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Investigating the relationship between marital satisfaction and social safeness in patients with heart failure hospitalized in hospitals affiliated with Qom University of Medical Sciences

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Abstract

Background and aim:

Patients with heart failure constitute a large population. Due to the recurrence, long treatment process, and debilitating nature of this disease, they experience numerous physical, psychological, and social consequences that may affect their marital satisfaction and social security. Therefore, the present study aimed to investigate the relationship between marital satisfaction and social safeness in patients with heart failure hospitalized in hospitals affiliated with Qom University of Medical Sciences in 2025.

Materials and Methods

The present study was conducted as a descriptive correlational study on 170 patients with heart failure hospitalized in hospitals of Qom University of Medical Sciences in 2025. Sampling was performed using cluster sampling method. To complete the data, demographic information form, marital satisfaction scale, and social safeness and pleasure scale were used. Data analysis was performed using SPSS23 software. A significance level of less than 0.05 was considered.

Results

The mean age of the participants was 64.21 ± 9.03 years and the mean length of marriage was 39.67 ± 10.03 years. The mean duration of heart failure was 7.28 ± 5.87 years. The mean scores for marital satisfaction and social safeness were 13.59 ± 2.95 and 34.12 ± 5.62, respectively. Based on the results of Pearson correlation test, marital satisfaction had a significant relationship with social safeness.

Conclusion

According to the results of the present study, patients with heart failure had undesirable marital satisfaction. Heart failure patients also experienced moderate levels of social safeness and pleasure. The results also showed that improving social safeness improves marital satisfaction in patients with heart failure.

Introduction

Chronic heart failure (CHF) is a serious, progressive, and incurable disease characterized by dyspnea, edema, fluid retention, pulmonary congestion, and fatigue. These symptoms arise from structural or functional abnormalities of the heart that lead to inadequate cardiac output. Heart failure is a major global health burden, contributing significantly to hospital admissions, healthcare costs and mortality (2). Heart failure has affected more than 64 million adults worldwide (3). The meta-analysis conducted by van Riet et al. showed that the prevalence of all types of heart failure in people over 65 years of age in

developed countries is approximately 11.8% (4). By 2030, more than 23.3 million people are expected to die each year from cardiovascular diseases, and the prevalence of heart failure is expected to increase by 25% (5). In Iran, the prevalence of chronic heart failure is estimated to be 3.337 per 10,000 population (6). While the incidence of heart failure has stabilized and appears to be decreasing in developed countries, its prevalence is increasing due to an aging population, improved treatment and survival rates for ischemic heart disease, and the availability of effective evidence-based therapies that extend life expectancy (7).

Chronic heart failure can be associated with depression and anxiety, affecting patients' quality of life (8). Studies have also shown that depressive symptoms may be associated with the prognosis of these patients (9). Heart failure patients are often elderly, and elderly couples face health problems that may negatively affect their marital satisfaction (10).

Marital satisfaction, as an indicator of marital quality, reflects the perception and satisfaction of spouses with their needs and desires by the other party (11). Marital satisfaction is a multidimensional concept consisting of psychological, social, economic, and spiritual elements (12). Marital satisfaction strengthens couples' relationships, enhances their sense of pleasure, and improves self-confidence, interpersonal relationships, as well as physical, sexual, and mental health (13).

Decreased marital quality and satisfaction can reduce happiness, life satisfaction, self-esteem, mental health, and quality of life (12, 14). Several previous studies have indicated that marital status and marital relationship quality and satisfaction are consistent predictors of health outcomes, including cardiovascular disease and mortality (15). Whisman et al. (2018) showed that mortality was significantly lower among those with high marital satisfaction than among those with low marital satisfaction (16). Miura et al (2019) also showed that people with high marital satisfaction have a lower risk of developing metabolic syndrome, cardiovascular disease, and atherosclerotic problems (17). Based on evidence, psychosocial factors, such as perceived social support and marital relationship quality are effective in predicting complications and mortality after heart failure (18). Cené et al. (2022) also found depressive symptoms and lack of social or marital support to be effective factors in reducing life expectancy and increasing disease complications (19). Mlynarski et al. (2020) reported cardiac arrhythmia as a factor affecting marital satisfaction (20). In a study on patients with congestive heart failure conducted by Watterson (2013), high marital quality and satisfaction were associated with lower patient mortality, and patients with higher marital satisfaction demonstrated better self-care (21). In contrast, the study by Senturk et al (2021) found no significant difference in heart rate instability and heart problems between married and single individuals, suggesting that marriage and marital satisfaction are not related to health outcomes in heart patients (22). Different levels of marital satisfaction among heart patients have been reported in different studies. In the study by Ghanbari-Afra et al. (2020), patients with acute coronary syndrome had favorable marital relationships (23). Navidhamidi (2019) also showed that most patients with chronic heart failure had relative marital satisfaction (24). On the other hand, in the study of Nekounam (2019) most patients reported significant levels of marital dissatisfaction after open heart surgery (25).

