

Effectiveness of Group Counseling with a Client-Centered Approach Based on the GATHER Principles on Sexual Satisfaction in Women with Multiple Sclerosis: A Randomized Clinical Trial

Shabnam Sazesh¹, MSc; Sara Esmaelzadeh Saeieh², PhD; Malihe Farid³, MD; Mansoureh Refaei⁴, PhD; Mansoureh Yazdkhasti², PhD

¹Department of Midwifery, School of Medicine, Alborz University of Medical Sciences, Karaj, Iran;

²Department of Social Determinants of Health, Faculty of Midwifery, School of Medicine, Alborz University of Medical Sciences, Karaj, Iran;

³Department of Community Medicine, Faculty of Community Medicine, Non-Communicable Diseases Research Center, Alborz University of Medical Sciences, Karaj, Iran;

⁴Mother and Childcare Research Center, Department of Midwifery, School of Nursing and Midwifery, Hamadan University of Medical Sciences, Hamadan, Iran

Correspondence:

Mansoureh Yazdkhasti, PhD;
Hasan abad Blvd., West Boali St.,
Postal code: 1481714317, Karaj, Iran
Tel: +98 26 32563328

Fax: +98 26 32556655

Email: Mansoyazd@yahoo.com

Received: 22 July 2019

Revised: 13 September 2019

Accepted: 06 October 2019

What's Known

- Group counseling creates constructive engagement among participants. In group counseling with a client-centered approach, participants help themselves and others to solve a problem, and improve a certain behavior.
- Counseling interventions are a good solution for the rehabilitation of sexual satisfaction in couples.

What's New

- Our client-centered approach based on the GATHER principles positively influenced sexual satisfaction and intimacy in women with multiple sclerosis.
- Sexual satisfaction and intimacy were improved at three different time points (before, after the final session, and one month after) in the intervention group.

Abstract

Background: Multiple sclerosis (MS) is the most prevalent progressive sensory/neurological disability in young adults, with important psychological consequences. The present study was designed to assess the effectiveness of group counseling with a client-centered approach based on the GATHER principles on sexual satisfaction in women with MS.

Methods: In this clinical trial, conducted from January 2018 to May 2019, in the MS Referral Center of Tehran (Iran), 72 eligible participants were assigned to intervention and control groups (36 in each group) via simple randomization. The intervention group received group counseling based on the client-centered approach, while the control group received routine counseling. Data were collected using the Larson Sexual Satisfaction Questionnaire (LSSQ) at three different time points: before the intervention, after the final session, and one month after the intervention. The collected data were analyzed in SPSS software (version 19). In order to analyze the obtained data, independent *t* test, Mann–Whitney *U* test, *paired t* test, Wilcoxon test, Chi-square test, Fisher exact test, and Friedman test were used.

Results: The mean score of sexual satisfaction before the intervention showed no statistically significant difference between the two groups. Based on the Friedman test in the intervention group, the trend of changes in the mean score of sexual satisfaction had a significant difference before the intervention, after the final session, and one month after the intervention ($P=0.001$); however, no significant difference was observed in the control group.

Conclusion: Our results showed the effectiveness of group counseling with a client-centered approach based on the GATHER principles on sexual satisfaction and intimacy among women with MS.

Trial Registration Number: IRCT20180110038302N3.

Please cite this article as: Sazesh S, Esmaelzadeh Saeieh S, Farid M, Refaei M, Yazdkhasti M. Effectiveness of Group Counseling with a Client-Centered Approach Based on the GATHER Principles on Sexual Satisfaction in Women with Multiple Sclerosis: A Randomized Clinical Trial. Iran J Med Sci. doi: 10.30476/ijms.2020.82616.1074.

Keywords • Multiple sclerosis • Nervous system diseases • Orgasm

Introduction

Multiple sclerosis (MS) is the most prevalent progressive sensory/nervous disease in young adults. MS not only affects the functioning of the sensory/nervous and motor systems but

also leads to signs and symptoms of cognitive, social, and psychological problems such as high levels of depression, distress, and anxiety; low quality of life (physical, mental, and sexual); and reduced effective social roles.^{1,2}

From the viewpoint of reproductive and sexual health, MS is a chronic, severe, and life-threatening disease posing family/social problems. The chances of marital problems are higher in patients with MS than in healthy populations because the onset of the disease forces the spouse to accept a change in role and adopt a new one.³

Nearly 2 million people worldwide and 400,000 people in the United States are afflicted with MS, and the annual social and therapeutic cost is \$2.4 million per patient.^{4, 5} In Iran, the prevalence of MS has witnessed a significant increase in recent years.⁶ The frequency of MS has been reported to be 73 per 100,000 globally and 60 per 100,000 in Iran.^{5, 7}

