirmed by six experts. It consisted of five questions such as "My spouse hurts me with verbal insults

and disrespect". The questionnaire was designed with a five-point Likert scale for reactions from never (0) to very much (4) with a score range of 0–20. The internal consistency of the questionnaire was assessed by calculating the Cronbach's alpha coefficient reported as being 0.89. Moreover, the test–retest reliability method showed a calculated correlation coefficient of 0.9.

Perceived Social Support

The level of perceived social support was assessed using a multidimensional scale of perceived social support from family, friends and other important people (Zimet et al. 1990; Canty-Mitchell and Zimet 2000). The validity and reliability of the multidimensional scale of perceived social support for use on the Iranian healthy group has been reported as having an internal consistency of 0.92 (Bagherian-Sararoudi et al. 2013). It comprised 12 items (with a score range of 0–72) measuring the perceived social support on three dimensions: Family, friends and spouse on a seven-point Likert scale for reactions (0–6) from "strongly disagree (0)" to "strongly agree (6)". A pilot study was conducted on 20 eligible pregnant women with an internal consistency reliability assessment showing a Cronbach's alpha of 0.81 on the depression subscale and 0.78 on the anxiety subscale.

Mental Health

Questions on the subscales of anxiety and depression from the general health questionnaire were used to assess the women's mental health (Goldberg et al. 1997). Each of these subscales was composed of 7 items with a four-point Likert scale for reactions (0–3) of "Never (0)", "Usual (1)", "more than usual (2)", and "much more than usual (3)" with a range of 0 to 21 scores. The cut-off point in each subscale was a score of 6 and higher indicating pathologic symptoms. To assess the reliability of the questionnaire, a pilot study was performed on 20 eligible pregnant women with an internal consistency reliability showing a Cronbach's alpha of 0.81 on the depression subscale and 0.78 on the anxiety subscale.

Data Analysis

Descriptive and inferential statistics SPSS v.19 for Windows was used for data analysis. The relationship between the marital quality-related variables, perceived social support on the depression and anxiety levels using path analysis with AMOS, used the maximum standard likelihood estimation. The relationship between the marital quality subscales and social support were imported as determining factors for anxiety and depression levels to the linear regression. The conceptual model was designed based on the results of a multivariate linear regression test.

Table 1 Demographics and obstetrics characteristics of participants (n = 296)

	Mean (SD) or number (%)
Age: Mean (SD)	29.2 (4.8)
Educational level: N (%)	
High school or less	148 (50.3%)
More than high school	146 (49.7%)
Employment status: N (%)	
Employed	78 (26.4%)
Economic level: N (%)	
Low	15 (5.1%)
Medium	216 (73.0%)
High	57 (19.3%)
History of infertility: N (%)	15 (5.3%)

N number, *SD* standard deviation

Results

Of the women population, 296 i.e. a proportion of 98.8, completed the questionnaires. Four of the questionnaires were excluded due to incomplete data. The demographic characteristics of the women are presented in Table 1. A multivariate linear regression test was used to assess the contribution of each variable of marital quality for prediction of anxiety and depression. The results adjusted for age, history of infertility, and education indicated that the level of anxiety and depression were dependent variables, with each unit of change in the score of marital satisfaction and marital communication having a great effect on the variance of anxiety. In addition, the levels of domestic violence and sexual satisfaction as predictors had a significant effect on depression. Conflict resolution and perceived social support failed to independently and significantly predict the anxiety and depression during pregnancy, and therefore, were excluded from the model (Table 2).

Structural Equation Model

The overall structural equation model (Fig. 1) represented a good fit for the model indicating a relationship between marital life satisfaction, communication, conflict resolution, sexual relationships, social support, violence, anxiety, and depression in pregnant women (TLI = 0.83, CFI = 0.948, RMSEA = 0.14), a confidence interval of 95% 0.11 to 0.17). According to the results of the AMOS analysis, marital satisfaction was related to the level of social support and anxiety in pregnant women which was negatively related to marital satisfaction. In addition, the level of depression had a significant inverse correlation with domestic violence, satisfaction with marital relationships and sexual satisfaction (Table 3).

