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# Effects of stress management and relationship-enrichment counseling on sexual and marital satisfaction of working women with high occupational stress

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## Abstract:

**BACKGROUND:** Industrialization of societies has placed considerable stress on employees influencing marital and sexual satisfaction. This study investigated the effects of stress management (SM) and relationship enrichment (RE) counseling on marital and sexual satisfaction in stressed women working at Tabriz University of Medical Sciences hospitals, Iran.

**MATERIALS AND METHODS:** In this quasi-experimental study, 75 nurses and midwives experiencing moderate-to-severe occupational stress after obtaining written informed consent were assigned to SM and RE counseling and control groups randomly. The SM and RE attended six-related counseling sessions, and control group received no intervention. The participants completed Osipow's Revised Occupational Stress Inventory (OSI-R), ENRICH Marital Satisfaction Scale, and Larson's Sexual Satisfaction Questionnaire before and 2 weeks after the intervention. The data were analyzed using one-way ANOVA and ANCOVA.

**RESULTS:** SM counseling led to relatively good increase in sexual satisfaction. In addition, there was no significant difference between the three groups in the mean occupational stress scores and marital satisfaction scores.

**CONCLUSION:** SM counseling increased the level of sexual satisfaction. The approaches had no significant effect on occupational stress and marital satisfaction. Further studies are required to identify the best counseling approaches.

## Keywords:

Counseling, managing, marriage, sexual satisfaction, stress, work-related Stress

## Introduction

As an important part of everyone's life, work not only helps individuals meet their essential needs, but also substantially influences their social status by fostering their body and soul, strengthening their social relations, and enhancing their senses of worth, self-confidence, and competence.<sup>[1]</sup> The presence of women in the work environment is growing very

rapidly due to recent developments in social and economic conditions.<sup>[2]</sup> Some of the main factors involved in the increased participation of women include the critical demand for female staff in many jobs (e.g., health care and education), where the presence of women is necessary, and the considerable efforts of women to achieve personal and financial independence as well as participation in social activities.<sup>[3]</sup> On the other hand, occupations that involve human contact are major sources of

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stress.<sup>[4]</sup> Work-related stress is an adverse reaction to heavy occupational pressures or demands that challenge the knowledge, skills, and coping abilities of employees.<sup>[5]</sup> Almost half of all working women suffer from occupational stress. The prevalence of occupational stress among working women in Nepal and Tanzania, Delhi, and Iran has been reported “47.5%,” “64.6%,” and “62.8%”, respectively. In the United States, the reported prevalence varies from 26 to 52%.<sup>[6-8]</sup> Evidence suggests that certain work conditions such as excessive demands, high workload, and conflicting expectations are stressful for most people. If not handled properly, stressful situations can cause various types of chronic health problems, especially cardiovascular diseases, headaches, musculoskeletal disorders, mood and sleep disorders, and disrupted family relationships.<sup>[6,9]</sup> In women, occupational stress can be caused by assuming multiple roles (e.g. housewife and employee), which leads to role overload and role overlap. The negative psychological effects of occupational stress are four times greater in women than in men. Occupational stress reduces the quality of personal and family life of women as well as the quality of healthcare services provided by female staff.<sup>[8]</sup> Furthermore, stress increases interpersonal conflicts, disrupts interpersonal relationships (especially among spouses), and leads to negative consequences such as distress and dissolution, decreasing levels of marital satisfaction.<sup>[9]</sup>

Marital satisfaction is achieved when an individual’s expectations of married life are consistent with his/her current situation and experiences.<sup>[10]</sup> In other words, marital satisfaction can be defined as a mental belief and perspective of meeting the expectations of sexual partners in a relationship.<sup>[11]</sup> Income and employment affect marital satisfaction.<sup>[12]</sup> Working people often take their work problems home at the end of each stressful day. This triggers maladaptive interactions between spouses.<sup>[13]</sup> In fact, stress is considered a potential threat to marital satisfaction and duration of marriage. Accordingly, in the Fourth Conference on Work and Stress, scholars warned that working people will no longer have a family in the near future primarily due to the negative impact of work process on family members and family relationships.<sup>[14]</sup> Female employment affects marital satisfaction in two ways. It boosts family income level and results in financial and economic stability of the family, reducing the financial stress of couples. On the other hand, female employment affects sexual relations in couples as the husband may begin to hate his wife’s employment and the fact that working changes her role in sexual relations. This can eventually reduce sexual satisfaction of couples.<sup>[15]</sup>

Sexual relationship and sexual satisfaction are major components of marital relationships. Sexual satisfaction

is defined as feeling of satisfaction and contentment with sexual performance and is influenced by several factors such as occupational stress, marital conflicts, level of education and culture, economic problems, moral and sexual compromises, and physical and mental problems.<sup>[16]</sup> The relationship between sexual dissatisfaction and marital problems reveals the profound effect of sexual satisfaction on marital satisfaction.<sup>[17]</sup> Given the growing number of working women with different personality structures and vulnerability to stress in recent decades, scholars have paid special attention to the impact of occupational stress on working women worldwide, particularly in Iran.<sup>[7]</sup> The relationship enrichment approach (RE) integrates communications theory and family systems, highlighting the importance of recognizing personal beliefs about the cause of problems and helping clients learn skills to solve their problems together.<sup>[18]</sup> This approach focuses on education-based empowerment rather than treatment and emphasizes the acquisition of specific skills. In RE, the solution to the problem is not neglected and the client learns to solve the problem as part of the treatment process.<sup>[19]</sup> Akbari and Khodadadi (2013) observed that stress inoculation training increased marital satisfaction in the short term.<sup>[20]</sup> According to Castillo (2004), cognitive-behavioral therapies (CBTs) help people manage their occupational stress.<sup>[21]</sup> Cognitive-behavioral stress management (CBSM) is a multifaceted approach that incorporates several techniques (e.g. relaxation, diaphragmatic breathing, meditation, recognition of automatic negative thoughts and cognitive distortions, reconstruction of reasonable thoughts, and effective coping and assertiveness training) and enables individuals to manage their stress and adapt quickly to stressful situations.<sup>[22,23]</sup> Effective stress management and coping skills help individuals improve dealing with their needs and challenges in life.<sup>[24]</sup>