Patients with MS experience unpleasant symptoms, difficult treatment plans, medicine side-effects, and increased physical, mental, and sexual disabilities.^{8, 9} In terms of sexual symptoms, a three-component conceptual model for female patients with MS has been suggested. Firstly, sexual dysfunction caused by the neurological changes of the disease directly affects the sexual feelings or responses of women, such that they may experience diminished libido as well as changes in sexual senses such as pain and burning, reduced vaginal lubrication, and decreased numbers and intensity of orgasm. Secondly, sexual dysfunction secondary to physical changes directly affects sexual responses. Thirdly, sexual dysfunction may be due to the emotional, social, and cultural effects of the disease, all of which decrease sexual satisfaction.¹⁰ Psychological pressure and sexual symptoms due to MS lead to marital dissatisfaction, emotional divorce, or legal divorce in these patients.^{10, 11} Research has revealed that women with MS face the risk of divorce six times more than do other women, with 30% of them in dire need of personal and social support.^{1, 2}

Some studies have demonstrated the positive effect of counseling on coping with MS and emotional/sexual relationships among these patients and their spouses over the course of treatment.¹² In a survey on 160 women with MS, 33% of the patients were at the highest level of sexual dissatisfaction.¹³ Among interventions thought to be effective on adjustment in patients with MS, client-centered counseling programs with a psychological/behavioral approach appear to be among the

most useful interventions.¹⁴ In group counseling using a client-centered approach based on the GATHER (G, Great clients; A, Ask clients; T, Tell clients; H, Help clients; E, Explain how to use; R, Return for follow-up) principles, each person helps themselves and others to solve a problem and improve a certain behavior.¹⁵ This method is more effective probably not only because it is cost-effective in terms of time and money but also because the participants share knowledge and experience, interact spontaneously and uninhibitedly, seek effective coping strategies, and exhibit self-care behaviors.¹⁵⁻¹⁷

A previous study examined the effect of group counseling with a client-centered approach on reducing the level of stress and depression in patients with MS, and reported an improvement in the mental health of the participants.¹⁶

There is currently a dearth of interventional studies on sexual satisfaction among women with MS, but the existing literature contains no information on group counseling for Iranian women with MS. In addition, MS is a progressive disease that not only imposes increasing mental and social burden on patients and their families but also lessens sexual satisfaction between couples and increases the risk of divorce.^{11, 17, 18} Accordingly, we designed the present study to assess the effectiveness of group counseling with a client-centered approach on sexual satisfaction among women with MS.

Patients and Methods

Patients

The present parallel-group clinical trial, conducted from January 2018 to May 2019 in the MS Referral Center of Tehran (Iran), assessed 72 participants allocated to an intervention group and a control group (36 per group). Data were collected at three different time points: before the intervention (baseline), after the intervention (final session), and one month later.

The inclusion criteria were comprised of being a woman aged between 18 and 45 years, being married, having been married for at least 1 year, scoring a maximum 5.5 on the Expanded Disability Status Scale (EDSS), and having had sexual activity in the preceding six months.

The EDSS is regarded as a suitable tool to evaluate the effectiveness of clinical interventions and to monitor MS progression. Additionally, almost all publications identify the EDSS as the most widely used tool to measure disease outcomes in clinical trials.¹⁹ In the current study, two neurologists were consulted, and they reported an inter-rater agreement level of Kappa of 0.79.

The exclusion criteria consisted of having another chronic disease (e.g. diabetes, hypertension, and epilepsy) or psychological disease, smoking, addiction to narcotics, pregnancy, lactation, having experienced intense mental crises (e.g. death of a loved one), and hormone therapy in the preceding six months.

Methods

The study protocol was approved by the Ethics Committee of Alborz University of Medical Sciences (Code: IR.ABZUMS.REC.1397.015), and was registered with the Clinical Trials Code of IRCT20180110038302N3. Written informed consent was obtained from all the participants.

First, a list of eligible participants was drawn up based on the data in the files in the MS Referral Center. The candidates were invited over the telephone to visit the center on a specified date to learn about the research objectives. Then, informed consent was obtained from eligible individuals willing to participate. The participants were selected via the convenience sampling method. Simple random allocation was done using a computer software program that generates random sequences, and the women were allocated to an intervention group and a control group.

With respect to the intervention, the intervention group received client-centered group counseling in addition to routine counseling. Six consecutive weekly sessions on a specific day were offered to three groups (12 per each), with each session lasting for 60 minutes on average. The group counseling sessions were held in a quiet environment with a semicircle seat arrangement. The group counseling was performed in three steps: 1) introduction and action (Session 1), 2) action (Sessions 2 through 5), and 3) termination (Session 6) based on the client-centered approach and in accordance with the GATHER principles. The GATHER principles are a type of counseling method used across different cultures.¹⁵

In the present study, group regulations and the order of domains in the counseling sessions were set in collaboration with the participants. The content of the sessions is presented in table 1. The control group only received routine counseling, with consultations being offered individually in six sessions.