Table 2 Association between marital quality and mental health

	Anxiety									Depression								
	Model 1			Model 2			Model 3			Model 1			Model 2			Model 3		
R²	0.03			0.05			0.16			0.11			0.24			0.52		
F for change in R	2.23			5.41*			8.73***			1.00			11.63**			14.78***		
Variable	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Age	0.06	0.06	0.07	0.05	0.06	0.06	0.05	0.05	0.07	0.01	0.05	0.02	0.01	0.05	0.01	0.01	0.04	0.01
Education level	0.17	0.20	0.05	0.24	0.20	0.07	0.52	0.20	0.16	-0.20	0.17	-0.08	-0.11	0.17	-0.04	0.16	0.16	0.06
Infertility	2.5*	1.27	0.13*	2.5*	1.26	0.13*	2.12	1.18	0.10	1.36	1.09	0.08	1.33	1.07	0.08	1.00	0.95	0.06
Social support				-0.04	0.02	-0.15*	-0.09	0.02	-0.07				-0.05	0.01	-0.20	-0.03	0.01	-0.12
Marital satisfaction							-0.12	0.05	-0.14*							-0.14**	0.05	-0.15**
Communication							0.18**	0.07	0.18**							0.14**	0.05	0.17**
Conflict resolution							0.12	0.07	0.12							0.09	0.05	0.10
Sexual satisfaction							0.01	0.07	0.01							-0.14**	0.06	-0.16**
Domestic violence							0.21**	0.07	0.02**							0.25***	0.06	0.29***

*P < 0.05, **P < 0.01, ***P < 0.001

Fig. 1 Conceptual model of relations between marital quality, social support and mental health
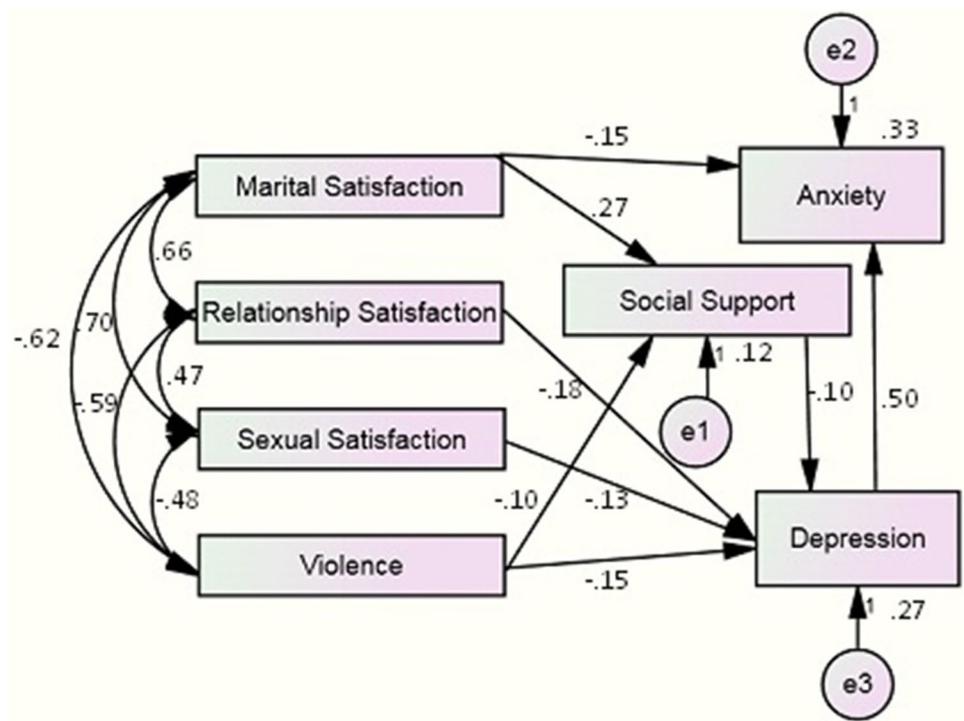
Table 3 Regression weights: (Default model)

			Standardized regression weights	Estimate	Critical ratio	Sig
Social support	<---	Marital satisfaction	0.267	0.698	3.582	<0.001
social support	<---	Domestic violence	−0.102	−0.630	−1.373	ns
Depression	<---	Communication	−0.182	−0.105	−2.300	0.021
Depression	<---	Sexual satisfaction	−0.134	−0.078	−1.831	ns
Depression	<---	Social support	−0.102	−0.022	−1.819	ns
Depression	<---	Domestic violence	0.244	0.321	3.616	<0.001
Anxiety	<---	Depression	0.496	0.587	8.899	<0.001
Anxiety	<---	Marital satisfaction	−0.151	−0.100	−2.718	0.007

