

Relationship between Sexual Quality of Life with Sexual Function and Sexual Distress in clinical married employed women

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Abstract

Objective: Sexual Quality Of Life (SQOL) is an important dimension of women's quality of life and several factors affect it. In this study, the relationship between SQOL with sexual function and sexual distress of clinical married employed women was investigated

Methods: The present study is a cross-sectional study that was performed on 385 clinical married employed women in hospitals of Tehran city Universities of Medical Sciences, using multi-stage sampling method during 2018. The research instruments include demographic information questionnaire, standardized Persian versions of female sexual function, female sexual distress scale, SQOL-F and Beck depression questionnaires and a researcher-made questionnaire of factors related to SQOL. The study data were analyzed using SPSS18 statistical software and the application of independent t-test, one-way ANOVA, chi-square and multiple linear regression.

Results: 43.4% and 41.8% of the participants respectively had poor quality of sexual life and high sexual distress; While 64.7% of them had low sexual function. The variables of job type, education (postgraduate, bachelor's and master's degree) and domains of desire, satisfaction and pain in FSFI, total sexual function score and sexual distress score, were related factors to SQOL score.

Conclusions: The majority of subjects in this study had good sexual quality of life but low sexual function, so the sexual quality of life in women can be affected by various factors (not just sexual function).

Introduction

Sexual Quality Of Life (SQOL) refers to the feeling of sexual attractiveness, interest, and participation in sexual activity, and perception of sexual function and is an important dimension of women's quality of life that has been less studied. This aspect of people's quality of life is an interactive and dynamic situation that changes over time and with circumstances' changing (1, 2). The low level of SQOL is associated with adverse health outcomes, low self-esteem, and reduced quality of life (3–5). The results of previous studies show a lower SQOL in women than in men (6–9), therefore, women are more vulnerable to the sexual quality of life than men(10). The components of SQOL from Rosen's perspective include sexual function, sexual ability, sexual self-efficacy, sexual satisfaction, relationship satisfaction, and overall satisfaction (11).

Sexual function is the physiological response that a person shows to sexual desire and consists of four stages: sexual arousal, plateau, orgasm, and resolution (12). Sexual function is one of the main bases of women's quality of life that reflects their biological, emotional, and social well-being (13). Any disorder that leads to inconsistency and dissatisfaction with sex can lead to sexual dysfunction in women (14). FSD is defined as a disorder of desire, arousal, orgasm, and sexual pain that results from multiple anatomical, physiological, medical, and psychological factors that can cause severe discomfort in a person and affect the quality of life and Interpersonal communication (15). The prevalence of sexual

dysfunction is reported to be 40% in the United States and Sweden and 29.6% in Malaysia (16). The prevalence of these disorders in different cities of Iran varies from 60.3–89% (17, 18) Frequency of sexual function quality level in Tehran women has been reported as 17.8% poor, 56.2% moderate, and only 6% good(19). Dissatisfaction with sexual function is closely related to social problems such as crime and rape or mental illness and divorce, and sometimes up to 40% of divorces are due to sexual dissatisfaction (10). According to the Fifth Psychological Disorders Diagnostic and Statistical Guidelines and the American Urological Association Foundation, personal distress is one of the main criteria in diagnosing female sexual disorders (20). Thus the sexual function problems have to be “accompanied by severe distress or interpersonal difficulty” in order to be diagnosed as actual sexual disorders. That is, sexual dysfunctions that do not cause distress or problem in relation to the others (partner) are not considered disorders (21).

Employment status is another important factor affecting the quality of life and consequently SQOL of individuals. This topic is especially important for women, considering their special physical, physiological, and psychological characteristics (22). Different reports of sexual function and SQOL have been presented in different work environments (23, 24). The prevalence of sexual dysfunction in nurses (one of the most researched clinical practice groups) has been reported even up to 50%, which is higher than in general women (25).