For the purposes of ethical issues, the control group participants were offered notebooks containing the detailed content of the group counseling sessions upon the completion of the study. Based on a study by van den Akker and colleagues, the sample size for this study was

set at 72 considering the formula for comparing two means belonging to a quantitative attribute in two independent populations for intervention and control groups ($\alpha=0.05$, $\beta=0.1$, $\mu_1=50.17$, $\mu_2=37.83$, $SD_1=8.18$, $SD_2=8.25$) and with a lost to follow-up rate of 20%.²⁰

$$n = \frac{(Z_{1-\alpha/2} + Z_{1-\beta})^2 (\sigma_1^2 + \sigma_2^2)}{(\mu_1 - \mu_2)^2}$$

Measurement

A data-gathering form was used for the participants' demographic, obstetric, and clinical characteristics. Additionally, a sexual satisfaction questionnaire was utilized. The sexual satisfaction scores before the intervention (baseline), after the final session, and one month after the intervention were measured in both intervention and control groups. The score of sexual satisfaction was measured using the Larson Sexual Satisfaction Questionnaire (LSSQ) which comprises 25 items scored on a five-point Likert scale. Each item can receive a score of 1 (never), 2 (rarely), 3 (sometimes), 4 (often), or 5 (always).¹¹ The increase in the sexual satisfaction score expresses an improvement in sexual satisfaction. In Iran, the internal consistency of the sexual satisfaction questions estimated with Cronbach's alpha was more than 0.7. The exploratory factor analysis was drawn upon to assess the construct validity of the questionnaire, and the final model of the construct of the questionnaire was confirmed by the confirmatory factor analysis.²¹

Statistical Analysis

The data were analyzed using SPSS Statistics, version 19. Data normality was checked using the Kolmogorov–Smirnov test. The nonparametric Mann–Whitney *U* test and the Friedman test were used for variables with non-normal distributions, whereas the parametric independent samples *t* test was applied for variables with a normal distribution.

The *a priori* level of significance was set at 0.05. The statistical analyses were performed with an intention-to-treat (ITT) approach as emphasized by the CONSORT statement. To improve the reporting of the quality of trials, this statement urges that the number of participants in each group, be analyzed based on the ITT principles.²²

Results

In this study, the demographic characteristics of 72 participants (36 per group) were analyzed.

Table 1: Content of group counseling sessions in terms of introduction, action, and termination with a client-centered approach based on the GATHER principles

Session	Content of Sessions
Session 1 (introduction and action)	Commencing with greetings, introduction, and establishment of rapport (G); explaining the aim of the sessions, introducing the researcher and the other members, explaining group regulations (timely attendance and confidentiality), describing the goal of the sessions, and expressing the experiences and information of peers on MS and its effects on marital relationships (A); giving a brief introduction of the female reproductive anatomy and physiology, explaining the four steps of sexual response, describing the physical and mental differences between the sexes in each step of the sexual cycle, and explaining changes in sexual functioning due to MS and offering solutions (T); summarizing the solutions proposed in the group counseling and assisting in the selection of appropriate solution(s) as confirmed by the counselor (H); explaining how to implement the solutions (E); scheduling for the next session (R)
Session 2 (action)	Greetings (G); reviewing the previous session's tasks with a checklist, discussing peer experiences and information on expressing sexual matters (eg, personal and interpersonal aspects, as well as sexual symptoms and their effects on one's sex life), effects of MS (eg, psychological, emotional, and social aspects) (A); encouraging self-respect, teaching how to avoid shame, underscoring the significance of happiness creation in life, increasing self-sufficiency, working on self-regard, focusing on the current capabilities, and explaining the importance of spiritual care (T); summarizing the solutions proposed in the group counseling and assisting in the selection of appropriate solution(s) as confirmed by the counselor (H); explaining how to implement the solutions (E); scheduling for the next session (R)
Session 3 (action)	Greetings (G); reviewing the previous session's tasks, discussing peer experiences, providing information on how to express sexual matters (eg, personal and interpersonal aspects, as well as sexual symptoms and their effects on one's sex life), and describing the prevalent and undesirable sexual symptoms of MS (A); helping the participants to identify ways of thinking, feeling, and behaving rather than negative thinking, discussing the significance of showing respect to the sexual partner, establishing an optimal environment (eg, warm showers, hygiene, tidiness, and aromatherapy with lavender in the room), discussing the effectiveness of slow and deep breathing before sex, discussing ways to enhance sexual desire, and discussing ways to reduce pain and spasms during sex (T); summarizing the solutions proposed in the group counseling and assisting in the selection of appropriate solution(s) as confirmed by the counselor (H); explaining how to implement the solutions (E); scheduling for the next session (R)
Session 4 (action)	Greetings (G), reviewing the previous session's tasks, discussing peer experiences, providing information on how to express sexual functioning and satisfaction, and discussing the effects of MS (A); correcting inaccurate beliefs regarding sex, discussing ways to improve sexual satisfaction, explaining appropriate sex positions, teaching perineal massage, and explaining factors affecting sexual satisfaction (T); summarizing the solutions proposed in the group counseling and assisting in the selection of appropriate solution(s) as confirmed by the counselor (H); explaining how to implement the solutions (E); scheduling for the next session (R)
Session 5 (action)	Greetings (G), reviewing the previous session's tasks, discussing peer experiences, providing information on how to express sexual functioning and satisfaction, and discussing the effects of MS (A); teaching stretching exercises (eg, hamstring muscles and the quadriceps femoris muscle), aerobics, balance exercises, pelvic-floor exercises, and Kegel exercises (T); summarizing the solutions proposed in the group counseling and assisting in the selection of appropriate solution(s) as confirmed by the counselor (H); explaining how to implement the solutions (E); scheduling for the next session (R)
Session 6 (termination)	Greetings (G); reviewing the previous session's tasks with a checklist, discussing peer experiences, and providing information on expressing general sexual symptoms and sexual satisfaction (A); summarizing general recommendations based on a review of the previous sessions (T); summarizing the solutions proposed in the group counseling and assisting in the selection of appropriate solution(s) as confirmed by the counselor (H); explaining how to implement the solutions (E); scheduling for the next session (R) (in online social networks)