Discussion

The aim of this study was to investigate the association between the mental health of pregnant women and their marital quality. The results of this study showed that the level of anxiety was mainly associated with the levels of marital satisfaction and marital communication. In addition, domestic violence, sexual satisfaction and marital communication were affected by depression. Social support had a mediating role in the relationships between the above variables. The results indicated that mental health problems had an inverse relationship with marital communication. The process of satisfying marital communication had a supportive role in reducing anxiety, depression, and

improved mental health (Qadir et al. 2013). Dissatisfaction and poor marital communication were the triggers of anxiety and depression (Nasreen et al. 2011). Domestic violence was reported as being a significant factor affecting women's anxiety (Howard et al. 2013). Further, del Mar Sanchez-Fuentes et al stated that sexual satisfaction was associated with the level of anxiety (2014). An inverse relationship between the levels of social support, depression, and anxiety had already been reported in several studies (Lancaster et al. 2010; Nasreen et al. 2011; Gourounti et al. 2014). Nevertheless, the results of this study showed that in the Iranian pregnant women, social support, serving as a mediating factor, affected the women's mental health. In addition, good communication between couples and their relatives protected the women from anxiety and

depression. It was also observed that the level of marital satisfaction had a relationship with the level of anxiety in women. Satisfaction with marital communication was a protective factor against life pressures (Zeng et al. 2014). Consistent with previous findings (Ulrich and Petermann 2016), this study revealed that the level of anxiety in pregnant women was negatively related to marital relationship. However, there was absence of an independent relationship between social support and levels of depression and anxiety in the path analysis. The path analysis showed that social support indirectly reduced the level of anxiety in pregnant women with increased levels of marital satisfaction. In line with these results, in a large cohort study conducted in Norway by Gourounti et al. there was no significant relationship between social support and anxiety (2014).

However, social support can reduce stress more than other factors in critical events and conditions. In addition, the results of other studies showed that spousal support was not equally important in all cultures. A study conducted on Mexican immigrant women showed that pregnant women supported by friends and other family members experienced less anxiety during pregnancy (Engle et al. 1990).

The results of this study indicated that there was a significant inverse relationship between marital satisfaction and anxiety level and a significant positive relationship between marital satisfaction and social support. In this regard, Li et al. showed that social support and marital satisfaction were considered protective factors against mental health issues during pregnancy (2016). In a systematic review of 29 studies, lack of support, especially spousal, was associated with anxiety and depression during pregnancy (Biaggi et al. 2016). In a study by Robertson et al. lack of spousal support was considered the most important risk factor for depression in pregnancy (Rubertsson et al. 2003).

The differences and relationships between marital relationships and spousal support are complicated. For example, O'Hara et al. found that, where both groups enjoyed equal marital satisfaction, women who experienced depression during pregnancy reported having enjoyed less support from their partners than women who experienced no depression. The authors believed that satisfaction in marital relationships could be more complex than spousal support. Satisfactory marital relationships provided significant social support for the spouses (1986). However, adverse and stressful relationships were seen as sources of stress that caused health problems (Burman and Margolin 1992). Another finding of the study was that the anxiety levels of pregnant women were inversely proportional to the levels of marital satisfaction, while their depression levels were inversely proportional to the levels of marital satisfaction mediated by marital relationships. These

findings were consistent with the marital discord model of depression suggesting that marital problems increased the risk of mental illness and led to depression, but satisfaction with marital life reduced depression (Babanazari and Kafi 2008).

O'Hara et al. reported the impact of a poor marital relationship as the stablest predictor of anxiety and other mental health problems during pregnancy (1984). Myers et al showed that marital life satisfaction was correlated with mental health, suggesting that higher marital satisfaction led to positive emotions and feelings (1995). Maltbay et al found that people with higher life satisfaction used more appropriate and more effective coping styles, experienced positive deeper emotions, and enjoyed higher general health (2004).

The findings of this study reflected an independent and positive relationship between violence and depression. In line with these results, domestic violence was reported as being the strongest predictor of depression (Lancaster et al. 2010). Further, in a meta-analysis (2012) conducted in the USA 9–28% of perinatal depression in women was caused by exposure to violence by their husbands (Beydoun et al. 2012). The present study confirmed that domestic violence was associated with depression in pregnancy. Similarly, it was reported that being abused by the spouse increased the risk of mental health problems for women during pregnancy (Beydoun et al. 2012).

In this study, important factors influencing anxiety and depression were investigated. The results of the study need to be interpreted in the light of certain limitations. First, the study design was cross-sectional, causing it to lack the power required to explain the causal relationship between the study variables.

In conclusion, the results of this study showed that all the factors affecting the quality of marital life lacked the power to predict the mental health of pregnant women. Therefore, marital relationship was the most important factor influencing mental health, and that the level of marital satisfaction was an important factor in the modulation of anxiety. Additionally, sexual satisfaction and the relationships between spouses were important factors in the modulation of depression during women's pregnancy, and that domestic violence was a major cause of depression.

Compliance with Ethical Standards

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