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Effects of Educational Program on Marital Satisfaction in Postmenopausal Women with Sexual Dysfunction in Tehran; a Randomized, Controlled Trial

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Abstract

Background: Marital satisfaction is one of the pivotal elements of emotional stability of couples and its effects on different aspects of peoples' lives are undeniable. Sexual dysfunction is one of the main health concerns in the majority of postmenopausal women and one of the key factors effective on marital satisfaction. The aim of this study was to evaluate the effect of sexual issues and communication skills education on marital satisfaction of Iranian Muslim postmenopausal women. Methods: In this randomized, controlled trial, 100 married postmenopausal women at the age range 45-55 living in south of Tehran-Iran and suffering from sexual dysfunction were allocated into two groups using block randomization. The intervention for the intervention group consisted of four sexual and communication skills education sessions and the control group received only routine trainings of the health center. Blinding the researcher was not possible due to the type of the intervention. ENRICH questionnaire was used to evaluate marital satisfaction in the both groups before and eight weeks after the intervention. Also, BDI-II and FSFI questionnaires were completed for both groups before the intervention. General linear model was used to compare the groups on the outcomes adjusted for baseline values (before the intervention). Data were analyzed using SPSS software version 19. P values of less than 0.05 were considered statistically significant.
Results: In the intervention and control groups 45 and 47 of the participants completed the study, respectively. Eight weeks after the intervention and comparing with the control group, marital satisfaction [adjusted difference: 7.78, (95% CI; -4.43 to -11.14)] ($P<0.001$) and sexual function ($P<0.001$) in the intervention group significantly increased. Conclusion: Four session educational program on sexual issues and communication skills can be used for improve of marital satisfaction in Muslim postmenopausal women suffering from sexual dysfunction.

Key words: Education, Marital, Satisfaction, Postmenopause, Sexual Dysfunction

Introduction

Menopause is the beginning of a new period and a pivotal point in women's lives (Battaglia et al., 2009). In the 18th century, only 26% of women would reach menopausal age, while this figure today is 90% (Fritz and Speroff, 2011). Because of increase in life expectancy, women's lives after menopause has drawn a great deal of attention and an improvement of the quality of life and the general welfare of these women is expected (AL-Azzawi and Palacios, 2009).

Marital satisfaction is one of the main elements in the emotional stability of couples (Fisher and McNulty, 2008) and a common phenomenon that indicates the extent of happiness and stability of marital relationship (Shahsiah et al., 2011).

Marital satisfaction has to do with the stability of family and quality of life in direct and indirect ways and lack of it leads to stress, anxiety, and even dissolution of the family foundation (Shackelford, Besser and Goetz, 2008). Researchers have found a large number of

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factors effective in marital life such as physiological, cognitive, emotional, and emotion factors, behavioral patterns, social support, aggression, children, stress, communication skills, and sexual relationships. Many believe that the latter is the most important factors in the stability of a marital relationship (Shahsiah et al., 2011). Sexual problems are one of the main health concerns in the majority of postmenopausal women. (Berek, 2012). They are usually followed by physical problems, isolationism, fear, emotional instability, and dichotomy of feelings. All these factors influence marital satisfaction, which is an element of sexual health (Hoga and Manganiello, 2007).

Sexual problems in women are age-dependent, progressive, and highly prevalent (Lewis et al., 2010), so that they are more common in postmenopausal women (Beigi et al., 2008). Studies have shown that there is a positive relationship between sexual satisfaction and marital satisfaction (Brezsnyak and Whisman, 2004; Byers, 2005) . Sexual problems might lead to several problems and affects inter-personal relationship (Mohammadi and Heidari, Faqihzadeh, 2008). In addition, marital satisfaction tends to be decreased after around 15 years of marital relationship (Khazaei and Rostami, Zaryabi, 2011). On the other hand, many experience adulthood while they are dealing with confusions about sexual issues, which are intensified gradually given the fact that people tend to be shy and close about the sexual issues (WHO, 1975). Several studies have highlighted the effect of sexual satisfaction on marital satisfaction (Shahsiah et al., 2011; Brezsnyak and Whisman, 2004; Byers, 2005).