Two women in the intervention group and one woman in the control group were lost to follow-up (figure 1).

The two groups had no statistically significant differences before the intervention in terms of the mean age, the body mass index, the duration of the marriage, the spouse's age, pregnancy, the husband's desire to have sex during a month, the mean number of sexual activities during a month, the duration of the MS disease, the EDSS score, the sexual satisfaction score (table 2), domestic violence, socioeconomic status, education level, occupation, and relationship with the spouse (table 3).

Based on the Friedman test, the mean score of sexual satisfaction in the intervention group significantly differed before the intervention,

after the final session, and one month after the intervention ($P=0.001$). Nonetheless, no significant difference was observed in the control group (table 4).

Based on *the paired t* test, the mean score of sexual satisfaction in the intervention group significantly differed before the intervention and after the final session ($P=0.001$), whereas no significant difference was observed in the control group (table 5).

Based on *the paired t* test, the mean score of sexual satisfaction in the intervention group significantly differed before the intervention and one month afterward ($P=0.01$). Nevertheless, based on the Wilcoxon test, no significant difference was observed in the control group (table 6).

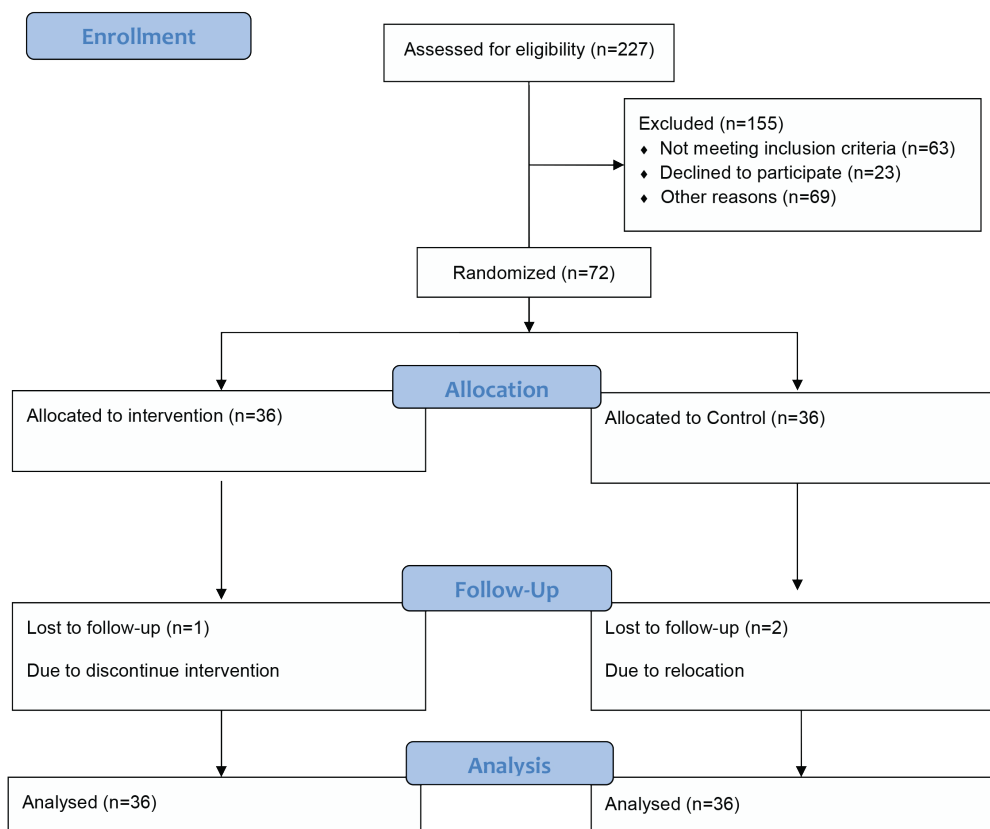


Figure 1: CONSORT diagram shows the flow of the participants through each stage of the present randomized trial.