Sexual satisfaction and marital satisfaction, as two major indicators of marital relationships, are influenced by several factors.<sup>[25]</sup> Occupational stress, stress management, and relationship enrichment are the main predictors of sexual and marital satisfaction.<sup>[21]</sup> Several studies have investigated the effect of occupational stress on marital satisfaction.<sup>[9,21,26]</sup> In addition, many researchers have confirmed the direct relationship between sexual satisfaction and marital satisfaction, indicating that high level of marital satisfaction leads to great sexual pleasure, and vice versa.<sup>[27,28]</sup> While Salmaani *et al.*’s study showed that short-term training does not have much effect on the stress of working women.<sup>[29]</sup> Several studies have examined marital satisfaction in working women; however, the authors found no study that examined the effects of employment and stress on sexual satisfaction of couples and the impacts of stress management and relationship enrichment counseling

on sexual and marital satisfaction of working women with high occupational stress. Given the tremendous importance of marital satisfaction in family stability and existence of scientific evidence on the potential effect of occupational stress on marital satisfaction, this study examined the effects of stress management and relationship-enrichment counseling on sexual and marital satisfaction of women with high stress jobs working at the teaching hospitals in Tabriz, Iran.

## Methods and Materials

### Study design and setting

A three-arm parallel design was used to carry out this quasi-experimental study in 2020-2021. The study population consisted of all nursing and midwifery staff of the teaching hospitals affiliated with Tabriz University of Medical Sciences in Iran.

### Study participants and sampling

The inclusion criteria were occupational stress score  $\geq 100$ , bachelor's or higher degree in nursing and midwifery, at least one year work experience at the hospital (with fixed-term, project-based, and permanent employment contracts), being married and sexually active, being monogamous, and receiving no individual counseling services during the treatment sessions. The exclusion criteria were having a history of physical diseases affecting sexual desire (e.g., lesions and chronic physical illnesses such as hypertension, diabetes, etc.), being affected by stressful variables such as disability or illness of a family member (e.g., cancer, intellectual disability, etc.), suffering from a mental illness, having a family member with a mental illness, experiencing recent traumatic and stressful life events (e.g., death of a child, a parent, etc.), smoking, consuming alcohol, substance abuse, and using other medicines that affect the body and mind, using medicines that reduce sexual desire such as antidepressants (e.g., fluoxetine, sertraline, and paroxetine) and antihistamines (e.g., chlorpheniramine), taking hypertension treatment medications such as clonidine, captopril, and benzodiazepines (e.g., alprazolam), going through menopause, experiencing sexual dysfunction (the participant woman or her husband), and being involved in serious marital disputes or submission of divorce petition. The exclusion criteria were all applied based on the participants' personal reports.

The sample size of marital satisfaction was 23, calculated using G-power, with regard to the largest standard deviation of subdomains of marital satisfaction in the study by Khalili *et al.*<sup>[30]</sup> ( $m_1 = 33.43$ ), and by a 20% increase in the mean of marital satisfaction score ( $m_2 = 40.116$ ),  $SD_1 = SD_2 = 6.79$ , two-sided test for  $\alpha = 0.05$ , and Power = 90%. For sexual satisfaction, the sample size was 12 with regard to  $m_1 = 114.6$ , a 20% increase in the mean

sexual satisfaction score ( $m_2 = 137.52$ ),  $SD_1 = SD_2 = 16.21$ , two-sided test for  $\alpha = 0.05$ , and Power = 90%. The sample size calculated for marital satisfaction was greater than that of sexual satisfaction; therefore, the final sample size for each group was determined 25, assuming 10% attrition.

The sampling process started after obtaining the approval of Ethics Committee of Tabriz University of Medical Sciences then the researcher visited the selected hospitals and invited the eligible nurses and midwives working in all hospital wards to participate in the study. To prevent contamination, only one individual was selected from each ward. For this purpose, the first eligible person who was willing to participate in the study was enrolled. After providing explanations to the participants about the significance, benefits, and objectives of the study, they signed informed consent forms, and completed Osipow's Revised Occupational Stress Inventory (OSI-R). Finally, the participant women with occupational stress score  $\geq 100$  completed the socio-demographic questionnaire, Larson's Sexual Satisfaction Questionnaire, and ENRICH Marital Satisfaction Scale.

### Recruitment and randomization

The participants were assigned to two intervention groups (stress-management and relationship-enrichment counseling) and a control group using [www.random.org](http://www.random.org) and through block design (6- and 9-individual blocks) based on (rotating or fixed) shift schedules with a 1:1:1 allocation ratio. The participants were assigned to the blocks by a member of the research team who was not involved in the sampling and data analysis processes. To conceal the allocation sequence, the type of interventions was written on pieces of paper and placed in envelopes, which were sealed and sequentially numbered. The envelopes were opened according to the order the participants were enrolled and their intervention was determined.