Despite high job stress in hospital staff that can affect various aspects of their lives (26–28) and high prevalence of sexual dysfunction and low SQOL among clinical employed women (6, 25, 29), limited studies have been carried out on the SQOL and factors Related to this, including sexual function and distress, in this group of employed women. Therefore, this study was conducted to investigate the Relationship between SQOL with Sexual Function and Sexual Distress in clinical married employed women.

Methods

The present study is a descriptive-analytical cross-sectional study that was conducted in

2018 in Tehran. The statistical population consisted of married employed women working in hospitals of three universities of Tehran, Shahid Beheshti, and Iran. Inclusion criteria included having at least one year of work experience in the hospital, having a surviving spouse, being sexually active, monogamy, not being pregnant, having at least a diploma, no menopause, no severe depression, and exclusion criteria was the unwillingness to continue cooperation in completing the questionnaires. The first sample size by considering the results of Samimi et al's study (the mean and standard deviation of SQOL 80.1 ± 19.7) (30),

95% confidence interval and the amount of estimation error equals one-tenth of the standard deviation ($d = 0.1$ SD), 346 people were estimated. The final sample size was 385 with a 10% probability of sample loss. Overall, 12 hospitals (4 hospitals of each university) were selected by multistage random sampling method, and 32 married female employees in different occupational categories (physician, midwife,

nurse, laboratory and radiology technician, assistant nurse and orderly, and secretaries of departments) were selected by random number table in each hospital. The following tools were used to collect data.

A) A researcher-made questionnaire consisting of three parts: demographic information (age, age of spouse, number of family members, education level, spouse's education level, and duration of marriage), health-related variables (quantity and quality of sleep, BMI, and physical activity, history of disease, history of drug use and smoking and having a method of contraception, believing in common beliefs about body image and sexual misconceptions in society, being satisfied with the overall appearance) and factors related to work (job type, work experience, employment status, having a second job, overtime, working hours per week, type of work activity and working shifts), which Content validity method was used to determine its validity.

B) SQOL-F questionnaire (sexual quality of life - female) presented by Symonds et al. in 2005(3). The Persian version of this tool was translated and validated by Masoumi et al. in 2013 ($\alpha = 0.73$)(4). This questionnaire is completed by self-report method and includes 18 questions in the form of four domains (psychological feeling of sexuality and sexual satisfaction, self-worthlessness, sexual suppression) that assesses SQOL. Response options are with a 6-point Likert (completely agree, fairly agree, to some point agree, to some point disagree, fairly disagree, and completely disagree) and the score range is at least 18 and topmost 108. A higher score indicates a more favorable level of SQOL (3). Based on the mean score of the study population, SQOL was divided into two categories: desirable (obtaining a score above the average) and undesirable (obtaining a score lower than the average).

C) FSFI questionnaire (Female Sexual Function Index) was published by Rosen et al. in 2000 to evaluate Female Sexual Function (31). Mohammadi et al. confirmed the validity and reliability of this questionnaire for the first time in Iran (32). This questionnaire contains 19 questions in six domains (desire, arousal, lubrication, orgasm, satisfaction, and pain). The maximum score for each domain was 6 and for the whole scale was 36. Greater scores than the cut-off point (total sexual function: 28, desire: 3.3, lubrication: 3.4, orgasm:

3.4, satisfaction: 3.8, and pain: 3.8) indicate good sexual function (31).

D) DeRogatis et al. developed the FSDS-R scale (Revised Female Sexual Distress Scale) in 2007 to measure personal distress associated with sexual desire (33). The validity of this questionnaire (reliability: $\alpha = 86\%$ up to $\alpha = 93\%$ and internal consistency: $r = 74\%$ up to $r = 86\%$) were confirmed by Azimi et al. This self-report questionnaire consists 13 items, all items scored with a 5-point Likert from 0 (never) to 4 (always). The overall score ranges from 0 to 52 and is obtained by the sum of the scores of 13 items. A score above the cut of point (11) indicates sexual distress (34). In order to investigate definitive sexual dysfunction by using the FSFI questionnaire (based on DSM-5), we have to examine the sexual distress status of individuals.