Table 2: Baseline comparisons of the demographic, obstetric, and clinical characteristics between the intervention and control groups

Variable	Intervention Group (n=36) mean±SD	Control Group (n=36) mean±SD	P value
Age (years)	34.00±5.0	35.00±4.0	0.66 ^a
BMI (kg/m ²)	26.90±3.25	27.00±5.65	0.55 ^b
Duration of the marriage (years)	11.50±6.35	10.60±5.56	0.26 ^a
Spouse's age (years)	38.30±6.23	39.50±6.50	0.388 ^b
Pregnancy (n)	1.32±1.29	1.89±1.45	0.368 ^b
Husband's desire to have sex during a month (n)	8.65±6.22	8.89±6.33	0.968 ^a
Mean number of sexual activities during a month (n)	7.05±4.36	6.89±3.68	0.668 ^b
Duration of the disease (month)	82.00±5.53	82.00±6.46	0.830 ^a
EDSS score	2.23±1.25	2.36±1.07	0.583 ^b
Score of sexual satisfaction	87.63±17.67	80.86±17.20	0.104

EDSS: Expanded Disability Status Scale; BMI: Body mass index; ^a Mann-Whitney *U* test; ^b Independent *t* test

Discussion

The mean score of sexual satisfaction before the intervention was not statistically significantly different between the two groups. Nonetheless, the mean score of sexual satisfaction in the intervention group significantly differed before the intervention, after the final session, and one month afterward, whereas we observed no significant difference in the control group. Furthermore, the trend of changes in the mean score of sexual satisfaction in the

intervention group significantly differed before the intervention, after the final session, and one month after the intervention, while our results revealed no statistically significant difference in the control group.

Marck and others studied 2062 patients with MS and reported that personal characteristics, relationships with intimate partners, and environmental factors were likely to help the multidimensional experience of sexual satisfaction.²³ Accordingly, in the present study, we examined the demographic factors that

Table 3: Baseline comparisons of domestic violence, socioeconomic status, education level, occupation, and relationship with the spouse between the intervention and control groups

Variable		Intervention Group (n=36) n (%)	Control Group (n=36) n (%)	P value
Domestic violence	Yes	25 (69.5)	20 (55.6)	0.33 ^a
	No	11 (30.5)	16 (44.4)	
Socioeconomic status	Poor	12 (33.3)	6 (16.7)	0.23 ^a
	Moderate	21 (58.3)	24 (66.7)	
	Good	3 (8.4)	6 (16.6)	
Education level	High school	22 (62.2)	17 (47.2)	0.36 ^a
	Academic	14 (37.8)	19 (52.8)	
Occupation	Homemaker	33 (91.7)	31 (86.1)	0.75 ^a
	Employee	2 (5.6)	3 (8.3)	
	Manual worker	1 (2.7)	2 (5.6)	
Relationship with the spouse	Yes	10 (27.8)	12 (33.3)	0.79 ^b
	No	26 (72.2)	24 (66.7)	

^aChi-square test; ^bFisher exact test**Table 4:** Results of the Friedman test on the trend of changes in the sexual satisfaction score at three different time points in the two groups

Score of Sexual Satisfaction	Intervention Group (n=36) mean±SD	P value	Control Group (n=36) mean±SD	P value
Baseline/before	87.63±17.67	0.001 ^a	80.86±17.20	0.1 ^a
After	101.44±14.98		79.65±15.40	
One month after	98.24±18.19		79.75±16.40	

^aFriedman test**Table 5:** Comparisons of the sexual satisfaction score at baseline and after the intervention in each of the control and intervention groups

Score of Sexual Satisfaction	Intervention Group (n=36) mean±SD	P value	Control Group (n=36) mean±SD	P value
Baseline/before	87.63±17.67	0.001 ^a	80.86±17.20	0.06 ^a
After	101.44±14.98		79.65±15.40	

^aPaired t test**Table 6:** Comparisons of the sexual satisfaction score at baseline and one month after the intervention in each of the control and intervention groups

Score of Sexual Satisfaction	Intervention Group (n=36) mean±SD	P value	Control Group (n=36) mean±SD	P value
Baseline/before	87.63±17.67	0.01 ^a	80.86±17.20	0.09 ^b
One month after	98.24±18.19		79.75±16.40	

^aPaired t test; ^bWilcoxon test

could affect sexual satisfaction, including age, the body mass index, the length of the marriage, the spouse's age, the duration of the disease, the score of sexual satisfaction, domestic violence, socioeconomic status, education level, and occupation before the intervention, when the two groups were matched in terms of these variables.