### Intervention

The first intervention group received stress management counseling to reduce occupational stress levels and the second intervention group received relationship-enrichment counseling to improve the marital relationship of the participant women. Those in the intervention groups attended one 4 to 6-member group counseling session per week for six weeks. The authors decided to hold the counseling sessions at conference rooms of the selected hospitals after obtaining permission from the corresponding authorities. In addition, the sessions were organized according to the work schedules of the participants. The authors also intended to provide the participants with assignments at each session and revise the content of assignments based

on the participants' feedback. The first counseling session was held in late January 2020, where the researcher emphasized the important role of women in the process and advised against burdening their spouses. The first, second, and third sessions were held, and those who failed to attend the group sessions received counseling separately. With the emergence of the COVID-19 pandemic and allocation of several hospital wards to COVID-19 patients, the sessions were cancelled due to the stressful conditions of hospitals and observation of strict health protocols. Given the unknown behavior of coronavirus and prediction of some experts that the pandemic would end in April 2020, the sessions were suspended in March 2020 after informing the participants. With the worldwide outbreak of COVID-19, the research team decided to continue the project online using WhatsApp Messenger. The researchers obtained the consent of participants to continue their participation after informing them about the new online sessions. Using WhatsApp, the content of the sessions was offered to the participants in the form of texts and audio and video clips on a weekly basis. Two weeks after the end of the sessions, post-test questionnaires were designed in Google Drive, and the links to the tests were provided to all participants. In pandemic conditions, online counseling can reinforce the spirit of learning and cooperation in medical staff and enable them to access, study, and review the contents of sessions during their free time.

The content of the counseling sessions is presented in appendix 1.

### Data collection tool

The data were collected using the socio-demographic questionnaire, ENRICH Marital Satisfaction Scale, OSI-R, and Larson's Sexual Satisfaction Questionnaire completed by the participants before and two weeks after the intervention.

**Socio-demographic questionnaire:** This tool included items such as age, educational level, marital status, family, and income level.

**ENRICH Marital Satisfaction Scale:** This tool was designed by Fowers and Olson to assess potentially problematic areas or the strengths and rich capacity of a marital relationship. It is also used to find couples who need counseling and relationship enhancement.<sup>[31]</sup> This study used the short (35-item) form of ENRICH which was developed by Olson in 2006 after revising the original scale. The four subscales of this tool include marital satisfaction (items 1, 5, 9, 13, 17, 21, 24, 27, 30, and 35), communication (items 2, 6, 10, 14, 18, 22, 25, 28, 31, and 34), conflict resolution (items 3, 7, 11, 15, 19, 23, 26, 29, 32, and 33), and idealistic distortion (items 4, 8, 12, 16, and 20). In a study on 365 couples, Gholami Tabar (2010)

assessed the validity and reliability of the scale, and obtained Cronbach's alpha coefficients of 0.8, 0.86, 0.84, and 0.83 for the subscales of marital satisfaction, communication, conflict resolution, and idealistic distortion, respectively.<sup>[32]</sup> The items are scored on a five-point Likert scale including strongly agree (score 5), agree (score 4), neither (score 3), disagree (score 2), and strongly disagree (score 1). Items 3, 5, 6, 7, 10, 13, 14, 18, 19, 21, 22, 23, 26, 27, 28, 29, 32, and 33 are scored inversely, and the total score ranges from 35 to 175.<sup>[32,33]</sup>

**Osipow's Revised Occupational Stress Inventory (OSI-R):** Osipow (1987) developed this 60-item inventory to assess occupational stress. The subscales of this tool include role overload, role insufficiency, role ambiguity, role boundary, responsibility, and physical environment. Each of these subscales has 10 items.<sup>[34]</sup> The items are scored on a five-point Likert scale including never (score 1), sometimes (score 2), often (score 3), very often (score 4), and almost always (score 5). The manual of this scale defines four categories of stress for people based on their total stress scores. These categories include low (scores from 50 to 99), low to moderate (scores from 100 to 149), moderate to severe (scores from 150 to 199), and severe (scores from 200 to 250). Sharifian *et al.* (2005) reported a very desirable content validity and an acceptable reliability for the tool. They obtained a Cronbach's alpha coefficient of 0.89 for OSI-R.<sup>[35]</sup>

**Larson's Sexual Satisfaction Questionnaire:** This 25-item scale was designed by Larson *et al.* (1998) to assess overall sexual satisfaction. The items are scored on a five-point Likert scale including never (score 1), rarely (score 2), sometimes (score 3), very often (score 4), and always (score 5). Items 4, 5, 6, 7, 8, 9, 11, 14, 15, 18, 20, 24, and 25 are scored inversely (Total score range: 25–125). Sexual satisfaction is classified into the following categories: no satisfaction (scores  $\leq 50$ ), low satisfaction (scores from 51 to 75), moderate satisfaction (scores from 76 to 100), and high satisfaction (scores  $\geq 101$ ).<sup>[36]</sup> Bahrami *et al.* assessed the reliability of the tool and reported Cronbach's alpha values of 0.93 and 0.89 for the fertile and infertile groups, respectively.<sup>[37]</sup>

In the present study, internal consistency was measured to determine the overall reliability of the tools. Cronbach's alpha is the most common technique to assess internal consistency of research tools. Cronbach's alpha  $\geq 0.7$  indicate acceptable internal consistency of research constructs.<sup>[38]</sup> In this study, Cronbach's alpha of 0.92, 0.94, and 0.84 were obtained for Larson's Sexual Satisfaction Questionnaire, ENRICH Marital Satisfaction Scale, and OSI-R, respectively.