Marital satisfaction can be influenced by several factors such as religious factors, sexual factors, communication factors, interaction factors, and mental health. Some socio-demographic factors such as occupation, length of marriage, age, age difference between couples, number of children, economic factors and income (26), which create a sense of social safeness, may also affect marital relationships and individual satisfaction (27).

Social safeness and pleasure are described as people's experiences and perceptions of their social world as safe, warm, and comforting, which are associated with a sense of belonging and acceptance by others (28). People who feel a sense of social safeness tend to cope more effectively with their problems, think more creatively, and harbor more optimistic beliefs about their ability to change their lives (29). Individuals with low levels of social safeness have higher levels of peer conflict and fewer positive emotional feelings than others (30), and experience difficulties with closeness and commitment in relationships (31). Weakened social safeness can lead to consequences such as depression, anxiety, stress, and self-criticism (32). In the study of Matos et al. (2022), perceived threat from COVID-19 was negatively related to social safeness (33).

Studies have shown that people with chronic conditions, including heart failure, are less likely to be readmitted to the hospital, have a higher quality of life, and live longer if they have social and marital support and connectedness (34).

Heart failure patients constitute a large population. In addition, statistics show a progressive increase in the number of people with chronic heart failure (1). Due to its recurrence and prolonged treatment, it is one of the most costly diseases with a significant impact on quality of life (35). Because of its debilitating nature, heart disease has numerous physical, psychological and social consequences. Given the heart's critical role in health and the importance of factors influencing it, such as marital satisfaction (25), as well as the neglect and ambiguity surrounding marital disorders and the lack of discussion on marital relationship issues in Iran (36), such studies are essential.

These patients experience disturbances in blood circulation and cardiac output that can interfere with their normal functions. Additionally, these issues—along with the medications they take and their side effects—may negatively impact various aspects of their marital satisfaction, including social presence and sexual relationships. Previous studies have reported different results regarding marital satisfaction in heart patients. Moreover, studies have generally examined social safeness in the context of other mental health problems, and researchers have not found studies that have examined social safeness in the context of physical illness. Additionally, no study was found that examined the relationship between marital satisfaction and social safeness. Therefore, the present study aimed to investigate the relationship between marital satisfaction and social safeness in patients with heart failure hospitalized in hospitals of Qom University of Medical Sciences in 2023.

Methods

This descriptive correlational study was conducted on patients with heart failure in hospitals affiliated with Qom University of Medical Sciences from May to October 2025. Sampling was carried out using a cluster sampling method. G*power3.1.9.4 software and previous studies were used to determine sample size. Taking into account the correlation coefficient of r = 0.52 between marital satisfaction and job security (as reported in the study by Peyman Kaveh Farsani, 2021), with a statistical power of 1 - β = 0.80 and a confidence interval of 95%, the minimum required sample size for the study was calculated to be 155 subjects. To account for potential dropouts, 170 samples were included in the study.

Inclusion criteria were a definitive diagnosis of heart failure by a cardiologist, a history of heart failure for at least six months, hospitalization for chronic heart failure symptoms, willingness to participate in the study, no self-reported mental illness, and no use of antipsychotic medications other than alprazolam and oxazepam.

The data collection instruments in this study included a demographic information checklist (including age, gender, marital status, education, employment status, religion, length of marriage, number of children, income, age difference with spouse, etc.), the Kansas Marital Satisfaction Scale, and the Gilbert Social Safeness and Pleasure Scale.

The Kansas Marital Satisfaction Scale

The Kansas scale is a 3-item, unidimensional questionnaire. This questionnaire uses a 7-point Likert scale, ranging from 1 (very dissatisfied) to 7 (very satisfied). The higher the sum of the scores, the greater is the satisfaction with marital life. A score of 17 or higher indicates high marital satisfaction. The validity and reliability of this scale has been confirmed in a study by Omani Samani (2018), and the Cronbach's alpha was reported to be 0.9 (38).