Doubtlessly, health care education is of great importance throughout the life not to mention that health matters in postmenopausal women need adopting new approaches (Fritz and Speroff, 2011). One of the approach to improve health and prepare women to face the symptoms of menopause is health education (Rotem et al., 2005). It is one of the ways to provide information to menopausal women and attenuate their worries and concerns about menopause, which also leads to development of healthier behaviors (Tsao et al., 2007).

Sexual dysfunction in part is due to the lack of knowledge and experience about sexual matters (Sadock, Sadock and Levin, 2007). Lack of knowledge and communication skills in couples have to do with many marital problems so that the couple would be more successful in realizing their partner's needs and feel more satisfaction with their marital life when they know about their partner's wishes and needs at different ages (Yoshany et al., 2017). Moreover, sexual education provides individuals with the information needed to achieve common objectives, satisfaction of needs, and personal, social and family life balance (Baron and Byrne, 2004). There are several advantages in sexual educations including feeling higher peace of mind with regard to sexual desire, improvement of communication skills about sexual matters, higher tolerance to other's behaviors, preferences, and personal values (Eisenberg et al., 2010).

Taking into account that the authors found no study on surveying the effects of sexual educations and the effects on marital satisfaction of Muslim postmenopausal women and given the importance of sexual matters in postmenopausal period and that providing menopausal education and consultation is part of midwives experts' tasks (Nejati and Rasoulzadeh, 2009). On the other hand, studies have been conducted on educational programs for spouses of postmenopausal women and their impact on marital satisfaction has been done but not intervened on their own (Yoshany et al., 2017). Therefore, the present study is an attempt to survey the effects of sexual and communication skills educations on marital satisfaction in postmenopausal women with sexual dysfunction.

Materials and Methods

This randomized, controlled trial is part of a larger study. The study was carried out based on a controlled random trial on Muslim married postmenopausal women at the age range 45-55 years who had a family file in the health centers located in the south of Tehran-Iran. The study was carried out from the early July 2013 to the early May 2014.

Inclusion criteria were Muslim, married, menopause started one year age at least or five years ago at most, no infertility history, elementary education at least, no history of participation in sexual-centered menopause education courses, sexual dysfunction (female sexual function index – FSFI <28) (Mohammadi, Heidari and Faqihzadeh, 2008) and no sign of depression (Beck depression inventory-second edition- BDI-II<18) (Toosi, Rahimi and Sajjadi, 2017). Exclusion criteria were reluctance to participant, development of the diseases that might affect sexual function of the participants and their spouses (e.g. premature ejaculation and cardiovascular, nervous, thyroid, and cancer disease), using drugs that may influence sexual function of the subjects (e.g. psychedelic, cardiovascular, and hormonal drugs), facing stressors (divorce, death of the spouse, serious diseases), smoking addiction (the participant or her spouse), and psychological diseases (self-statement).

Sampling was random and done in two stages. At first, a list of health centers located in the south of Teheran City was obtained from http:/sthn.tums.ac.ir and then three centers of these were drawn (simple random method). Afterward, the authors visited the health centers and prepared a list of women at the age range 45-55 based on the available family lists and active files.

The participants were briefed about the purposes and informed that filling out the questionnaires would only take 15-20 min; in addition, the participants signed a written letter of consent before entering the study. At first, demographics, BDI-II, and FSFI were filled out by

the participants. The subjects with BDI-II>17 were excluded and referred to a psychologist and those with FSFI<28 remained in the study. Afterward, those remained in the study were once more invited to the health centers to fill out Enriching and Nurturing Relationship Issues and Happiness (ENRICH) and FSFI questionnaires.

The sample size was determined based on similar studies conducted in Iran (Yousefi et al., 2010) equal to 31 per group (CI=95% and power of: 90%). Given that the study was carried out in more than one health center and with design effect equal to two and a 10% possible dropout rate, 50 participants were elected in each group.

Participants were randomly assigned to the control and intervention groups with an allocation ratio of 1:1 in blocks of four and six. Opaque sealed envelopes numbered sequentially with the group type written in them were used for allocation concealment. The envelopes were prepared by a researcher not involved in data collection. The envelopes were opened after completing the pre-intervention questionnaires. Therefore, before random assignment of participants, researcher and participants were unaware of what participants were assigned to each group (Allocation Concealment). Finally, 50 participants were allocated to each group. The experimental group received sexual and communication skills education and the control group received only routine trainings of the health center. Blinding the researcher was not possible due to the type of the intervention; however, the evaluator (assistant researcher) and data analyst were blinded.