The data were analyzed using SPSS24. The homogeneity of the groups in terms of socio-demographic characteristics

was assessed using the independent t, Chi-square, and Fisher's exact tests. The mean sexual satisfaction, occupational stress, and marital satisfaction scores of the participants in the control and intervention groups were compared using one-way ANOVA and ANCOVA (with controlled baseline values) before and after the intervention, respectively. The obtained results were analyzed using intention-to-treat analysis ( $P < 0.05$ ).

### Ethical considerations

The sampling process started after obtaining the approval of Ethics Committee of Tabriz University of Medical Sciences (Code: IR.TBZMED.REC.1398.873), registering the study at Iranian Registry of Clinical Trials (Code: IRCT20110524006582N34), and obtaining permission from the teaching hospitals of Tabriz (including Al-Zahra, Sina, Shohada, Shahid Madani, Razi, Alavi, and Nikukari hospitals, Imam Reza General Hospital, and Children Medical and Training Center). In addition each subject completed an informed consent by signing.

### Results

This study was carried out from December 2019 to December 2020 in Tabriz, Iran. The study population consisted of all nursing and midwifery staff of the teaching hospitals affiliated with Tabriz University of Medical Sciences ( $N = 108$ ), of whom 33 individuals did not meet the inclusion criteria [Figure 1]. No significant difference was observed between the three groups (including two intervention groups and a control group) in terms of socio-demographic characteristics ( $P < 0.05$ ). The mean (SD) age of the participants in the relationship enrichment group, stress management group, and control group was 38.7 (6.7), 37.8 (6.2), and 38.3 (5.1), respectively. The mean (SD) age of spouses was 40.7 (6.4), 40.7 (5.6), and 41.2 (7.2) for those in the relationship enrichment, stress management, and control groups, respectively. The mean (SD) work experience of the participants was 14.7 (6.9), 13.5 (6.0), and 13.9 (4.9) for those in the relationship enrichment, stress management, and control groups, respectively. All women in the relationship enrichment group (100%), and the majority of those in the stress management (96%) and control (84%) groups had bachelor's degree. The majority of the participants had a fixed-term employment contract (68% in the relationship enrichment group, 84% in the stress management group, and 72% in the control group). The majority of individuals in the relationship enrichment group (88%) and more than half of those in other two groups (64% in the stress management group and 60% in the control group) were nurses. The majority of women worked in the selected hospitals as nurses (92% in the relationship enrichment group, 80% in the stress management group, and 88% in the control group). A small percentage of women were

midwives (8% in the relationship enrichment group, 20% in the stress management group, and 12% in the control group). About one-fourth of the women worked fixed morning shifts (16% in the relationship enrichment group, 28% in the stress management group, and 24% in the control group). A small number of women worked morning and evening shifts (4% in the relationship enrichment group, 4% in the stress management group, and 4% in the control group). The majority of women had rotating work schedules (80% in the relationship enrichment group, 64% in the stress management group, and 72% in the control group). Spouses of more than half of women in the control group (60%), about half of those in the relationship enrichment group (52%), and more than one third of those in the stress management group (40%) had bachelor's degree. Spouses of more than half of women in the relationship enrichment (64%) and control (68%) groups and less than half of those in the stress management group (40%) were government employees. More than half of the participants reported their income level as relatively sufficient (76% in the relationship enrichment group, 68% in the stress management group, and 76% in the control group) [Table 1].

The mean (SD) sexual satisfaction score of women in the relationship enrichment group was 96.9 (14.6) and 97.8 (15.2) before and after the intervention, respectively. The mean (SD) sexual satisfaction score of those in the stress management group was 93.8 (14.3) and 97.0 (11.8) before and after the intervention, respectively. Moreover, the mean (SD) sexual satisfaction score of those in the control group was 93.2 (13.3) and 90.5 (13.2) before and after the intervention, respectively. Before the intervention, no significant difference was found between the three groups in terms of the participants' mean sexual satisfaction scores ( $P = 0.618$ ). Based on the results of ANCOVA with controlled baseline values, after the intervention, the mean sexual satisfaction score of the participants in the stress management group was significantly higher than that of those in the control group (adjusted mean difference = 6.63, 95% CI = 0.323-12.94;  $P = 0.036$ ). However, no significant difference was found between the relationship enrichment group and control group ( $P = 0.194$ ) or between the two intervention groups ( $P = 0.839$ ) in terms of sexual satisfaction [Table 2].

