

## The Effect of Exercise Training through Multimedia and Pamphlet on Postmenopausal Women's Quality of Sexual Life

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ARTICLE INFO	ABSTRACT
<p><i>Article type:</i> Original article</p>	<p><b>Background &amp; aim:</b> The quality of sexual life is an important dimension of women's quality of life. Various factors including medication, education and regular exercise modulate menopausal symptoms and improve the quality of life in postmenopausal women. The present study was conducted to compare the effect of exercise training through multimedia and pamphlets on the quality of sexual life in postmenopausal women.</p>
<p><i>Article History:</i> Received: 03-Apr-2021 Accepted: 12-Sep-2021</p>	<p><b>Methods:</b> This experimental study was performed on 70 postmenopausal women referred to the social security clinic in Quchan. A 45-minute training session was held for all individuals and then they were randomly assigned in the pamphlet (n=35) and the multimedia group (n=35). The tools included demographic questionnaire, quality of sexual life questionnaire, pelvic floor exercise checklist, and the criteria of measuring pelvic floor muscle strength (Brink scale). Data were analyzed using inferential statistics including Chi-square, Friedman, T-student, Wilcoxon and Mann-Whitney tests.</p>
<p><i>Key words:</i> Exercise Education Multimedia Pamphlet Quality of Sexual Life Postmenopausal Women</p>	<p><b>Results:</b> The mean score of quality of sexual life in the multimedia group before the intervention was 73.15±1.72 that increased to 79.07±11.3 after the intervention (P=0.024). Also, in the pamphlet group, it was 74.3±09.59 before the intervention that increased to 80.52±08.27 after the intervention (P=0.007). However, no significant difference was found between the two groups after the intervention comparing the mean score of quality of sexual life.</p> <p><b>Conclusion:</b> Exercise training through both multimedia and pamphlets had a positive and similar effect on increasing postmenopausal women's quality of sexual life. Therefore, standard training pamphlets is recommended in providing services to postmenopausal women.</p>

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### Introduction

Menopause is an important and common phenomenon in women's life that causes a transition to the new biological condition and the gradual loss of reproductive activity (1). Increased life expectancy has led to that one-third of women's life pass in postmenopausal period. In fact, menopause is a complex phenomenon that requires simultaneous biological, psychological, and social changes in life, and women's image of menopause will affect follow-up and care during this period (3).

Menopausal women's problems, in addition to putting pressure on the health care system, caused significant stress and disability for them and their negative attitude toward menopause (4). Therefore, it is very important to pay attention to the women's quality of life during menopause in terms of public health (5).

Quality of sexual life is an important dimension of women's quality of life that includes the evaluation of women regarding their positive and negative aspects of sexual

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relationship and their response to this evaluation. Quality of sexual life is a tool to examine the relationship between sexual problems and quality of life. Quality of sexual life is an interactive and dynamic situation that can change over time with changing the condition (5, 6). One of the women's problems during this period is pelvic floor muscles relaxation that causes pelvic muscles dysfunction, urinary problems, painful intercourse, sexual dysfunction and sexual dissatisfaction. Pelvic floor muscle relaxation syndrome occurs in 50-60% of women in all ages (7). Various factors, including education, medication, and regular exercise modulate menopausal symptoms and improve sexual function (8). Some studies reported that exercise is effective in such cases (9-11).

With regard to the ease and cost-effectiveness of pelvic floor muscle strengthening exercises, efforts have been made to enhance the effectiveness of these exercises (11, 12). These exercises are recommended to strengthen the pelvic floor muscles. Designing regular exercise programs can be beneficial for postmenopausal women; this vulnerable group can use exercise programs to reduce menopausal complications (14). Given that pamphlets are often used as a common tool in our treatment settings, and with increasing development of facilities for the use of multimedia educational tools, the present study was conducted with aim to compare the effect of exercise training through multimedia and pamphlet on postmenopausal women's quality of sexual life.

## Materials and Methods

This experimental study was performed on 70 postmenopausal women with inclusion criteria who referred to the Social Security Midwifery Clinic of Quchan city in 2018. Since no similar study was found by searching databases, the usual methods in pilot studies were used to determine the sample size. Thus, at first, odd numbers were assigned to the pamphlet group and even numbers to the multimedia group by ordinary lottery. The eligible individuals were referred and placed in one of the two groups based on the assigned number. Inclusion criteria were age of 45-60 years, being Iranian, living in Quchan, having no menstruation for at least one year after normal

menstruation, experiencing menopause naturally and not due to removal of uterus, ovaries, chemotherapy or radiation therapy, also no history of pelvic floor exercises during the last six months, literacy of reading and writing, lack of a specific medical illness and mental health problems, non-smoking, living with her own spouse and having sex, and ability to use CD.

Exclusion criteria were medical and psychiatric diseases, history of pelvic surgery or previous surgery for correction of the problems caused by pelvic floor muscle relaxation, having regular exercise or being a professional athlete, smoking, using alcohol, drug addiction, having uterine prolapse or cystocele or grade 3 and 4 rectocele, also having mass, edema, varicose veins or severe vaginal ulcer which interfere exercise, as well as symptoms of moderate or severe vaginal atrophy. Also, in the cases of taking drugs affecting sexual function or the occurrence of a stressful event during the study and not doing exercise for two sessions, the participants were excluded from the study. In order to comply with ethical standards, written consent was obtained from the subjects to participate in the research; they were assured that the data is confidential and will be provided to them if necessary. Individuals were selected as the sample if they had desire to participate in the study and met the inclusion criteria.