E) To assess the symptoms of depression and its severity on daily performance, the Persian version of the long form of the 21-item Beck self-report questionnaire was used. Items are arranged from 0 to 3. The

overall score is obtained by the sum of the scores and the maximum is 63. We consider a score of 21 and above to be depressing (35).

In order to collect the data, the researcher attended different wards of selected hospitals. After describing the objectives of the study and obtaining informed consent, first, the samples were asked to complete the Beck depression questionnaire. People with severe depression (score 36–63) were excluded and advised to refer to a psychiatrist. In the next step, the participants completed the other questionnaires namelessly. This study was confirmed by the Scientific and Medical Ethics Committee of Mazandaran University of Medical Sciences with permission no. IR. MAZUMS. REC.1397.2800. Data analysis was performed using SPSS18 software. Descriptive statistics were used for mean, standard deviation, and frequency percentage as well as independent t-test, ANOVA, and Chi-square test. Pearson and Spearman correlation tests, as well as univariate and multivariate linear regression with a Stepwise approach, were used to investigate the relationship between SQOL scores and sexual function and distress scores. The results of the tests were presented bilaterally considering the 95% confidence interval and the statistical significance level of P-Value < 5.

Results

The study participants had a mean age of 36.9 ± 7.6 years and 11.5 ± 7.4 years of work experience, of which 71.2% had postgraduate and bachelor's degree. Other demographic variables are listed in Table 1. The results showed that the mean score of SQOL was 85.8 ± 20.3 and most of the participants (218 persons = 56.6%) had higher scores than the average, indicating desirable SQOL. (Table 2)

Table 1: Description of demographic characteristics, health and occupational status of study participants (n = 385)

Variable	Minimum	Maximum	Mean \pm Standard deviation
Age (years)	21	60	36.9 ± 7.6
Spouse age (years)	23	66	40.3 ± 8.2
BMI (KG/M ²)	17.15	48.3	25.5 ± 4.2
Work experience (years)	1	35	11.5 ± 7.4
Working hours per week	8	114	52.5 ± 14.7
Bedtime at night	1.5	10	6 ± 1.4

Table 2: Describing the scores of sexual quality of life, sexual function and sexual distress in the study participants (n = 385)

Variables and grouping them		Minimum	Maximum	Mean \pm Standard deviation
Quality of sexual life	Psychosexual Feelings	7	42	33.7 \pm 8.7
	Sexual and Relationship Satisfaction	5	30	23 \pm 5.8
	self-Worthlessness	3	18	14.8 \pm 3.7
	Sexual Repression	3	18	14.3 \pm 4.1
	Total score	26	108	85.8 \pm 20.3
Sexual function	Desire	1.2	6	3.4 \pm 1.04
	Arousal	0	6	7.9 \pm 2.4
	lubricate	0	6	4.3 \pm 1.2
	Orgasm	0	6	4.3 \pm 1.4
	Satisfaction	0	6	4.4 \pm 1.6
	Pain	0	6	4.5 \pm 1.5
	Total score	1.2	36	24.6 \pm 6.8
Sexual distress		2	52	11.6 \pm 11.6

In terms of the total score of sexual function, most participants (249 people = 64.7%) had a low score of 28 (indication of bad sexual function based on cut-point). There was a direct and significant relationship between sexual function score and SQOL score in both good and bad subgroups of women's overall sexual function and its domains. Of the 249 people, who had a bad sexual function score, 134 (53.8%) did not have a good SQOL ($P = 0.001$) (Tables 3 and 5).

Table 3: Description and comparison of sexual quality of life score based on sexual function and sexual distress questionnaires (n = 385)