The mean (SD) marital satisfaction score of women in the relationship enrichment group was 118.5 (20.8) and 116.6 (20.9) before and after the intervention, respectively. The mean (SD) marital satisfaction score of the stress management group was 110.5 (24.0) and 114.7 (24.0) before and after the intervention, respectively. In addition, the mean (SD) marital satisfaction score of the control group was 113.3 (18.4) and 109.9 (18.5) before and after the

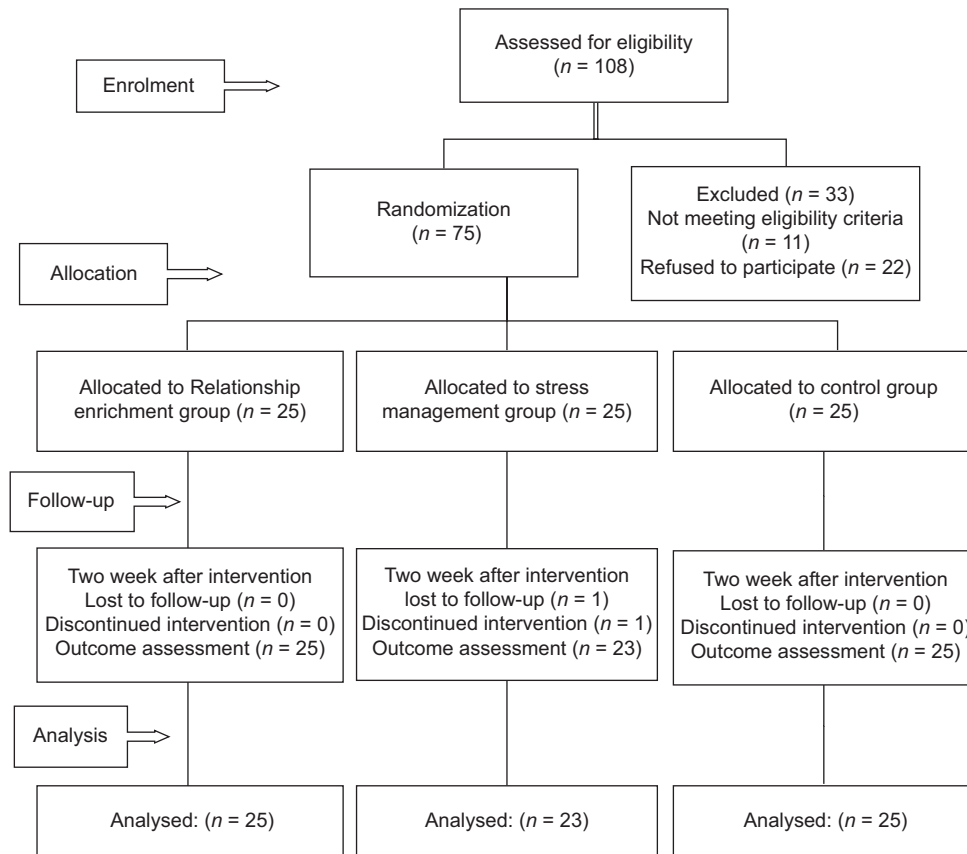


Figure 1: Flow chart of the participants through each stage of the trial

intervention, respectively. No significant difference was observed between the three groups before ( $P = 0.407$ ) and after ( $P = 0.181$ ) the intervention in terms of the participants' mean marital satisfaction scores [Table 3].

The mean (SD) stress score of women in the relationship enrichment group was 171.3 (22.5) and 167.68 (25.81) before and after the intervention, respectively. The mean (SD) stress score of the stress management group was 158.5 (30.8) and 153.52 (32.53) before and after the intervention, respectively. In addition, the mean (SD) stress score of the participants in the control group was 162.9 (27.6) and 166.28 (29.86) before and after the intervention, respectively. There was no significant difference between the three groups in terms of the mean occupational stress scores before ( $P = 0.245$ ) and after ( $P = 0.247$ ) the intervention [Table 4].

## Discussion

The concept of sexual satisfaction has not been widely examined neither in the Iranian society (due to religious and cultural beliefs, moral values, and social modesty of individuals) nor in Western societies (due to different function of sexual satisfaction beyond the family institution). Therefore, this study investigated the effects of counseling on marital and sexual satisfaction

of nurses and midwives working in the teaching hospitals in Tabriz, Iran. The results indicated that only stress management counseling had a positive effect on the participants' sexual satisfaction, and none of the approaches had a positive effect on their occupational stress and marital satisfaction.

The findings showed that stress management counseling significantly increased sexual satisfaction. Stress management is a form of CBT that includes various dimensions such as meditation, relaxation, assertiveness and coping skills, time management, and cognitive reconstruction. It empowers people to manage their stress and adapt quickly to stressful situations by identifying their thoughts, correcting their cognitive assessments, and replacing their negative thoughts with reasonable ones.<sup>[23]</sup> Parallel with this study Fatehizadeh *et al.* (2014) compared the effects of cognitive-behavioral and solution-focused counseling on sexual satisfaction of women visiting counseling and cultural centers in Isfahan, Iran. They observed that both approaches improved women's sexual satisfaction; however, cognitive-behavioral counseling was more effective than solution-focused counseling ( $P < 0.01$ ).<sup>[39]</sup> Darini *et al.* investigated the effect of nine 90-minute schema therapy sessions on sexual satisfaction of 20 individuals with below average sexual satisfaction scores (based on Sexual