The Gilbert Social Safeness and Pleasure Scale: This scale was designed and developed by Gilbert et al. (2009) to measure social safeness and pleasure (39). Participants rate their agreement with the items on a Likert scale ranging from 1 (never) to 5 (always). To calculate the score of the questionnaire, the scores of all items are added together. The score range of this questionnaire is between 11 and 55, with higher scores indicating greater levels of social safeness and pleasure, and vice versa. Social safeness and pleasure scores fall into three ranges of 11–17 for low, 18–36 for medium, and 37–55 for high. Isaksson et al. (2022) examined the validity and reliability of the Swedish version of this questionnaire and obtained a Cronbach's alpha of 0.95 (40). Alavi et al. (2017) reported a Cronbach's alpha of 0.91 for this tool in their study (41).

Upon approval of the project and receipt of ethics code number IR.MUQ.REC.1403.132 for project number 3362 on 2024-7-12, the necessary permissions were obtained from Qom University of Medical Sciences to conduct the study. According to the inclusion criteria, 170 patients with chronic heart failure admitted to hospitals of Qom University of Medical Sciences were selected using cluster sampling method. If the subjects agreed to participate in the study, they were first given a full explanation of the purpose of the study and how it would be conducted. After signing the informed consent form, patients

were given the demographic information form, the Kansas Marital Satisfaction Scale, and the Gilbert Social Safeness and Pleasure Scale, and asked to carefully complete the questionnaires and return them to the researchers. Finally, they were thanked for their cooperation. In cases of illiteracy or low literacy, a co-researcher of the same sex as the patient helped them to complete the questionnaire. To ensure confidentiality, the participants were assigned a code. After collecting the questionnaires, the data were analyzed using SPSS23 software.

Descriptive tests were used to report background variables, and Pearson's test was used to examine the correlation between marital satisfaction and social safeness. Linear regression test was used to examine the effects of demographic and occupational variables—such as age, sex, education, employment status, number of children, duration of heart failure, duration of cardiac medication use, ejection fraction, smoking, drug use, underlying diseases, satisfaction with sexual relations, and social safeness—on marital satisfaction in two stages. In the first stage, each factor was examined separately using univariate analysis. Multiple linear regression analysis was used to more accurately assess the relationships between each factor in the marital satisfaction score. At this stage, variables with a p-value of less than 0.2 from the univariate analysis were included in the model as independent variables, with the marital satisfaction score serving as the dependent variable. A significance level of less than 0.05 was considered. We confirm that all methods were performed in accordance with the relevant guidelines and regulations.

Results

There were 170 participants in this study. The mean age of the participants was 64.21 ± 9.03 years and the mean length of marriage was 39.67 ± 10.03 years. The mean duration of heart failure was 7.28 ± 5.87 years. The mean ejection fraction of the participants was 26.81 ± 10.15%. Approximately half of the participants were male and half were female. 63.5% of heart failure patients had a history of hypertension and diabetes, and 81.8% had hyperlipidemia and were taking medication for these underlying conditions. About 53% of patients with heart failure also had some form of heart valve disease. Nearly 85% of patients were employed, and 77% had an employed spouse. 56.5% of patients felt that their income was below the required level. The mean scores for marital satisfaction and social safeness were 13.59 ± 2.95 and 34.12 ± 5.62, respectively (Table 1). The results of the Pearson correlation test showed a significant relationship between marital satisfaction and social safeness ($r = 0.611$, $p = 0.001$).

The results of the univariate regression are shown in Table 2. Based on the results of the multivariate regression test, the social safeness variable explains 65.5% of the variance changes in marital satisfaction in patients with heart failure ($R = 0.655$, $R2 = 0.430$, $p = 0.001$).

One unit of standard deviation increase in social safeness is expected to increase marital satisfaction by approximately 47.3% of a standard deviation. Thus, people with a greater sense of social safeness experience greater marital satisfaction (Table 3).

Table 1
Demographic characteristics of patients with heart failure admitted to hospitals of Qom University of Medical Sciences in 2025

Quantitative variable	Mean ± sd	Min	Max
Age (years)	64.21 ± 9.03	41	90
Number of children	3.52 ± 2.04	0	12
BMI (kg/m2)	28.08 ± 5.09	18	42
Duration of heart failure (years)	7.28 ± 5.87	1	30
Ejection fraction (EF) (%)	26.81 ± 10.14	10	45
Duration of marriage (years)	39.67 ± 10.03	15	68
Duration of smoking (years)	24.44 ± 12.10	5	45
Duration of drug use (years)	19.11 ± 12.95	5	44
Sexual satisfaction (scale of 0–10)	3.04 ± 1.76	0	7
Marital relationship satisfaction (scale of 0–10)	4.42 ± 1.83	0	9
Social safeness	34.12 ± 5.62	21	47
Marital satisfaction	13.59 ± 2.95	4	21