In our study, based on the Friedman test, the trend of changes in the mean score of sexual satisfaction in the intervention group significantly differed before the intervention, after the final session, and one month after

the intervention ($P=0.001$), whereas the results indicated no significant difference in the control group. Potgen and colleagues, in a review study on 23 articles that evaluated a total of 13,259 patients with MS and 532 individuals in the control group, reported that the frequencies of sexual dysfunction and marital dissatisfaction were high in those with MS and, thus, suggested that interventions be offered for this problem.²⁴ A descriptive study on 160 women with MS reported that sexual satisfaction could be enhanced by social support centered on group counseling because group counseling could

lead to the active participation of patients in self-care and was, in fact, a reflection of health enhancement in chronic diseases and a method for alleviating tension.¹³ Counseling has a better performance and higher effectiveness in peer groups.^{17, 25} Foley and colleagues examined the effect of group counseling on intimacy rehabilitation and sexual dysfunction in women with MS in the United States.²⁶ They observed a marked improvement in their intervention group patients, who received over 12 couple therapy sessions (on sexual matters, emotional relationship, and adjustment with the symptoms and complications of the disease), in terms of emotional relationships, marital satisfaction, and sexual satisfaction.

The content of our counseling sessions included information on sexual matters, solutions to problems in emotional relationships, and techniques for improving sexual satisfaction, which eventually enhanced sexual satisfaction in the intervention group by comparison with the control group. Therefore, group counseling, including sessions on teaching sexual matters, can positively influence sexual satisfaction in women with MS. A previous study, investigating the effect of increasing knowledge of sexual matters on sexual satisfaction in married women, reported similar results.²⁷ In another study, the intervention and control groups first completed the LSSQ and the Spanier marital quality scale, and then the intervention group received twelve 90-minute group training sessions. The analysis of the data indicated that sexual satisfaction significantly differed in the intervention group compared with the control group, but it showed no significant difference between the groups one month after the intervention.²⁸ The results of this study are in line with ours; still, we observed that the positive effect of group counseling persisted for a longer period in that our data analysis showed a significant difference between the intervention and control groups even one month after the final intervention session. Therefore, it appears that the positive effects of group counseling last longer than those of group training because of the further exchange of ideas and interactions among participants.

Tompkins and colleagues examined the effect of an educational program for preventing tension in families and improving couples' relationships in patients with MS in Canada.⁹ In that study, the participants received training on effective communication skills, conflict resolution, and skills and techniques for maintaining relationships while fighting a chronic illness. The findings revealed that training significantly enhanced satisfaction with relationships, psychosocial

quality, problem-solving ability, and couples' satisfaction with each other.⁹ The results of this study are in concordance with ours. The content of our counseling sessions also contained solutions for improving relationships with the spouse and reducing tension in the family in order to enhance the psychosocial quality of couples, thereby enhancing sexual satisfaction and intimacy in the intervention group.

In a study by Bahramkhani and colleagues, the intervention group received twelve 90-minute group sessions of the aforementioned treatment, including stretching and pelvic exercises for three months.²⁹ No intervention was offered to the control group. The comparison of the disability status between the two groups showed that the Lazarus multimodal therapy significantly reduced the EDSS score in the intervention group, indicating improvements in the status of these patients, while changes in the control group were not significant. Similarly, the results of our study revealed that the solutions offered in the group counseling sessions, including stretches, pelvic exercises, and Kegel exercises, affected the sexual satisfaction of women with MS in the intervention group. Najafidoulatabad and colleagues investigated the effect of yoga on physical activities and sexual satisfaction among Iranian women with MS.³⁰ The intervention group received yoga training for four weeks in eight sessions (mean duration=75 min). Three months after the intervention, a significant difference was observed in the mean score of physical activity and sexual satisfaction in the women of the intervention group. Yoga uses extensive stretching exercises. Likewise, we employed numerous techniques for relaxation in our study to improve sexual satisfaction in women with MS. Moreover, in our study, group counseling led to the exchange of experiences with peers inasmuch as it helped the participants express their ideas and solutions for improving sexual functioning and satisfaction. Needless to say, such ideas and solutions needed to meet the approval of the counseling specialist; consequently, the participants in the intervention sessions benefited from accurate and scientific experiences to improve their sexual satisfaction and intimacy.

Leakage of session content from the intervention group to the control group could be one of the limitations of this study. We sought to minimize this possibility by changing the time at which the control group visited the MS center to receive routine care. The physical and mental condition of the patients with MS, which causes early fatigue in counseling sessions, could be another limitation of this study. We addressed

this issue by offering snacks in the sessions.