**Table 1: Socio-demographic characteristics of participants in study groups**

Variable	RE counseling (n=25) n (%)	SM counseling (n=25) n (%)	Control group (n=25) n (%)	P
Woman's age (Year)	38.7 (6.7)	37.8 (6.2)	38.3 (5.1)	0.875 <sup>†</sup>
Spouse's age (Year)	40.7 (6.4)	40.7 (5.6)	41.2 (7.2)	0.962 <sup>†</sup>
work experience	14.7 (6.9)	13.5 (6.0)	13.9 (4.9)	0.773 <sup>†</sup>
Woman's education				0.062 <sup>*</sup>
Bachelor	25 (100)	24 (96)	21 (84)	
MA	0	1 (4)	4 (16)	
Employment status				0.759 <sup>‡</sup>
Permanent	17 (68)	21 (84)	18 (72)	
Fixed-term	5 (20)	4 (16)	4 (16)	
Project-based	1 (4)	0	1 (4)	
Corporative	2 (8)	0	2 (8)	
Position				0.395 <sup>‡</sup>
Metron	0	1 (4)	2 (8)	
Supervisor	0	0	1 (4)	
Head nurse	2 (8)	4 (16)	4 (16)	
Nurse	22 (88)	16 (64)	15 (60)	
Midwife	1 (4)	4 (16)	3 (12)	
Occupational group				0.584 <sup>‡</sup>
Nurse	23 (92)	20 (80)	22 (88)	
Midwife	2 (8)	5 (20)	3 (12)	
Shift work				0.894 <sup>‡</sup>
Fixed morning	4 (16)	7 (28)	6 (24)	
Fixed evening	0	1 (4)	0	
Fixed morning evening	1 (4)	1 (4)	1 (4)	
Rotating	20 (80)	16 (64)	18 (72)	
Spouse's education				0.0865 <sup>*</sup>
Without high school diploma	0	2 (8)	1 (4)	
High school diploma and post-diploma	5 (20)	5 (20)	1 (4)	
Bachelor's	13 (52)	10 (40)	15 (60)	
Master's	5 (20)	8 (32)	8 (32)	
Doctorate	2 (8)	0	0	
Spouse's job				0.235 <sup>‡</sup>
Employee	16 (64)	10 (40)	17 (68)	
Worker	1 (4)	0	0	
Retired	0	2 (8)	2 (8)	
Self-employed	2 (8)	5 (20)	1 (4)	
Other	6 (24)	8 (32)	5 (20)	
Sufficiency of income for household expenses				0.0560 <sup>*</sup>
Sufficient	5 (20)	8 (32)	4 (16)	
Somewhat sufficient	19 (76)	17 (68)	19 (76)	
Insufficient	1 (4)	0	2 (8)	

<sup>†</sup>Chi-square for trend test. <sup>‡</sup>Fisher's exact test. <sup>\*</sup>one-way ANOVA

Satisfaction Scale of Hudson, Harrison, and Crosscup), and concluded that schema therapy effectively improved women's sexual satisfaction.<sup>[40]</sup> Unlike the present study that provided counseling to people based on their occupational stress scores regardless of their pre-test sexual satisfaction score, Darini *et al.* offered counseling to women with below average sexual satisfaction scores. Javidi *et al.* found that teaching emotion management strategies increased sexual satisfaction in women.<sup>[41]</sup> In this study, relationship enrichment counseling improved sexual satisfaction of the participants, but the improvement was not statistically significant; however,

Pakgohar *et al.* found that counseling significantly enhanced sexual satisfaction of infertile women, which was incongruent with the results of the current study. They used convenience sampling to randomly assign 100 eligible infertile women to the counseling and control groups. Their study was conducted in two stages, namely pretest and follow-up after three months. Two 60-minute individual counseling sessions were held for each participant with one week interval. The results indicated that counseling significantly improved infertile women's sexual satisfaction levels.<sup>[42]</sup> Pourheydari *et al.* found significant improvements in sexual satisfaction

**Table 2: Comparison of sexual satisfaction among study groups**

	Before intervention mean (SD) <sup>†</sup>		After Intervention mean (SD) <sup>†</sup>	
RE (n=25)	96.9 (14.6)		97.8 (15.2)	
SM (n=25)	93.8 (14.3)		97.0 (11.8)	
Control (n=25)	93.2 (13.3)		90.5 (13.2)	
P	0.618 <sup>‡</sup>		0.034 <sup>‡</sup>	
Group comparison	MD (95%CI) <sup>‡</sup>	P	MD (95%CI) <sup>‡</sup>	P
RE with stress management	3.08 (-4.85 to 11.01)	0.441	-1.94 (-8.29 to 4.40)	0.839
RE with control	3.64 (-4.29 to 11.57)	0.363	4.68 (-1.52 to 10.89)	0.194
SM with control	0.56 (-7.37 to 8.49)	0.888	6.63 (0.32 to 12.94)	0.036

The participants in the groups were compared using one-way ANOVA and ANCOVA (with controlled baseline values) before and after the intervention, respectively. <sup>†</sup>Standard Deviation; <sup>‡</sup>Mean difference (95%Confidence Interval)

**Table 3: Comparison of marital satisfaction among study groups**

	Before intervention mean (SD) <sup>†</sup>		After intervention mean (SD) <sup>†</sup>	
RE (n=25)	118.5 (20.8)		116.6 (20.9)	
SM (n=25)	110.5 (24.0)		114.7 (24.0)	
Control (n=25)	113.3 (18.4)		109.9 (18.5)	
P	0.407 <sup>‡</sup>		0.181 <sup>‡</sup>	
Compare groups	MD (95%CI) <sup>‡</sup>	P	MD (95%CI) <sup>‡</sup>	P
Marital satisfaction in RE group with stress management	7.96 (-3.97 to 19.89)	0.188	-4.95 (-14.97 to 5.07)	0.546
Marital satisfaction in RE group with control	5.2 (-6.73 to 17.13)	0.388	2.54 (-7.18 to 12.26)	0.893
Marital satisfaction in SM group with control	-2.76 (-14.69 to 9.17)	0.646	7.49 (-2.40 to 17.38)	0.191