The education course was held as four weekly sessions in three health centers. The number of participants in each session ranged from 11 to 17 individuals. The last 15 minutes of each session would be dedicated to answering probable questions. Education contents of each session are sexual issues and communication skills. The educational intervention was held by the first author (a MSc. of midwifery) and a clinical psychologist with PhD degree. At the end of the course, the participants received an educational booklet on menopause, women and men's reproduction organs, sexual relationship issues and communication skills. The booklet was codified with the help of faculty board members of Tehran University of Medical Science based on the available books and recent publications.

To answer the further questions of the participants in the experimental group, to ensure that they follow the recommendation and guidelines, and to remind them to come to the health centers and fill out the questionnaires at posttest stage, the authors called them by telephone once a week. To evaluate the effects of the educational intervention, the participants in the experimental and the control groups filled out FSFI and ENRICH questionnaires were completed before and eight weeks after intervention. Also, BDI-II questionnaire before the study was completed to select the non-inclusion of patients with depression.

To ensure blindness of the study, the filled out questionnaires were collected by an individual not involved in the study design and aware about filling out the questionnaire. In observance of the moral codes, the educational booklet was also provided to the members of the control group after the study.

The socio-demographic information questionnaire gathered information like age, menopause age, education level, job, adequacy of monthly income, body mass index (BMI) and the spouse's job and education level.

BDI-II is a self-statement questionnaire with 21 items that measures symptoms of depression and its severity. The statements are designed based on Likert's four-point scale. The total score is obtained by adding the score of all statements (min=0 and max=63). The obtained score is interpreted as no depression for score range 0-13, trivial depression for score range 14-19, medium depression for score range 20-28 and severe depression for score range 29-63 (Khazaei, Rostami and Zaryabi, 2011). According to some authors, 18 is the cut point (Toosi, Rahimi and Sajjadi, 2017; Yangin et al., 2008) and based on which about 92% of the cases with major depression disorder are determined correctly (Toosi, Rahimi and Sajjadi, 2017). Fata et al. reported psychometric parameters of the questions ($\alpha = 0.91$, split-half correlation coefficient = 0.89 and reliability 94%) (Fata et al., 2005).

FSFI is designed by Rosen et al. to evaluate sexual function of women. Sexual function over past four weeks are measured in the six fields of desire (2 questions), arousal (4 questions), lubrication (4 questions), orgasm (3 questions), satisfaction (3 questions), and pain (3 questions). The higher score indicates better sexual function (Safarinejad, 2006). Validity and reliability of the scale were measured by Mohammadi et al. (2008) and Cronbach's alpha was obtained higher than 70% (Mohammadi, Heidari and Faqihzadeh, 2008).

ENRICH questionnaire was introduced by Olson, Druckman and Fournier (Fowers and Olson, 1989) and it is considered by many authors as a reliable tool to measure satisfaction level of marital relationship. The 47-question form of the tool was designed by Soleymanian (1994) with 11 aspects including idealistic distortion, marital satisfaction, personality issues, communication, conflict resolution, financial management, leisure activities, sexual relationships, child, parenting, family and friends and religious orientation, In their study, all aspects were preserved, except for equalitarian roles (Rasooli, 2001; Soleymanian, 1995). After balancing, the obtained score is converted into t-score and to interpret it, scores above 70 indicate very high marital satisfaction, scores 60-70 indicate good satisfaction, scores 40-60 indicate relative marital satisfaction, scores 30-40 indicate dissatisfaction, and score below 30 indicate very

high dissatisfaction (Azimian et al., 2017). Reliability of the questionnaire was reported 95% based on Cronbach's alpha. According to Rasooli (2002), validity of the questionnaire was equal to 0.92 (Rasooli, 2001; Soleymanian, 1995).

Normality of quantitative variables by the groups was confirmed using Kolmogorov-Smirnov (K-S) test. General linear model was used for comparison of the groups in terms of follow-up scores adjusted for the baseline values (before intervention). Sidak was used for multiple comparisons among the groups. SPSS version 19 was used for data analysis. P-values of less than 0.05 were considered statistically significant.