Conclusion

The results of the present study showed the effectiveness of group counseling with a client-centered approach on sexual satisfaction and intimacy in women with MS. We would, therefore, recommend this method for improving sexual satisfaction in women with MS in healthcare centers.

Acknowledgment

The authors would like to thank the participants and the personnel of the MS Referral Center of Tehran, Iran. Many thanks are also due to the Vice-Chancellorship for Research in Alborz University of Medical Sciences for the funding of this study. This study was offered a grant (No. 955560011) by Alborz University of Medical Sciences.

Conflict of Interest: None declared.

References

- Merghati Khoei E, Qaderi K, Amini L, Haghani H. Study on sexual behavior and quality of life of women with multiple sclerosis referred to Iran MS society in Tehran in 2010. *The Iranian Journal of Obstetrics, Gynecology and Infertility*. 2012;15:7-14. Persian.
- Nicholas R, Rashid W. Multiple sclerosis. *Am Fam Physician*. 2013;87:712-4. PubMed PMID: 23939450.
- Dennison L, Moss-Morris R, Chalder T. A review of psychological correlates of adjustment in patients with multiple sclerosis. *Clin Psychol Rev*. 2009;29:141-53. doi: 10.1016/j.cpr.2008.12.001. PubMed PMID: 19167801.
- Runmarker B, Andersen O. Prognostic factors in a multiple sclerosis incidence cohort with twenty-five years of follow-up. *Brain*. 1993;116:117-34. doi: 10.1093/brain/116.1.117. PubMed PMID: 8453453.
- Azami M, YektaKooshali MH, Shohani M, Khorshidi A, Mahmudi L. Correction: Epidemiology of multiple sclerosis in Iran: A systematic review and meta-analysis. *PLoS One*. 2019;14:e0219466. doi: 10.1371/journal.pone.0219466. PubMed PMID: 31287842; PubMed Central PMCID: PMC6615610.
- Etemadifar M, Sajjadi S, Nasr Z, Firoozeei TS, Abtahi SH, Akbari M, et al. Epidemiology of multiple sclerosis in Iran: a systematic review. *Eur Neurol*. 2013;70:356-63. doi: 10.1159/000355140. PubMed PMID: 24192707.
- World Health Organization. *Neurological disorders: public health challenges*. Geneva: World Health Organization; 2006.
- Rosiak K, Zagodzón P. Quality of life and social support in patients with multiple sclerosis. *Psychiatr Pol*. 2017;51:923-35. doi: 10.12740/PP/64709. PubMed PMID: 29289971.
- Tompkins SA, Roeder JA, Thomas JJ, Koch KK. Effectiveness of a relationship enrichment program for couples living with multiple sclerosis. *Int J MS Care*. 2013;15:27-34. doi: 10.7224/1537-2073.2012-002. PubMed PMID: 24453760; PubMed Central PMCID: PMC3883030.
- Gumus H, Akpınar Z, Yılmaz H. Effects of multiple sclerosis on female sexuality: a controlled study. *J Sex Med*. 2014;11:481-6. doi: 10.1111/jsm.12397. PubMed PMID: 24299569.
- Larson JH, Anderson SM, Holman TB, Niemann BK. A longitudinal study of the effects of premarital communication, relationship stability, and self-esteem on sexual satisfaction in the first year of marriage. *J Sex Marital Ther*. 1998;24:193-206. doi: 10.1080/00926239808404933. PubMed PMID: 9670124.
- Corallo F, Lo Buono V, Genovese R, Palmeri R, Di Cara M, Rifici C, et al. A complex relation between depression and multiple sclerosis: a descriptive review. *Neurol Sci*. 2019;40:1551-8. doi: 10.1007/s10072-019-03889-1. PubMed PMID: 31001715.
- Valvano AK, Rollock MJD, Hudson WH, Goodworth MR, Lopez E, Stepleman L. Sexual communication, sexual satisfaction, and relationship quality in people with multiple sclerosis. *Rehabil Psychol*. 2018;63:267-75. doi: 10.1037/rep0000203. PubMed PMID: 29878831.
- Gross HJ, Watson C. Characteristics, burden of illness, and physical functioning of patients with relapsing-remitting and secondary progressive multiple sclerosis: a cross-sectional US survey. *Neuropsychiatr Dis Treat*. 2017;13:1349-57. doi: 10.2147/NDT.S132079. PubMed PMID: 28572730; PubMed Central PMCID: PMC5441664.
- Rinehart W, Rudy S, Drennan M. *GATHER guide to counseling*. *Popul Rep J*. 1998:1-31. PubMed PMID: 10096107.
- Pahlavanzadeh S, Abbasi S, Alimohammadi N. The Effect of Group Cognitive Behavioral Therapy on Stress, Anxiety, and Depression of Women with Multiple Sclerosis. *Iran J Nurs Midwifery Res*. 2017;22:271-5.