Variables and grouping them				Quality of life score ± Mean Standard deviation	Good SQOL Number of (%) samples	Bad SQOL Number of (%) samples
Sexual *function	Desire	Good	245 (63.6%)	16.8 ± 93.4	(83.7%)205	(16.3%) 40
		Bad	140 (36.4%)	19.03 ± 72.5	(45%) 63	(55%) 77
	Arousal	Good	364 (94.5%)	19.3 ± 87	(71.4%) 260	(28.6%) 106
		Bad	21 (5.5%)	25.5 ± 66	(38.1%) 8	(61.9%) 13
	lubricate	Good	328 (85.2%)	18.8 ± 88.5	(74.7%) 245	(25.3%) 83
		Bad	57 (14.8%)	21.4 ± 70.1	(40.4%) 23	(59.6%) 34
	Orgasm	Good	308 (80%)	17.2 ± 91	(79.2%) 244	(20.8%) 64
		Bad	77 (20%)	18.3 ± 65.2	(31.2%) 24	(68.8%) 53
	Satisfaction	Good	269 (69.9%)	15.1 ± 94.1	(86.2%) 232	(13.8%) 37
		Bad	116 (30.1%)	17.3 ± 66.4	(31%) 36	(69%) 80
	Pain	Good	291 (75.6%)	17.8 ± 90.1	(77.7%) 226	(23.3%) 65
		Bad	94 (24.4%)	21.8 ± 72.5	(44.7%) 42	(55.3%) 52
	Total sexual function	Good	136 (35.5%)	7.9 ± 102.9	(98.5%) 134	(2%) 1.5
		Bad	249 (64.7%)	18.9 ± 76.4	(53.8%) 134	(46.2%) 115
* sexual distress		No	58.)224 (2%	15.1 ± 95.5	(87.5%) 196	(12.5%) 28
		Yes	161 (41.8%)	18.8 ± 72.3	(44.7%) 72	(55.3%) 89

* Based on cut of points (total scale: 28, desire: 3.3, lubrication: 3.4, orgasm: 3.4, sexual satisfaction: 3.8 and pain during sexual intercourse: 3.8), each domain was divided into two groups of good (score above

cut of point) and bad (score lower than cut of point). Sexual distress was divided into two groups (lower than cut of point 11) (above cut of point 11).

There was a strong inverse and significant correlation between sexual distress total score and SQOL score and most participants (224 = 58.2%) scored lower than 11 (the sign of no sexual distress, based on the cut of the point). 161 subjects (41.8%) had sexual distress which 143 of them (88.8%) did not have a good sexual function ($P = 0.001$) and also 121 of them (75.2%) did not have a good sexual quality of life. ($P = 0.001$) (Tables 3 and 5)

Subjects aged 40 to 50 had the lowest mean score of SQOL (79.86 ± 19.94). In addition, the lowest mean score of SQOL in spouses (81.1 ± 18.9) belonged to the same age group. It can be said that with aging, the mean score of SQOL decreased, although, at the age of over 50 years, both the test subjects and their spouses had a slightly better SQOL score.

The lowest mean score of SQOL in participants and their spouses belonged to those with diplomas. In addition, there was a significant correlation between job type and SQOL. ($P = 0.001$) in a way that with the increase in education and job level, the mean score of SQOL of people was better, however, in the occupational group of physicians, the mean score of SQOL (84.11) was lower than the mean score of SQOL in laboratory and radiology groups (92.58). In the present study, there was a significant relationship between work experience and sexual quality of life ($P = 0.001$) and people with over 16 years of work experience had low mean SQOL scores.

Based on the results, there was a significant correlation between shift work and SQOL ($P = 0.04$), and the lowest mean score of SQOL (71.8 ± 26) belonged to the fixed night shift group. In addition, there was a significant relationship between sleep quality at night with SQOL. ($P = 0.001$) The lowest mean score of SQOL was related to the very bad sleep quality group (28.3 ± 80.23), while there was no significant correlation between SQOL score and sleep duration.