Results

After 8 weeks, five participants from the intervention group (two failed to attend the classes, one lost her father, one due to disease, and one failed to fill out the posttest questionnaires) and three participant from the control group (two did not answer their phone, and one refused to fill out the posttest questionnaires) were lost to follow-up (Figure 1).

The two groups in the study were homogeneous in terms of socio-demographic characteristics. Baseline socio-demographic characteristics are listed in Table 1. Mean ± SD scores of the BMI was 27.63±3.29 and 75% of the participants were overweight or obese.

Mean ± SD scores of sexual function of the postmenopausal women before the intervention in the intervention and control groups were 19.62±6.32 and 19.84±6.25 respectively, which means no significant difference between the two groups based on independent t-test (p= 0.87). while, mean ± SD of total score of sexual function after the educational intervention in the intervention and control groups were 22.09±4.25 and 19.25±5.90 respectively, which means a significant difference based on independent t-test (P=0.009).

The results of McNemar test before and after intervention in the control group did not show any significant difference in any aspect of sexual function, while this difference was significant in the intervention group. Also, the total score of sexual function after intervention was increased in the intervention group compared to control, which was statistically significant (P<0.001).

Based on independent t-test, total scores of marital satisfaction before the intervention was not significantly different between the two groups. However, the results showed a significant difference in this regard eight weeks after the intervention so that marital satisfaction in the intervention group increased from relative satisfaction before the intervention (59.05±17.69) to good satisfaction (63.205±17.69) after the intervention. It is notable that marital satisfaction in the control group remained at relative satisfaction throughout the study.

By controlling the base score of marital satisfaction before the intervention, total score of marital satisfaction eight weeks after the intervention in the intervention group increased significantly [adjusted difference:7.78, (95% CI; -4.43 to -11.14)] (P<0.001). Also the educational intervention resulted in an improvement of all aspects of marital satisfaction except for the aspects financial management and religious orientation (Table 2).

Discussion

The findings showed the 4 sessions of the weekly education on sexual issues and communication skills improved marital satisfaction in Muslim postmenopausal women with sexual dysfunction. Expect for the aspects financial management and religious orientation, the intervention was effective on the improvement of other aspects of marital satisfaction. In addition, the intervention increased the total score of sexual function in the menopausal women.

Based on the investigations, this study was the first to examine the effect of educational interventions on the marital satisfaction in Muslim postmenopausal women. Therefore, we discuss the results of similar studies.

Rowland and Haynes (1987) showed that during the course and 4-week after educational intervention of enriching sexual relationship for the elderly couples, a significant increase was observed in sexual satisfaction, the frequency of sex, positive attitudes about sexual relationships, the creation of dynamic roles in sexual relationships and marital satisfaction. Their results are consistent with the present study. The probable reason for this consistency can be the positive effects of education on the attitudes of postmenopausal women with regard to sexual issues and marital relationship, which might have improved performance of the participants as to sexual activities and marital satisfaction.

Our results are consistent with Shahsiah et al. (2011) who examined the effects of sexual education on the improvement of marital satisfaction in the couples living in Isfahan-Iran. As they reported, the education improved the marital satisfaction and its aspects such as satisfaction with the spouse's personality, communication with the spouse, conflict resolution, and sexual relationship; the improvement

in the two aspects leisure activities and family and friends was not significant. The reasons for the inconsistent part of the results with regard these two aspects might be the difference between the subjects in these two studies as they focused on the young couples and the present study focused on the postmenopausal women. Probably, the young have higher expectations about the way of spending leisure time and companionship of their partners and/or they might be more dependent on their friends. On the other hand, postmenopausal women are older and have extended families and might have far smaller group of friends comparing with the young.

The results revealed no significant differences between the two groups as to religious orientation and this is consistent with Olleya et al. (2006) who argued that their educational course had no significant effect on the religious orientation of the subjects. However, Ahmadi et al. studies the role of religion in marital satisfaction in the couples living in Tehran-Iran and reported inconsistent results with the present one (Ahmadi and Hosseini Hossein-abadi, 2009). The inconsistency might be due to the fact that religion and beliefs are deep rooted in one's life and a short-term intervention program might not have a notable effect on the religious aspect of marital satisfaction. In addition, since the educational intervention here focused more on the sexual matters and the communication skills, improvement in the beliefs might have been neglected to some extent.