- doi: 10.4103/1735-9066.212987. PubMed PMID: 28904538; PubMed Central PMCID: PMC5590355.
- 17 Thomas S, Thomas PW, Kersten P, Jones R, Green C, Nock A, et al. A pragmatic parallel arm multi-centre randomised controlled trial to assess the effectiveness and cost-effectiveness of a group-based fatigue management programme (FACETS) for people with multiple sclerosis. *J Neurol Neurosurg Psychiatry*. 2013;84:1092-9. doi: 10.1136/jnnp-2012-303816. PubMed PMID: 23695501; PubMed Central PMCID: PMC3786656.
 - 18 Chalah MA, Ayache SS. Cognitive behavioral therapies and multiple sclerosis fatigue: A review of literature. *J Clin Neurosci*. 2018;52:1-4. doi: 10.1016/j.jocn.2018.03.024. PubMed PMID: 29609859.
 - 19 Kurtzke JF. Rating neurologic impairment in multiple sclerosis: an expanded disability status scale (EDSS). *Neurology*. 1983;33:1444-52. doi: 10.1212/wnl.33.11.1444. PubMed PMID: 6685237.
 - 20 van den Akker LE, Beckerman H, Collette EH, Twisk JW, Bleijenberg G, Dekker J, et al. Cognitive behavioral therapy positively affects fatigue in patients with multiple sclerosis: Results of a randomized controlled trial. *Mult Scler*. 2017;23:1542-53. doi: 10.1177/1352458517709361. PubMed PMID: 28528567.
 - 21 Bahrami N, Yaghoobzadeh A, Sharif Nia H, Soliemani M, Haghdoost A. Psychometric properties of the Persian version of Larsons sexual satisfaction questionnaire in a sample of Iranian infertile couples. *Iranian Journal of Epidemiology*. 2016;12:18-31. Persian.
 - 22 Schulz KF, Altman DG, Moher D, Group C. CONSORT 2010 statement: updated guidelines for reporting parallel group randomised trials. *Int J Surg*. 2011;9:672-7. doi: 10.1016/j.ijsu.2011.09.004. PubMed PMID: 22019563.
 - 23 Marck CH, Jelinek PL, Weiland TJ, Hocking JS, De Livera AM, Taylor KL, et al. Sexual function in multiple sclerosis and associations with demographic, disease and lifestyle characteristics: an international cross-sectional study. *BMC Neurol*. 2016;16:210. doi: 10.1186/s12883-016-0735-8. PubMed PMID: 27814701; PubMed Central PMCID: PMC5097380.
 - 24 Pottgen J, Rose A, van de Vis W, Engelbrecht J, Pirard M, Lau S, et al. Sexual dysfunctions in MS in relation to neuropsychiatric aspects and its psychological treatment: A scoping review. *PLoS One*. 2018;13:e0193381. doi: 10.1371/journal.pone.0193381. PubMed PMID: 29486006; PubMed Central PMCID: PMC5828449.
 - 25 Zavoreo I, Grzincic T, Preksavec M, Madzar T, Basic Kes V. Sexual Dysfunction and Incidence of Depression in Multiple Sclerosis Patients. *Acta Clin Croat*. 2016;55:402-6. doi: 10.20471/acc.2016.55.03.08. PubMed PMID: 29045103.
 - 26 Foley FW, LaRocca NG, Sanders AS, Zemon V. Rehabilitation of intimacy and sexual dysfunction in couples with multiple sclerosis. *Mult Scler*. 2001;7:417-21. doi: 10.1177/135245850100700612. PubMed PMID: 11795465.
 - 27 Egerod I, Wulff K, Petersen MC. Experiences and informational needs on sexual health in people with epilepsy or multiple sclerosis: A focus group investigation. *J Clin Nurs*. 2018;27:2868-76. doi: 10.1111/jocn.14378. PubMed PMID: 29633408.
 - 28 Grover SA, Sawicki CP, Kinnett-Hopkins D, Finlayson M, Schneiderman JE, Banwell B, et al. Physical Activity and Its Correlates in Youth with Multiple Sclerosis. *J Pediatr*. 2016;179:197-203 e2. doi: 10.1016/j.jpeds.2016.08.104. PubMed PMID: 27717498.
 - 29 Bahramkhani M, Janbozorgi M, Alipoor A, Barzegar GK. Effectiveness of Lazarus multimodal therapy on expanded disability status in patients with multiple sclerosis. *Journal of Fundamentals of Mental Health*. 2011;13:136-47. Persian.
 - 30 Najafidoulatabad S, Mohebbi Z, Nooryan K. Yoga effects on physical activity and sexual satisfaction among the Iranian women with multiple sclerosis: a randomized controlled trial. *Afr J Tradit Complement Altern Med*. 2014;11:78-82. doi: 10.4314/ajtcam.v11i5.13. PubMed PMID: 25395709; PubMed Central PMCID: PMC4202522.