The results of correlation tests showed that the mean score of SQOL had a significant, weak, and inverse relationship with variables such as age, body mass index, household dimension, work experience, spouse's age, and duration of the marriage. However, there was a significant and weak but direct relationship with the variables of education, job type, physical activity, smoking, sleep quality at night, shift work, having a job and education of spouses, and participants' satisfaction with body image, weight, height, and overall appearance. Also, it was found that there was no significant relationship between variables of the duration of sleep at night, drug use, having a method of contraception, marital status (first marriage, remarriage), disease, employment status, working hours per week, believing in common beliefs about body image and sexual misconceptions in society, second job and overtime with SQOL score. (Table 4)

The results of modeling with multivariate linear regression with a Stepwise approach after matching showed that variables of "education and job type, domains of desire, satisfaction and pain in FSFI, total

sexual function and sexual distress" had a significant relationship with SQOL score are effective factors on SQOL. (Table 6)

Discussion

The purpose of this study was to determine the score of sexual quality of life-female and its relationship with sexual function and distress and other demographic variables in married clinically employed women. Exploring in all clinical occupational groups in different hospitals that can be generalized to the whole clinical community and the use of standard instruments for research was the strength of this study. The present study showed that most of the participants obtained a high mean score (indicating a favorable SQOL) from the SQOL-F questionnaire, which was similar to the results of Samimi et al. (30) and Dugan et al.(36). But, the mean score of SQOL in the study of Ahmadian et al., Which examined the relationship between sleep disorders and SQOL in rotating shift nurses (29) and the study of Cybulski et al., Which examined the SQOL in adults (6) ,was lower than the mean score of SQOL of the present study. Probably the reason for this discrepancy was the assessment only among a specific group (rotational shift nurses or adults).

The results of our study showed a strong, direct, and significant relationship between the total score of sexual function and the SQOL score and it turned out that most of the participants did not have good sexual function. More than half of people with bad sexual function did not have a good sexual quality of life, too. In 2016, Stamatiou et al. examined sexual dysfunction in 88 women aged 20 to 65 working in Greek hospitals and found that 69.31% of participants had sexual dysfunction. There was a significant difference between the sexual function scores of medical and administrative staff ($P < 0.05$), but there was no significant difference between the quality of life scores of the two groups ($P < 0.05$)(25). In that study, different instruments were used to evaluate the sexual function of individuals compared to our study, but in general, it was found that the high prevalence of sexual dysfunction among medical professionals, did not have a significant impact on the quality of life of this group of employees. In the present study, although the results showed low (bad) sexual function in most people, but totally, more than 50% of them reported a good SQOL. This can indicate that a number of items affects SQOL.

According to the results of the present study, the next item affecting the SQOL of clinically employed women was sexual distress. The results showed that there was a strong inverse and significant relationship between the total score of sexual distress and the SQOL score of the individuals. Most participants experienced less distress in sex, but the majority of the people who reported sexual distress did not have good sexual function and SQOL in their relationship either. In Jon. L. Shifren et al.'s study in

2008 surveyed Sexual Problems and Distress in United States Women, the prevalence of any age-related sexual dysfunction was 43.1%, of which 22.2% was defined as gender-related personal distress (37). Also according to the study of Witting et al. (2008), the proportion of women who reported both dysfunction and sexual distress, depends on the type of dysfunction, Was from 7–23% and women with distress or sexual dysfunction reported more maladaptation to their sexual partner than women without the disorder

(21). In this regard, the present study also showed that there is a significant inverse relationship between sexual distress and sexual function scores, in a way that participants with a higher sexual distress score had worse sexual function and the greater their sexual distress was, the worse their sexual function and the poorer their SQOL was reported.

In the present study, similar to other studies, an inverse relationship was observed between aging and SQOL (29, 30), but at the age of over 50, the SQOL score had improved. According to the results of Miriam K, age was the strongest factor in the models of this study; Which was initially negatively related to the SQOL (consistent with other studies). In such a way that with increasing age, the sexual quality of life decreased, but in old age, this relationship was reversed; And it was found that the SQOL of the elderly was affected differently by the quality and not the quantity of sex. These findings show that people in old age can reduce the effect of age on SQOL by acquiring skills and strategies, especially in a positive relationship(7). The results of our study also confirm this study.

In the study of Ahmadian et al., the work experience of the participants showed an inverse correlation with the SQOL, in a way that with increasing work experience, the SQOL decreased. This can be related to their age and the occurrence of other factors such as job stress and overlapping job and family responsibilities (29). This finding has also been reported in the Samimi et al.'s study (30). In the current study, there was a significant relationship between work experience and SQOL ($P = 0.001$) and a higher percentage (51.5% = 52 people) of people with more than 16 years of work experience had low SQOL score. Probably the reason of the lower SQOL in this group can be related to aging.