Youshany et al. (2017) reported that education on the menopause issues to menopausal women and their partners improved the score of marital satisfaction in the couples. After the intervention, the menopausal women showed a significant increase in the score of marital satisfaction and all its aspects except for personality issues, financial management, sexual relationship, and religious orientation. Their results are consistent with the present study expects for personality issues and sexual relationships. The differences between the results can be explained by the different type of educational intervention as they emphasized in their educations on menopause, the symptoms, how to manage it and the supportive role of the spouse. On the other hand, the present paper, in addition to these issues, also focuses on sexual issues and communication skills.

Tavakolizadeh et al. (2013) showed that cognitive-behavioral educational program improved marital satisfaction in the women with hypoactive sexual desire disorder. They reported results consistent with present study and probably and in addition to the improvement of attitudes of the subjects, the intervention has resulted in higher knowledge and adaptability to the sexual issues and the communication skills of the couple, which in turn resulted in the improvement of marital satisfaction.

The relationship between improvement of awareness and attitudes toward sexual issues with increasing marital satisfaction has been highlighted by other studies. Consistent with the present study, Kalantary et al. showed that sexual knowledge and positive attitudes toward sexual issues were significantly and positively related to marital satisfaction (Kalantari, Esfahani Asl and Bayat, 2012).

Jamali et al. reported that the individual's attitude and awareness were significantly related to sexual function during menopause (Jamali and Rahmanian, 2016). This is consistent with our results as our results showed a significant increase in marital satisfaction as a result of the educational intervention in the intervention group comparing with the control group. One reason for this consistency can be the increase in awareness and the improvement of attitudes of the participants about sexual issues, which led to the improvement of marital satisfaction.

A study by Cooper (1986) evaluated effectiveness of a 4-week sexual enhancement and a communication training program on sexual and marital satisfactions of the subjects and showed that the couples in the intervention group enjoyed higher satisfaction with their sex after the study. In addition, the intervention group experienced more affection and sympathy and reported higher satisfaction with their marital relationships. These results are consistent with the present study.

Parvin et al. (2014) carried out a quasi-experimental study on nurses to examine the effect of life skills education on marital satisfaction. The intervention consisted of four educational sessions of answering questions, discussions, displaying contents about the communication and the elements of an effective communication, styles of dealing with different situation, active listening, conflict resolution, mine/your messages, anger control, courageous behavior, time management and stress management. After the intervention, a significant improvement in all the aspects of marital satisfaction was observed. The highest satisfaction level was observed in religious attitudes and marital satisfaction and the lowest level of satisfaction was observed in personality issues and communication aspects. Except for religious orientation, their results are consistent with the present study. The probable reason for the inconsistency in religious orientation might be the different educational contents.

A strength of the present study is its reliance on ENRICH questionnaire, which has a high reliability and validity for Iranian population. Another strength is its focus on women with sexual dysfunction, which, according to a review of existing and available literature, has not been performed in this group, before.

This study have several limitations. The first, the subjects were selected from unique cultural specifications of Iranian societies, the educational intervention was not held for the husbands. Future studies can also take religious and cultural concerns of the couples into

account. Secondary, in this study, women without a history of specific disease were studied. Therefore, the study results cannot be generalized to other people suffering from certain diseases, so future studies should be considered.

Conclusion

Given the findings, 4 sessions of the weekly education on sexual issues and communication skills for the postmenopausal women with sexual function disorder may result in an improvement in marital satisfaction and sexual function. Therefore and given the simplicity and ease of implementation of the method followed here, developing programmed and codified educational courses for the study population is recommended. Attending such educational courses can improve quality of life and efficacy of the elderly women in a key stage of their lives.

Aknowledgement

This article was registered in the Iranian registration system with IRCT201304145912N10 on 13 October 2013 before starting participant recruitment. We thank all the participants in this research.

Ethical issues

None to be declared.

Conflict of interest

The authors declare no conflict of interest in this study.