Table 2
Investigation of the effect of confounding variables on marital relationships in patients with heart failure in 2025 based on univariate linear regression

Dependent variable	B	R	p-value	Low CI	High CI
Age	-0.10	0.32	0.00	-0.15	-0.06
Sex	-0.48	0.08	0.29	-1.37	0.41
Education	1.22	0.38	0.00	0.77	1.67
Employment status	0.40	0.29	0.00	0.20	0.60
Number of children	-0.27	0.18	0.01	-0.48	-0.05
Duration of heart failure	-0.15	0.31	0.00	-0.22	-0.08
Duration of heart medication use	-0.13	0.29	0.00	-0.20	-0.06
Ejection fraction	0.08	0.30	0.00	0.04	0.13
Smoking	0.33	0.05	0.50	-0.65	1.31
Drug abuse	1.08	0.11	0.13	-0.32	2.49
Having underlying diseases	-0.77	0.27	0.00	-1.19	-0.35
Sexual satisfaction	0.60	0.36	0.00	0.36	0.84
Social safeness	0.32	0.61	0.00	0.25	0.38

Table 3
Investigation of the effect of confounding variables on marital relationships in patients with heart failure in 2025 based on multivariate linear regression

Model	Unstandardized coefficients		Standard coefficients	t	p-value	95% confidence interval for B	
	B	Standard error	Type II error (beta)			Min	Max
Fix	4.82	3.87		1.24	0.21	-2.83	12.48
Age	-0.004	0.04	-0.01	-0.09	0.92	-0.08	0.07
Education	0.39	0.29	0.12	1.32	0.18	-0.19	0.97
Employment status	0.20	0.09	0.15	2.29	0.02	0.02	0.38
Number of children	0.05	0.10	0.04	0.52	0.59	-0.15	0.27
Ejection fraction	-0.01	0.02	-0.06	-0.69	0.48	-0.07	0.03
Drug abuse	0.20	0.59	0.02	0.33	0.73	-0.98	1.38
Sexual satisfaction	0.08	0.13	0.05	0.63	0.52	-0.18	0.36
Duration of heart failure	-0.06	0.08	-0.13	-0.82	0.41	-0.23	0.18
Duration of heart medication use	0.03	0.07	0.08	0.51	0.61	-0.11	0.18
Risk factors for heart problems	-0.34	0.20	-0.11	-1.69	0.09	-0.74	0.05

Discussion

Based on the results of the present study, increased social safeness increased marital satisfaction in patients with heart failure. This is important because heart failure is often associated with a lot of stress and worry, which can have a negative impact on marital relationships (42). Consistent with the present study, national and international studies have also shown a direct relationship between social support and marital satisfaction (12, 43, 44). However, studies by He (2022) and Piechota (2022), conducted on parents of children with autism and middle-aged and elderly couples respectively, contradicted the results of the present study (45, 11). Feeling safe, both physically and emotionally, can help couples cope with the challenges of illness. Social safeness is also the ability to build positive relationships and support each other, and can help to strengthen the marital bond (46). Therefore, the presence of a strong support network can increase feelings of social safeness and, conversely, social safeness also promotes effective relationships and social support (47). The discrepancies in the results of the studies may stem from the specific characteristics of the study groups, which may have different needs for social support

and a sense of safeness. For example, parents of children with autism may face different challenges than parents of children with heart failure. In addition, with such problems, the family focuses on the child rather than the other parent, whereas with heart failure the focus is more on the affected spouse. In Piechota's study, the target population was older and middle-aged people. It is clear that the presence of middle-aged people alongside older people with more varied physical abilities and underlying conditions may have influenced the results of his study (45). These discrepancies also highlight the complexity and breadth of the concept of marital satisfaction. Several factors, such as age, type of disease and socioeconomic status, may influence these relationships (15). More research is therefore needed to better understand how different variables affect marital satisfaction.

According to the results of this study, patients with heart failure had an undesirable level of marital satisfaction. Low marital satisfaction in patients with cardiac arrhythmias has also been reported in the study by Mlynarski (2020) (48). Unsatisfactory marital satisfaction was also reported in patients after coronary artery bypass graft surgery in a study by Nekounam (2019) (25). The study by Ghanbari-Afra (2020) showed that patients with acute coronary syndrome have favorable marital relationships (23). In addition, the results of a study by Navidhamidi (2019) showed that most patients with chronic heart failure had relative marital satisfaction (24). The varied results regarding marital satisfaction among patients with heart failure and other heart diseases may be attributed to several factors (49). These factors include the type of heart disease, as each type of heart disease may have a different impact on quality of life and marital satisfaction. In patients with heart failure, the onset of persistent and debilitating physical symptoms can lead to activity intolerance, limitations in personal and social life, and dependence on others, even for personal tasks, which can have a negative impact on marital relationships. In contrast, patients with acute coronary syndrome may experience acceptable marital satisfaction after treatment and coronary revascularization and return to a normal life (50). Another factor is the stage of the disease, as psychological and social influences—such as anxiety, depression, and stress—can significantly affect marital satisfaction (51). The way the study is conducted and the cultural and social context may also influence how individuals experience the disease and marital relationships (52).

