



Associated Factors of Marital Satisfaction in Iranian Women During the COVID-19 Pandemic: A Population-Based Study

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Abstract

Objective: The increasing prevalence of COVID-19 in Iran has increased the risk for anxiety and stress in families. Due to the significance of the impact of family health on the society's mental health and the fundamental role of marital relationships, which is an indicator of marital satisfaction, this study was conducted to investigate associated factors of marital satisfaction in Iranian women during the COVID-19 pandemic.

Methods: This online cross-sectional study was carried out to assess associated factors of marital satisfaction in Iranian women during the COVID-19 pandemic from April 1 to April 20, 2020. The study sample consisted of 317 married women of childbearing age eligible to enter the study. Data were collected using a socio-demographic and obstetric questionnaire, the Female Sexual Function Index, the ENRICH Marital Satisfaction Scale, and the General Health Questionnaire. Data analysis was performed using SPSS software version 22.

Results: A total of 317 married women participated in the study. The average age of the participants was 31.85 ± 6.94 years. Based on the multiple linear regression model, only five variables, including sexual satisfaction ($B = 2.414, P < 0.001$), physical symptoms ($B = 0.245, P = 0.045$), anxiety and insomnia ($B = -0.319, P = 0.002$), social dysfunction ($B = 0.265, P = 0.003$), and depression ($B = -0.441, P < 0.001$), could significantly predict marital satisfaction during the COVID-19 pandemic.

Conclusions: Sexual satisfaction, physical symptoms, anxiety and insomnia, social dysfunction, and depression can significantly affect marital satisfaction during the COVID-19 pandemic. Therefore, planning to identify these factors and provide the appropriate strategy can increase marital satisfaction in times of crisis.

Keywords: Marital Satisfaction, Women, Iran, COVID-19

1. Background

COVID-19 is a new virus that has affected many countries around the world and created much concern among people (1-3). The virus is transmitted through droplets (4, 5), and has widely spread worldwide. Accordingly, the World Health Organization has declared COVID-19 to be the sixth leading cause of public health emergencies in the world (6). Other than its physical effects, COVID-19 has had adverse effects on the quality of life and mental health (7, 8). Studies in China reported that both the medical staff and members of the community, especially couples, experienced psychological problems, including anxiety, depression, and stress, following the increase in the number of confirmed cases and deaths due to COVID-19 (9-11). Im-

pairments in mental health can occur due to the reduction in interpersonal communication in various aspects. Mental health impairments can have negative effects on the quality of marriage, which is one of the prerequisites for family health (12). By improving individuals' mental health, couples' marital satisfaction can also be improved (13). Marital satisfaction is a way of achieving life goals. It is defined as a partner's perception that their needs and desires are met by the other partner (14). Various variables affect marital relationships, resulting in satisfaction or dissatisfaction of couples (15). Various variables affect marital relationships, during the couples' life. These variables resulting in satisfaction or dissatisfaction from couples marital relationship (15). Some of these variables include income and employment, number of children sexual func-

tion, and disease (16). Among these, illness and physical and psychological trauma have negative and serious effects on couples' marital satisfaction (14). Several studies have shown that marital satisfaction is affected by couples' mental health and that mental health problems cause issues in spouses (17). Women are at higher risk for most mental disorders than men. On the other hand, providing mental health for women ensures family health and, subsequently, community health (18). The rapid spread of COVID-19 has caused considerable panic worldwide (19), and negative emotions, such as anger, fear, and stress, can negatively affect a couple's marital satisfaction (20). The increasing prevalence of COVID-19 in Iran has increased the risk for anxiety and stress in families. Concerning the significance of the impact of family health on the society's mental health and the fundamental role of the quality of marital relationships in marital satisfaction or dissatisfaction, this study was conducted to investigate associated factors of marital satisfaction in Iranian women during the COVID-19 pandemic.

2. Methods

2.1. Participants and Procedure

We conducted a cross-sectional study on 317 Iranian women from April 1 to April 20, 2020. We determined the sample size considering a 95% confidence interval, 5% error, and 10% withdrawals using $n = \frac{[P(1-P)Z^2]}{d^2}$ a convenience sampling technique. Due to the emergence of the COVID-19 pandemic, the Iranian Government provided public recommendations, including reduced face-to-face interactions, staying at home, and following social distancing guidelines. Therefore, we conducted this cross-sectional study in the form of an electronic network survey. Our study aimed to identify associated factors of marital satisfaction among Iranian women during the COVID-19 pandemic using an anonymous online questionnaire. The questionnaire was placed on an online survey platform, and the link to the questionnaire was sent to the respondents through social media, including WhatsApp, Telegram, and Instagram. An electronic informed consent was obtained from all the participants before registration. The participants were provided with information about the study and were free to choose whether to participate in the survey by answering a question about their willingness to participate. Only participants who chose "yes" were directed to the questionnaire page.