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Table 1. Socio-Demographic characteristics of postmenopausal women in two groups

Variables	Intervention n (%)	Control n (%)	P value	Variables	Intervention n (%)	Control n (%)	P value
Women's age (year)				**husband's age (year)**			
47-49	6 (12.0)	5 (10.0)	0.72 †	< 55	5 (10.0)	6 (12.0)	0.94 †
50-52	20 (40.0)	17 (34.0)		55-60	25 (50.0)	24 (48.0)	
53-55	24 (48.0)	28 (56.0)		> 60	20 (40.0)	20 (40.0)	
Women's education				**Husband's education**			
Elementary	19 (38.0)	23 (46.0)	0.88¥	Elementary	19 (38.0)	21 (42.0)	0.83 ¥
Guidance	15 (30.0)	8 (16.0)		Guidance	12 (24.0)	9 (18.0)	
High school	7 (14.0)	8 (16.0)		High school	5 (10.0)	3 (6.4)	
Diploma	5 (10.0)	6 (12.0)		Diploma	11 (22.0)	13 (25.5)	
University	4 (8.0)	5 (10.0)		University	3 (6.0)	4 (8.5)	
Age difference with spouses (year)				**Husband's Job (employed)**			
< 5	15 (30.0)	20 (40.0)	0.36 †	Unemployed	2 (4.0)	5 (10.0)	0.80 †
5-10	31 (62.0)	24 (48.0)		Worker	4 (8.0)	4 (8.0)	
>10	4 (8.0)	6 (12.0)		Employed	4 (8.0)	4 (8.0)	
Marriage age (year)				Free	15 (30.0)	12 (24.0)	
< 15	8 (16.0)	13 (26.0)		Retired	25 (50.0)	25 (50.0)	
15-20	37 (47.0)	27 (54.0)	0.11 †	**Women's Job (employed)**			
> 20	5 (10.0)	10 (20.0)		Housewife	44 (88.0)	44 (88.0)	0.41*
				Working at home or outside the home	6 (12.0)	6 (12.0)	

Data represent number (%) except otherwise indicated, †Chi-Square, ¥Linear-by-Linear, *Fisher exact test

Table 2. Comparison of women's marital satisfaction and its subscales between the study groups

Variables	Educational intervention Mean (SD)*		Control Mean (SD)		Comparison of two groups	P Value
	Before intervention (n=50)	**After intervention (n=45)**	**Before intervention (n=50)**	**After intervention (n=47)**	****MD (95%CI)**	
Idealistic distortion	49.99 (28.97)	56.66 (23.33)	47.60 (26.50)	44.41 (26.58)	10.60 (-17.37 to -3.84)	0.002
Marital satisfaction	50.90 (21.92)	56.25 (19.10)	49.13 (20.40)	46.60 (19.61)	8.53 (-13.74 to -0.96)	0.005
Personality issues	49.65 (21.80)	56.53 (18.84)	47.14 (21.85)	45.61 (23.12)	9.45 (-16.48 to -2.42)	0.009
Communication	60.77 (23.47)	66.72 (17.78)	58.40 (20.95)	56.59 (18.30)	8.81 (-14.31 to -3.30)	0.002
Conflict resolution	51.75 (21.08)	59.04 (14.33)	45.31 (21.01)	43.34 (22.80)	12.08 (-18.42 to -5.74)	<0.001
Financial management	66.29 (25.18)	67.59 (20.19)	59.48 (24.85)	59.39 (23.78)	3.50 (-9.31 to 2.31)	0.23
Leisure activities	59.26 (22.02)	63.20 (19.59)	52.61 (21.56)	5075 (19.62)	7.34 (-11.66 to -3.03)	0.001
Sexual relationship	38.19 (23.01)	44.76 (19.41)	42.42 (20.93)	39.76 (19.65)	7.35 (-13.74 to -0.96)	0.02
Children and parenting	64.86 (22.74)	70.14 (19.89)	64.22 (22.06)	62.62 (21.02)	7.11(-13.10 to -1.11)	0.02
Family and friends	75.37 (18.53)	79.07 (15.92)	71.67 (17.67)	70.34 (21.03)	5.88 (-11.11 to -0.65)	0.002
Religious orientation	81.38 (24.33)	82.50 (23.56)	75.93 (14.65)	72.60 (25.42)	5.41 (11.25 to -0.45)	0.07
Total	**59.05 (17.69)**	**63.85 (12.07)**	**55.51 (14.93)**	**5382 (13.21)**	**7.78 (-11.14 to -4.43)**	**<0.001**

Data indicate mean ± standard deviation; number of participants was 50 in each group at baseline (before intervention), it was 45 in the educational group and 47 in the control group at the 8 weeks after first educational intervention.