Based on the results of the study, there was a statistically significant relationship between shift work and sleep quality at night with SQOL. Moreover, the lowest SQOL score belonged to people with fix night shifts and very poor sleep quality. Since the participants in this study were medical staff with different work shifts, including night work, and due to the low SQOL score in people with night shifts, the low SQOL score in people with very poor sleep quality can be justified. Frequent studies have shown that people with night shift jobs have trouble sleeping (23, 29). Using the Pittsburgh Questionnaire, Boughattas et al. reported that sleep quality in night shift nurses is poorer than in day shift nurses. Moreover, they showed that the quality of life of night shift nurses is lower than day shift nurses (24). In this respect, it is in line with the recent study.

In the present study, multiple linear regression analysis showed the variables of education and job type, desire, satisfaction, pain, total sexual function score, and sexual distress that had a significant relationship with the sexual quality of life score, are affecting factors in clinical employed women's sexual quality of life. Though, based on the results of Samimi et al. only the variables of education level, duration of marriage, and sleep status were determined as predictors of women's sexual quality of life(30). Perhaps the discrepancy between their results and the present study is due to the lack of consideration of all related factors to SQOL (including sexual function and distress).

In this study, according to the sexual theme of the study, women's shyness in expressing private issues in their lives, the possibility of non-response or incorrect response to options was not far from expectation.

Other limitations of this study include the use of self-reporting instruments due to under-reporting. In addition, the large number of questions and questionnaires did not provide enough time for the staff to answer the questions due to the crowded wards. For this purpose, after identifying the qualified staff with the cooperation of educational supervisors and department heads, questionnaires were distributed among the mentioned individuals along with small gifts, and the next day the researcher collected them.

It is noteworthy that few studies have been conducted on the study of variables related to the sexual quality of life in women, so the authors of this article in some cases to compare with previous studies and research had to compare the sexual quality of life with sexual dysfunction and satisfaction. Such a comparison may not be correct in all cases.

Conclusions

In this study, most individuals had a good SQOL but low sexual function. According to this important finding, the SQOL in women is affected by various factors and not just sexual function. The results of this study showed that participants with a higher sexual distress score had a lower sexual function score, in other words, the more sexual distress people have, the worse their sexual function will be and as a result, the sexual quality of life will be more unfavorable.

Considering the other two important findings of the present study (decreased SQOL score in people with fixed night shift work and people with very poor sleep quality at night), Which can be a stressful factor and affecting on the SQOL (30, 38, 39), an arrangement must be made so that married employed women in clinical wards in the rotating shift group have less night work, in this way, perhaps, the consequences of this type of work in the marital and family relationships of individuals, which can be one of the reasons for the increase in divorce in our society, be reduced.

Also, in this study, based on the final results of simple and multiple linear regression, it was found that the variables (Job type, postgraduate, bachelor and postgraduate education, domains of Areas of desire, pain, and satisfaction of sexual function, total sexual function, sexual distress) that had the most effect on the SQOL score compared to other variables, are the factors affecting SQOL in clinically employed women.

Declarations

Ethics approval and consent to participate

Ethical approval for the study was granted by the ethics committee of Mazandaran University of Medical Sciences (IR.MAZUMS.REC.1397.2800). Informed consent was obtained from each participant before data collection.

All the methods were performed in accordance with relevant guidelines and regulations 31 codes of ethics in Iranian biomedical research and the Declaration of Helsinki

Consent for publication

Consent for publication was obtained from participants and the research committee.

Availability of data and materials

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

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

All authors contributed to the development of ideas and design of the study. TA wrote the first draft of the manuscript, which was critiqued by the other authors. The final version of the manuscript was critically reviewed by ZH. All authors read and approved the final manuscript.

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Tables 4-6

Tables 4 to 6 are available in the Supplementary Files section.

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