The inclusion criteria were (1) women of 18 years and older, (2) married women, (3) having enough knowledge

of Persian language, (4) living in Iran during the COVID-19 outbreak, and (5) providing informed consent electronically before registration. The exclusion criteria were (1) pregnant, lactating, or menopausal women, (2) not having sexual activity during the last 6 months, (3) history of COVID-19-related deaths in the family, (4) history of COVID-19-related hospitalization in the family, (5) history of reduced income due to COVID-19 in the family, (6) history of increased domestic violence related to COVID-19 in the family, (7) The Measures were taken so that each cell phone or computer could be used only once to fill the questionnaire. Measures were taken so that each cell phone or computer could be used only once to fill the questionnaire to ensure the quality of the collected data and prevent duplications. The background system was also incorporated with logic checks to identify invalid questionnaires. Data from all valid questionnaires were automatically extracted into a data file, and two independent researchers checked the results. Information about the study protocol is available on the Hormozgan University of Medical Sciences website (<http://research.hums.ac.ir/>).

2.2. Measures

The survey tools included a socio-demographic and obstetric questionnaire, the Female Sexual Function Index (FSFI), the ENRICH Marital Satisfaction Scale, and the General Health Questionnaire (GHQ).

2.2.1. The Socio-Demographic and Obstetric Questionnaire

The socio-demographic and obstetric questionnaire consisted of 23 items on age, spousal age, education level, spousal education level, employment status, duration of marriage, number of parity and gravidity, number of sexual intercourses before and during the COVID-19 pandemic, and consanguinity.

2.2.2. The Female Sexual Function Index

The 19-item The Female Sexual Function Index (FSFI) self-report questionnaire was used to assess the women's sexual function (21). We used the Iranian version of FSFI validated by Fakhri et al. (22). The FSFI questionnaire assesses six subdomains of sexual function, including sexual desire, excitement, lubrication, orgasm, satisfaction, and pain (i.e., pain associated with vaginal penetration). The subdomains are scored based on a five-point Likert scale, and a higher score indicates better sexual function. The cut-off scores for the subdomains of sexual function are < 4.28 for desire, < 5.08 for excitement, < 5.45 for lubrication, < 5.05 for orgasm, < 5.04 for satisfaction, and < 5.51

for pain. The cut-off score of ≤ 26.55 for the total questionnaire has been proposed to diagnose female sexual dysfunction. Accordingly, a woman scoring less than 26.55 should be considered at risk for sexual dysfunction (23, 24). The internal consistency of the FSFI questionnaire is equal to or greater than 0.82 based on Cronbach's alpha, and test-retest reliability over 2-4 weeks was similarly high for all the subdomains ($r = 0.79 - 0.86$) and for the total scale ($r = 0.88$) (21, 23, 24). The reliability of the questionnaire was also confirmed in this study (Cronbach's alpha = 0.96).

2.2.3. The ENRICH Marital Satisfaction Scale

A short version of the ENRICH Marital Satisfaction Scale was used to assess marital satisfaction. The Scale contains ten questions on satisfaction scored based on a five-point Likert scale, ranging from completely disagree (1) to completely agree (5), with higher scores indicating more marital satisfaction (25). The reliability of the original version of the Scale was confirmed (Cronbach's alpha = 0.86) (25), and Cronbach's alpha for the Persian version of the Scale was reported 0.74 (26). The reliability of the Scale was confirmed in this study with Cronbach's alpha of 0.81.

2.2.4. The General Health Questionnaire

The General Health Questionnaire (GHQ) is a self-administered screening instrument for psychiatric disorders in nonclinical populations (27). It consists of 28 items with four subscales, including somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression. The items are scored based on a 3-point Likert scale, ranging from 0 to 84. The cut-off for the presence of distress is 23.24 (28). The test-retest reliability of GHQ has been reported to be high (0.78 to 0.90) (29), and its inter- and intra-rater reliability has been reported to be excellent (Cronbach's alpha = 0.90-0.95) (30). The reliability of the questionnaire was confirmed in this study (Cronbach's alpha = 0.84).