The participants in groups were compared using one-way ANOVA and ANCOVA (with controlled baseline values) before and after the intervention, respectively. <sup>†</sup>Standard Deviation. <sup>‡</sup>Mean difference (95%Confidence Interval)

**Table 4: Comparison of stress among study groups**

	Before intervention mean (SD) <sup>†</sup>		After intervention mean (SD) <sup>†</sup>	
RE (n=25)	171.3 (22.5)		167.68 (25.81)	
SM (n=25)	158.5 (8.30)		153.52 (32.53)	
Control (n=25)	162.9 (6.27)		166.28 (29.86)	
P	0.245 <sup>‡</sup>		0.247 <sup>‡</sup>	
Compare groups	MD (95%CI) <sup>‡</sup>	P	MD (95%CI) <sup>‡</sup>	P
Stress in RE group with stress management	12.8 (-2.52 to 28.12)	0.100	5.41 (-10.10 to 20.94)	0.780
Stress in RE group with control	8.44 (-6.88 to 23.76)	0.276	-5.14 (-20.24 to 9.95)	0.792
Stress in SM group with control	4.36 (-19.68 to 10.96)	0.572	-10.56 (-25.85 to 4.73)	0.260

The participants in groups were compared using one-way ANOVA and ANCOVA (with controlled baseline values) before and after the intervention. <sup>†</sup>Mean (Standard Deviation). <sup>‡</sup>Mean difference (95% Confidence interval)

and marital satisfaction of members of the intervention group who received relevant skills training.<sup>[43]</sup>

None of the counseling approaches improved marital satisfaction level in this study. In a quasi-experimental pretest-posttest study incongruent with our study, Parvin *et al.* (2014) used purposive sampling to enroll 43 female nursing staff of Hajar Hospital in Shahrekord, Iran. To assess the effect of life skills training on marital satisfaction, they asked the participants to complete the ENRICH Marital Satisfaction Scale before and one month after the intervention. Unlike the present study, Parvin *et al.* observed that life skills training positively improved marital satisfaction in female nurses.<sup>[44]</sup> In addition, in the present study, women with moderate-to-severe stress levels were enrolled, and the follow-up phase started two weeks after the intervention; however, Parvin *et al.* (2014) enrolled those with low marital satisfaction scores without assessing

their stress levels, and the follow-up phase started one month after the intervention. The difference in the results is probably due to the fact that people with poor marital satisfaction are more likely to seek counseling and to follow instructions to solve their problem than those with moderate or high levels of marital satisfaction. In the present study, relationship enrichment did not significantly improve marital satisfaction.<sup>[44]</sup> Mohaddesi *et al.* (2015) investigated the effect of cognitive-behavioral counseling on marital satisfaction of couples visiting the main health centers of Urmia, Iran. In total, 60 couples were assigned to the intervention and control groups (30 couples per group), and five 2-hour group counseling sessions were held for all participants at one week intervals. After the intervention, a significant difference was found between the mean marital satisfaction scores of those in the intervention group compared to those of individuals in the control group, especially in areas of communication, conflict resolution,



and sexual relationship.<sup>[45]</sup> Unlike the present study that provided counseling to women, Mohaddesi *et al.* held counseling sessions for both men and women. In another study, Amini *et al.* (2016) investigated the effect of seven 90-minute relationship enrichment counseling on quality of life and marital satisfaction of 32 married female students of Islamic Azad University of Khomeini Shahr, Isfahan, Iran. They concluded that the adopted counseling approach effectively improved marital satisfaction, and consequently overall life satisfaction of the couples.<sup>[46]</sup> In 2013, Mazhari *et al.* held eight sessions of relationship enrichment group counseling for all married women working in Education Department of Shahriar County, Iran, and observed that relationship enrichment counseling significantly decreased marital conflicts in working couples.<sup>[47]</sup> Nazari *et al.* found that relationship enrichment program enhanced marital adjustment and satisfaction of couples.<sup>[19]</sup> In their study, Oraki *et al.* (2012) observed that 10 sessions of relationship enrichment counseling were able to improve both marital adjustment and marital satisfaction in married university students.<sup>[48]</sup> Arianfar and Rasouli (2017) carried out a study entitled "Comparison of the effectiveness of emotion-focused couple therapy and marital enrichment program on marital satisfaction". They assigned 15 couples to three groups and provided each group with 9 weeks of emotion-focused couple therapy and 6 weeks of marital enrichment program. Both emotion-focused couple therapy and marital enrichment program improved the participants' marital satisfaction levels; however, marital enrichment program was found to have greater effects on most components of marital satisfaction compared with the emotion-focused approach.<sup>[49]</sup>

In this study, stress management counseling had no significant effect on occupational stress. Short-term sectional training during the COVID-19 pandemic did not help reduce stress. In line with this finding, Salmaani *et al.* observed that short-term training had no substantial effect on workplace stress, a type of stress that often adversely affects the physical and mental health of working women.<sup>[29]</sup> In a systematic review, Hazavehei *et al.* observed that training interventions significantly reduced occupational stress levels in most studies. They concluded that training interventions and programs developed based on the most advanced health education theories and models can effectively reduce occupational stress.<sup>[50]</sup> Inconsistent with the findings of the present research, Zaeri *et al.* found that CBSM training enhanced various dimensions of psychological well-being and reduced occupational stress in members of the intervention group.<sup>[28]</sup> In a research, Khadivi *et al.*, observed that CBSM effectively modified the type a behavior pattern, and significantly reduced occupational stress in industrial employees.<sup>[51]</sup> In a review of 58 articles, McCarthy *et al.* concluded that cognitive-behavioral