The results of this study indicated that the social safeness and pleasure of patients with heart failure are in the moderate range. These results can help us to better understand the social status and presence in society and relationships with different people in these patients, and to recognize the importance of paying attention to the social dimensions in the treatment and management of this disease. In the study of Kariyawasam (2022), while the social safeness of the British was high, that of the Sri Lankans was in the middle range (53). This difference may be attributed to cultural, economic, and social factors that influence people's sense of security (54). Isaksson's (2022) study also showed differences in the sense of social safeness among people with different personalities and the influence of psychological factors on this concept (40). This suggests that certain psychological conditions may have a negative impact on the feeling of social safeness (55). On the other hand, Matos (20–22) showed that the social safeness of people who perceived the threat of COVID-19 is low (33), indicating that social safeness is affected by different factors and different societies. In addition, global crises can have a significant impact on the

sense of social safeness (56). In individuals with heart failure, symptoms such as shortness of breath during exertion, activity intolerance due to weakness and fatigue, lower limb edema, movement restrictions, dependence on family for personal care, reduced social engagement, inability to continue working due to physical issues, decreased income, medical expenses, and frequent hospitalizations can contribute to a sense of danger, harm to social health, and lack of social security (57).

Strengths and weaknesses

One of the strengths of this study was that it examined the variable of social safeness, which has not been reported in relation to physical illness, particularly in patients with heart failure. Moreover, the use of a cluster sampling method has provided good generalizability of the study results.

One of the limitations of the present study is that it was conducted quantitatively using a questionnaire. It is important to note that due to inherent limitations and the potential for social desirability bias, some individuals may have withheld truthful responses and provided unrealistic answers. In addition, the study was cross-sectional, making it difficult to draw conclusions about causality.

Furthermore, only heart failure patients in Qom were included in the present study. Conducting the study in one culture and geographic location weakens the generalizability of the results to other geographic locations.

To improve the quality of the research, it is recommended that a qualitative study be conducted to examine different dimensions of the study variables from the perspective of patients with heart failure, or that the study be conducted in a larger population with different geographic locations and cultures.

Conclusion

Based on the results of the present study, marital satisfaction was undesirable in patients with heart failure. The social safeness of patients with heart failure was also moderate. Marital satisfaction in heart failure patients also improves with improved social safeness. Therefore, social support and rehabilitation should be the focus of planners and policy makers as key factors in improving the quality of life of patients with heart failure. Attention to creating employment opportunities that are appropriate to the abilities and limitations of these patients can help not only to provide a stable income, but also to promote their sense of worth and independence. Additionally, it is recommended that more qualitative research be conducted to explore the factors influencing social safeness and marital satisfaction from the perspective of patients with heart failure. This type of study can enhance our understanding of the needs and challenges faced by these patients, paving the way for the development of more effective intervention programs to improve their quality of life.

Declarations

Conflict of interest (Competing interests)

The authors declare that they have no potential conflicts of interest (competing interests) related to the research, writing, and/or publication of this article. The authors have no

Clinical trial number

not applicable

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Author Contribution

Study concept and design: L. GH-A., and HR. Z.; Acquisition of data: HR. Z, and H. Z.; analysis and interpretation of data: L. GH-A., and HR. Z.; drafting of the manuscript: L. GH-A., HR. Z, and H. Z.; critical revision of the manuscript for important intellectual content: L. GH-A., HR. Z, and H. Z.; statistical analysis: L. GH-A., and HR. Z. ; All authors discussed the results and contributed to the final manuscript.

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Data Availability

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Ethical Considerations:

The present study was conducted after the proposal was approved by the Research Deputy at Qom UMS and an ethics code (IR.MUQ.REC.1403.132) was obtained. This study adhered to the ethical principles of the Declaration of Helsinki, and informed consent was obtained from all individuals who participated. Participants were assured that the questionnaires were anonymous and that the information provided would remain confidential. It was also stated that participation and continued cooperation in the study were entirely voluntary, with no obligation to participate.

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