2.3. Ethics

Ethical approval to undertake the survey was obtained from the Mother and Child Welfare Research Center, the Hormozgan University of Medical Sciences, Bandar Abbas, Iran (ethical code: IR.HUMS.REC.1399.004). Before completing the survey, the participants were given a brief introduction on the purpose and aims of the survey and were asked to confirm if they were willing to participate in the study.

2.4. Statistical Analysis

Data analysis was performed using the SPSS software (Version 22 for Windows, SPSS Inc, Chicago, IL, U.S.A.). Descriptive statistics, such as frequency, mean, and standard deviations, were used to explain the socio-demographic and obstetrics variables.

Pearson correlation coefficients, independent sample t-test, and one-way analysis of variance (ANOVA) were used to examine the relationship between the total marital satisfaction score and each of the socio-demographic and obstetrics variables. Then, all significant variables with $P < 0.05$ were entered into the multiple linear regression model. Finally, the variance inflation factor (VIF) index was used to investigate multicollinearity, and variables with $VIF < 10$ were entered into the model.

3. Results

3.1. Demographic and Obstetrics Characteristics

A total of 317 married women with an average age of 31.85 ± 6.94 years participated in the study. A majority (77%) of the participants had university education, and 45.5% of them were housewives. The frequency of sexual intercourse before and during the COVID-19 pandemic was 7.69 ± 5.72 and 7.27 ± 6.46 , respectively. Moreover, the mean total score for general health and sexual function was 26.48 ± 11.13 and 23.69 ± 7.58 , respectively. Other demographic, obstetrics, and sexual characteristics are shown in Tables 1 and 2.

3.2. Associated Factors of Marital Satisfaction

First, Pearson correlation coefficients, independent sample t-test, and one-way ANOVA were used to examine the relationship between the total marital satisfaction score and each of the socio-demographic, obstetrics, and sexual variables. Then, all significant variables based on Pearson correlation, one-way ANOVA, and independent sample t-test with $P < 0.05$ (Table 3) were entered into the multiple linear regression model. The model significantly predicted marital satisfaction ($P < 0.001$). Based on the multiple linear regression model, only five variables, including sexual satisfaction ($B = 2.414$, $P < 0.001$), physical symptoms ($B = 0.245$, $P = 0.045$), anxiety and insomnia ($B = -0.319$, $P = 0.002$), social dysfunction ($B = 0.265$, $P = 0.003$) and depression ($B = -0.441$, $P < 0.001$), could significantly predict marital satisfaction during the COVID-19 pandemic (Table 4). The most important associated factor was sexual satisfaction (standardized coefficients = 0.511), and if other variables remained constant, the marital satisfaction score

Table 1. Socio-Demographic and Obstetrics Characteristics of the Participants During the COVID-19 Pandemic^a

Variables	Values
Education level	
Primary	0
Secondary	9 (2.8)
High school and diploma	64 (20.2)
University	244 (77)
Spousal education level	
Primary	7 (2.2)
Secondary	22 (6.9)
High school and diploma	87 (27.4)
University	201 (63.4)
Employment status	
Housewife	157 (49.5)
Employee	160 (50.5)
Spousal employment status	
Government employee	132 (41.6)
Manual worker	31 (9.8)
Self-employed	144 (45.4)
Unemployed	10 (3.2)
Consanguinity	
Yes	71 (22.4)
No	246 (77.6)
The duration of marriage (y)	8.74 (6.63)
The age difference of couples (y)	-3.82 (3.30)
Gravida	1.38 (2.08)
Parity	1.04 (0.92)
Sex frequency before the COVID-19 pandemic (per month)	7.69 (5.72)
Sex frequency during the COVID-19 pandemic (per month)	7.27 (6.46)

^aValues are expressed as mean (SD) or No. (%).

increased about 2.41% by increasing the sexual satisfaction score. The least significant associated factor was physical symptoms. Multicollinearity did not exist in the model as VIF for all the variables was < 10 (or Tolerance > 0.1).