training and mental and physical relaxation exercises could moderately reduce stress.<sup>[52]</sup> Using CBSM and communication skills training, Ashtiani *et al.* successfully reduced symptoms of stress and anxiety in hospital nurses and staff and thereby improved their overall mental health.<sup>[53]</sup> Davarniya *et al.* investigated the effectiveness of CBSM in reducing occupational stress in intensive care unit (ICU) nurses. Based on their findings, 10 group sessions of CBSM training reduced perceived occupational stress in ICU nurses.<sup>[54]</sup> Therefore, the results of previous studies generally confirm the effectiveness of stress management group counseling in reducing occupational stress. In this respect, the difference between the present results and the findings of the aforementioned studies can be attributed to the excessive pressure and stress experienced by the participants in this study due to the emergence of COVID-19 and the subsequent increase in their workload and job demands. Therefore, long-term programs must be designed based on standard counseling models to successfully reduce occupational stress in working women. Accordingly, long-term mandatory counseling and training programs can be developed to promote and evaluate occupational status of female employees. In addition, different incentives can be offered to encourage women to participate in these training programs and sessions.

The present findings also indicated that relationship enrichment counseling had no significant effect on occupational stress. However, in the study of Verma *et al.* a one-week yoga practice program at home could improve job stress in managers.<sup>[55]</sup> The results of Panahi *et al.* research also showed that the combined intervention including awareness of stress, problem solving, self-expression, anger management, self-management, and activity planning significantly reduces occupational stress in nurses.<sup>[56]</sup> Salak *et al.* examined the effect of marriage enrichment training on occupational stress and quality of working life of married female employees of Iran Central Ironstone Company in Bafgh, Yazd, Iran. Based on their results, 10 sessions of marriage enrichment training had no significant effect on the quality of the participants' working life; however, unlike the present study, their intervention significantly reduced occupational stress in the participating women.<sup>[57]</sup> Overall, the findings of several studies indicate that different interventions and approaches can reduce occupational stress. This is inconsistent with the findings in this study, which is due to the differences time and place, number of training sessions, and follow-up time. The difference can also be attributed to several other factors. For example, in this study, the participants completed the post-test questionnaires during the stressful conditions of the peak of the third wave of COVID-19 in Iran. In addition,

some of the participants were feeling unhappy because of having a COVID-19 patient in the family or grieving the death of a relative/family member caused by the disease. Moreover, the participants did not have enough time to complete the questionnaires accurately since they had to give their mobile phones to their children so that they could attend their online classes. These factors, which could not be controlled by the researchers, can probably explain the discrepancy between the present results and the findings of the previous studies. It is probable that the participants could have been able to significantly reduce their stress levels if they could continue the programs and exercises they had learnt in the counseling.

### Limitations and strengths

In the present study, only one individual was selected from each ward to prevent contamination. In addition, the researchers used standard and valid questionnaires to assess the research variables. However, the participants' occupational stress levels were measured before the outbreak of COVID-19, and the researchers were unable to re-measure this variable. This issue has most probably affected the results. Moreover, due to the long distance between the selected hospitals, many participants could not attend some in-person group counseling sessions. Finally, during the online sessions, the researchers found it quite difficult to accurately assess the participants' progress due to the absence of face-to-face communication. Further research on the same topic is needed to be done after the end of COVID-19, when the level of occupational stress for the participants is at a normal level.

### Conclusion

Stress management counseling significantly improved the working women's sexual satisfaction; however, this approach had no significant effect on their occupational stress and marital satisfaction levels. Given the undeniable effect of sexual satisfaction on marital satisfaction, and the huge impact of marital satisfaction on employee productivity, the present results can help corresponding authorities develop general in-service training and job promotion programs for people with stressful jobs.

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### Ethics approval

All of the procedures were approved by the local ethical committee of Tabriz University of medical sciences and Ethics (Code: IR.TBZMED.REC.1398.873), registering the study at Iranian Registry of Clinical Trials (Code: IRCT20110524006582N34), and obtaining permission from the teaching hospitals. In addition, consent form was obtained from all participants.

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### Conflicts of interest

There are no conflicts of interest.

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**Appendix 1: Counseling contents**

<b>Sessions</b>	<b>SM approach</b>	<b>RE approach</b>
1	Introduction of program, definition of stress and its effects on life, the necessity of SM skills training.	Introduction of program, definition of enrichment and how it affects interpersonal performance and couple relationships, homework presentation
2	Addressing the differences between people in the face of stress, the relationship of thought and feeling, teaching relaxation, teaching and discussing negative thoughts and behaviors, steps to replace logical thoughts	Review of the previous session, discussion about the quality of work life and its impact on personal life, teaching speaking and negotiation skills, presenting homework
3	Investigating the coping styles of people in stressful situations, introducing problem-oriented and emotion-centered methods as coping styles with stress, homework for the next session	Review of the homework, teaching self-expression and empathy skills, presenting homework
4	Objectify the role of stress in life, cognitive reconstruction, time management, positive thinking	Review of the previous session, ER related to couples and conflict resolution skills between them. Presentation homework
5	As like as Session4	Problem solving, paying attention to strength and weaknesses in dealing with problems, Presenting homework
6	Review past sessions, focus on generalizing the results of the sessions to the environment outside the group	Self-change skills training, homework review, determination of follow-up stage time