Mean difference for the baseline comparison using independent *t*-test, adjusted mean difference (adjusted by the baseline values) for the follow-up comparisons using univariate general linear model. Higher scores indicated better marital satisfaction.

*Mean (SD): Mean (standard deviation)

**MD (95% CI): Mean Difference (95% Confidence Interval

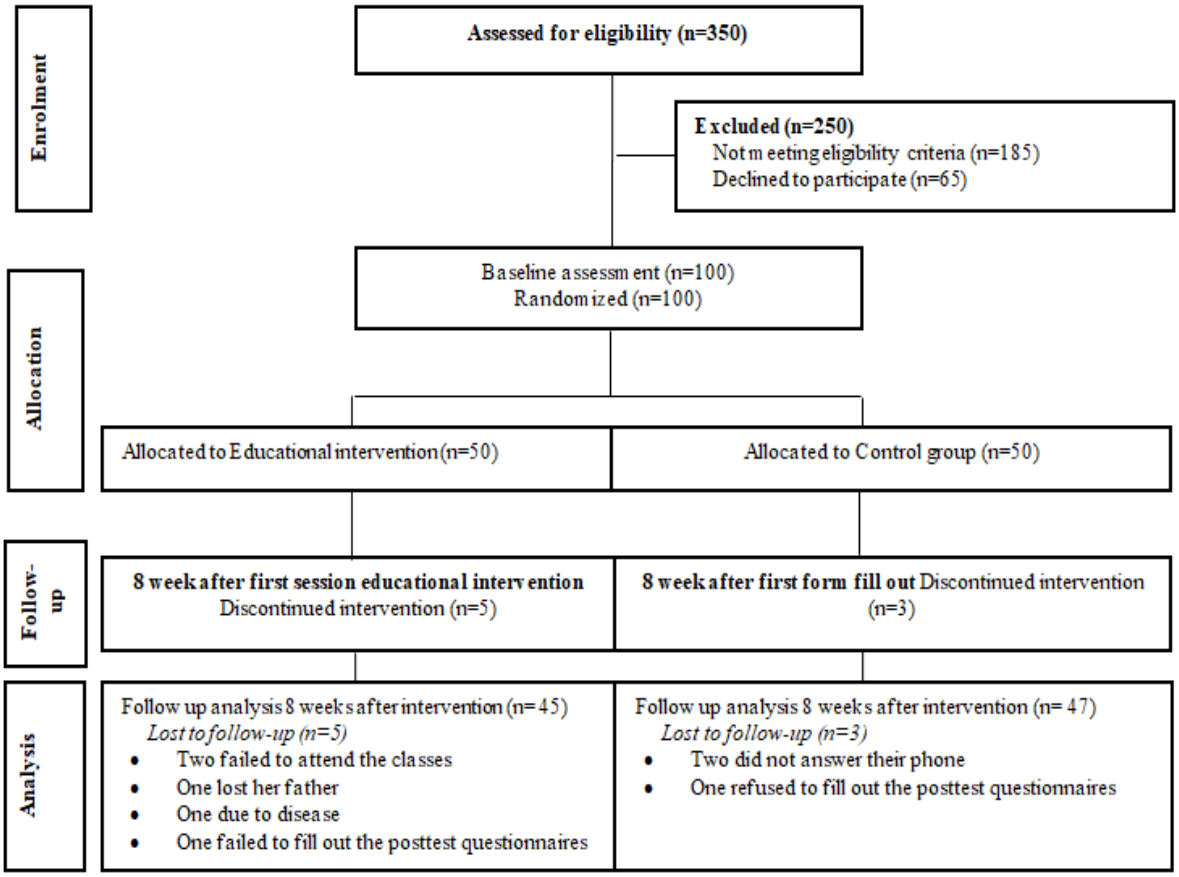

Figure 1. Flowchart of the study