4. Discussion

The present study results showed that marital satisfaction, mental health, and sexual function in Iranian couples were affected by the COVID-19 crisis. Based on the results of previous studies, several factors affect couples' marital satisfaction (31, 32). The results also revealed that psychological and sexual factors had a significant role in couples'

Table 2. The Mean (SD) of FSFI, GHQ, and EMS in the Participants During the COVID-19 Pandemic

Variables	Mean (SD)
General health	26.48 (11.13)
Physical symptoms	5.95 (3.66)
Anxiety and insomnia	7.37 (4.90)
Social dysfunction	9.56 (4.12)
Depression	3.58 (4.38)
Sexual function	23.69 (7.58)
Desire	3.54 (1.14)
Excitement	3.77 (1.56)
Lubrication	4.37 (1.61)
Orgasm	3.11 (1.30)
Satisfaction	4.42 (1.67)
Pain	4.46 (1.67)
Marital satisfaction	35.63 (7.90)

marital satisfaction in the COVID-19 crisis. Moreover, the results indicated that 35% of the couples had marital satisfaction, which is much lower than the rate reported in other studies in Iran. Zare et al. (2019) reported that 75% of couples had moderate to high marital satisfaction before the COVID-19 pandemic and that the number of people not satisfied with their marriage was very low (31). This study showed that the COVID-19 crisis had a significant impact on marital satisfaction. Thus, it appears that COVID-19 consequences in family relationships and its impact on various aspects of people's lives should be considered.

In this study, anxiety, stress, depression, and insomnia were shown as associated factors of marital satisfaction during the COVID-19 pandemic in Iran. Other studies showed that psychological well-being was significantly related to marital satisfaction (33, 34). Malta et al. reported that marital dissatisfaction was associated with poorer health, depressive symptoms, personality problems, inappropriate behaviors, and poor social status. More satisfied couples use more effective and appropriate coping styles, experience deeper positive emotions, and have better public health (35). Shahi et al. showed a negative relationship between marital satisfaction and stress and depression, indicating that marital satisfaction decreased with increasing stress and anxiety (36). The result of these two studies are in line with those of the present study. One of the conditions that increases stress and anxiety in people is the increased risk of illness in the community. Some studies have shown that the COVID-19 pandemic can affect mental health. People's emotional responses are likely to include

Table 3. The Relationship Between the Total Marital Satisfaction Score and the Socio-Demographic, Obstetrics, and Sexual Variables

Variables	Marital Satisfaction	
	Test Statistics	P-Value
Age	$r = -0.053$	0.344
The age difference of couples	$F = 0.027$	0.627
Education	$F = 0.150$	0.007
Spousal education	$r = 0.234$	< 0.001
Employment status	$t = 2.340$	0.020
Spousal employment status	$F = 4.429$	0.005
Consanguinity	$t = -0.273$	0.785
Duration of marriage (years)	$r = -0.084$	0.135
Gravida	$r = -0.076$	0.175
Parity	$r = -0.213$	< 0.001
Sex frequency before the COVID-19 pandemic	$r = 0.147$	0.009
Sex frequency during the COVID-19 pandemic	$r = 0.149$	0.008
The General Health Score	$r = -0.319$	< 0.001
Physical symptoms	$r = -0.140$	0.012
Anxiety and insomnia	$r = -0.411$	< 0.001
Social dysfunction	$r = 0.287$	< 0.001
Depression	$r = -0.503$	< 0.001
The Sexual Function Index	$r = 0.467$	< 0.001
Desire	$r = 0.294$	< 0.001
Excitement	$r = 0.414$	< 0.001
Lubrication	$r = 0.364$	< 0.001
Orgasm	$r = 0.412$	< 0.001
Satisfaction	$r = 0.562$	< 0.001
Pain	$r = 0.292$	< 0.001

Abbreviations: r , Pearson correlation coefficient; F , one-way ANOVA; t , independent sample t -test.

extreme fear and insecurity. In addition, negative social behaviors are often associated with distorted fear and perception, which can lead to a wide range of mental health disorders, including insomnia, stress, anxiety disorders, and depression, all of which are associated with marital satisfaction. According to the present study, marital satisfaction is expected to be affected by COVID-19 (37). Mental health professionals need to provide the necessary support for those exposed to this condition. Another associated factor of marital satisfaction in the present study's participants was their sexual function during the COVID-19 outbreak.

The results of the univariable analysis showed the effect of sexual function on all its subdomains, while multi-

variate analysis showed only a significant effect of sexual function on sexual satisfaction. Our results also showed that marital satisfaction increased with increasing sexual function scores and that there was a positive relationship between the two variables. Similarly, some studies reported a significant relationship between sexual function and marital satisfaction (38, 39), which is in line with the present study findings. Sexual function is a part of human behavior under the influence of biological, psychological, and social factors. Previous studies showed that each of these factors had a different effect on the sexual cycle. Molaioli et al. showed the effect of lifestyle and biological factors on sexual health. An unhealthy lifestyle has a different effect on each element of the sexual cycle (40). Moreover, Ghormode et al. indicated a significant relationship between women's mental health and sexual quality of life. Lack of sexual motivation and arousal were the most common problems associated with women's mental health. (41).

It is important to note that in the COVID-19 crisis, women's sexual desire and arousal are more affected, directly affecting sexual function and satisfaction. Mental health affects the quality of sexual intercourse and plays a vital role in initiating women's sexual function. The quality of sexual intercourse affects a couple's sexual desire and frequency. Similarly, the present study showed that the COVID-19 crisis reduced the number of sexual intercourses in the couples. The results also showed that although the couples spent longer hours together during the quarantine period, other factors, including mental health, influenced their desire for sexual intimacy. Marita et al. showed that social and psychological factors had a major impact on the quantity and quality of sexual intercourse between couples. Thus, psychological factors should be considered to maintain marital satisfaction (42). According to these results, marital satisfaction significantly affects sexual intercourse. Moreover, it is necessary to have physical, mental, and social health in the COVID-19 crisis. Therefore, health-care providers and policymakers should plan interventions to strengthen the family's foundation in all aspects of health, especially in times of crisis (43). Various studies have been conducted on factors affecting the mental status of different groups, such as pregnant mothers and nurses, during the COVID-19 pandemic in Iran and other countries, with a design similar to our study. In most of these studies, depression, and stress proved to have major effects on mental health during the COVID-19 pandemic, similar to the present study findings (44, 45). Given the novelty of COVID-19 globally, any society must evaluate factors affecting vulnerable groups' mental health to adopt strategies

Table 4. Associated Factors of Marital Satisfaction in Iranian Women According to Multiple Linear Regression Analysis

Variables	B	SE	Beta	T	P-Value	95% CI
(Constant)	22.542	4.409	-	5.113	< 0.001	(13.865, 31.218)
Employment status						
Employee	-	-	-	-	-	-
Housewives	-0.290	0.726	-0.018	-0.399	0.690	(-1.718, 1.138)
Spousal employment status						
Government employee	-	-	-	-	-	-
Manual worker	-0.386	1.372	-0.015	-0.282	0.779	(-3.087, 2.314)
Self-employed	0.279	0.785	0.018	0.356	0.722	(-1.266, 1.825)
Unemployed	-3.731	2.101	-0.083	-1.776	0.077	(-7.865, 0.404)
Education	0.261	0.212	0.062	1.229	0.220	(-0.157, 0.678)
Spousal education	0.218	0.158	0.073	1.376	0.170	(-0.094, 0.529)
Parity	-0.263	0.408	-0.031	-0.645	0.519	(-1.065, 0.539)
Sex frequency before the COVID-19 pandemic	0.129	0.101	0.094	1.281	0.201	(-0.069, 0.328)
Sex frequency during the COVID-19 pandemic	-0.143	0.090	-0.117	-1.582	0.115	(-0.321, 0.035)
Sexual function						
Desire	-0.144	0.396	-0.021	-0.364	0.0716	(-0.923, 0.635)
Excitement	-0.031	0.459	-0.006	-0.068	0.946	(-0.934, 0.872)
Lubrication	0.161	0.405	0.033	0.397	0.692	(-0.637, 0.958)
Orgasm	-0.612	0.550	-0.100	-1.112	0.267	(-1.694, 0.471)
Satisfaction	2.414	0.389	0.511	6.199	<0.001	(1.648, 3.180)
Pain	-0.454	0.298	-0.096	-1.524	0.128	(-1.040, 0.132)
General health						
Physical symptoms	0.245	0.122	0.113	2.012	0.045	(0.005, 0.484)
Anxiety and insomnia	-0.319	0.102	-0.197	-3.125	0.002	(-0.520, -0.118)
Social dysfunction	0.265	0.087	0.138	3.047	0.003	(0.094, 0.436)
Depression	-0.441	0.098	-0.245	-4.484	< 0.001	(-0.635, -0.248)

R = 0.704, R² = 0.495, Adjusted R square = 0.463, d = 1.909

Abbreviations: B, a baseline unstandardized regression coefficient; SE, standard error; CI, confidence interval.

needed to manage mental health.

4.1. Conclusions

Sexual satisfaction, physical symptoms, anxiety, insomnia, social dysfunction, and depression can significantly affect marital satisfaction during the COVID-19 pandemic. Therefore, planning to identify these factors and provide the appropriate strategy can increase marital satisfaction in times of crisis.

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Footnotes

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