The demographic questionnaire was completed. The variables were measured using the tools. The pelvic floor muscle strength was determined by the researcher with the Brink scale. The educational content included quality of sexual life, menopausal issues, signs and symptoms, anatomy, importance, tasks and how to exercise pelvic floor muscles strength. The exercise program included 12 exercises; the researcher taught a 7-minute video of exercises and then doing the exercises and additional explanations along with PowerPoint in 8 groups of 7-10 people for 45 minutes.

The first group was given an educational pamphlet and the second group an audio-visual CD containing sports exercises which could be done at home. The exercises include kegel, knack, quick flick, and bridge exercises. The subjects were asked to do the sport exercises in CD and educational pamphlet for 6 weeks, 3

times a week. After ensuring about adequate training of the subjects, a daily sports registration checklist was provided to record how they do the sports.

At the end, the telephone numbers and addresses of the subjects were recorded to access and contact them. The researcher's phone number was also provided to the subjects to answer any questions. The researcher followed up the participants every week by phone in order to perform regular and correct exercises. They were told that they could leave the study at any time. Eligible subjects were asked to refer this center after completing this 6-week course to answer the post-test questionnaire and the final examination (measurement of pelvic floor muscle strength, degree of cystocele, rectocele and prolapse).

The tools included demographic information questionnaire, SQOL-F sexual quality of life questionnaire, pelvic floor exercise checklist, pelvic floor muscle strength measurement – (Brink scale), Oxford rating system, mucosal and vaginal description assessment tool, digital scale and adult height measurement to measure weight and height to calculate body mass index and speculum to observe the vagina and cervix.

In this study, the quality of sexual life is defined as the score that a person obtains from the SQOL-F questionnaire, which has 18 questions and 4 dimensions, psycho-sexual feelings (2, 3, 7, 8, 10, 16, 17), sexual satisfaction and relationship satisfaction (1, 5, 9, 13, 18), and self-worthless (4, 6, 15) and scoring 18-108; a higher score indicates higher quality of sexual life. The Brink Scale is a 4-point tool (1, 2, 3, 4) that is measured based on three criteria: pressure, horizontal finger movement, and time. The minimum score is 3 and the maximum score is 12. If the score obtained from this criterion increases after the intervention, it indicates an increase in the strength of the pelvic floor muscles (15). The sexual quality of life questionnaire was designed by Simond et al. (2005) and its validity was confirmed in Iran by

Pakpour (2013). The reliability of this form was also confirmed by Pakpour with internal consistency method (Cronbach's alpha coefficient in the range of 0.84 to 0.98) (8). The validity of this questionnaire in the present study was confirmed by content validity method. Its reliability was determined through the evaluators' agreement method by the researcher and researcher-aid, which was at the same level in terms of scientific level and researcher's experience, and was confirmed with  $r = 0.87$ .

Data were analyzed using SPSS16 statistical software and Chi-square, Friedman, t-test, Wilcoxon and Mann-Whitney tests.  $P < 0.05$  was considered statistically significant. The study was approved by the ethics committee of Mashhad University of Medical Sciences under code No. IR.MUMS.NURSE.REC.1397.020.

## Results

In this study, at first 70 women entered the study and finally 66 (33 in the pamphlet group and 33 in the multimedia group) completed the study. Four subjects (1 due to the occurrence of a stressful accident, 2 due to not exercising for more than 2 weeks and 1 due to non-refer after 6 weeks) were excluded from the study. The first group consisted of multimedia education with mean age of  $51.99 \pm 4.97$  years and the second group with pamphlet education with mean age of  $51.57 \pm 37.4$  years.

The two groups were similar in terms of education level, occupation, body mass index, husband's education, place of residence, husband's occupation, living with other family members (Table 1) and number of pregnancies, number of deliveries, number of normal deliveries and cesarean deliveries, number of children (Table 2), having another wife, difficult delivery, duration of menopause, use of oils and moisturizers, satisfaction with marriage, satisfaction with marital relationship, satisfaction with emotional relationship, vaginal atrophy score and Brink scale score.

**Table 1.** Characteristics of subjects in the two groups

Variables	Pamphlet N (%)	CD N (%)	*P-value
<b>Education</b>			0.807
Reading and writing	7(21.9)	6(18.8)	
Elementary	7(21.9)	8(25)	
Secondary	6(18.8)	7(21.9)	
High school	10(31.3)	7(21.9)	
University	2(6.3)	4(12.5)	
<b>Husband's education</b>			0.666
Reading and writing	6(18.2)	6(19.4)	
Elementary	9(27.3)	6(19.4)	
Secondary	6(18.2)	7(22.6)	
High school	8(24.2)	5(16.1)	
University	4(12.1)	7(22.6)	
<b>Residence place</b>			0.732
Impersonal	4(12.9)	5(16.1)	
Personal	27(87.1)	26(83.9)	
<b>Job</b>			0.427
Housewife	30(93.8)	27(84.4)	
Employed	2(6.3)	5(15.6)	

\*Chi-square test result

**Table 2.** Mean and standard deviation of midwifery information of subjects in the two groups

Variables	Pamphlet	CD	*P-value
	Mean± SD	Mean± SD	
Number of pregnancies	4.07±1.88	3.77±1.22	0.63
Number of deliveries	3.89±1.85	3.6±1.1	0.75
Number of vaginal deliveries	3.69±1.85	3.38±1.35	0.63
Number of cesarean deliveries	2±1.73	1.25±0.71	0.57
Number of children	3.56±1.45	3.57±1.17	0.86
Duration of marriage	32.31±10.83	28.94±7.62	0.11
Body mass index	27.26±4.45	26.83±5.72	0.64

\*Paired t-test or Mann-Whitney

Table 3 showed the mean quality of sexual life before and after the intervention in the two groups. The mean score of quality of sexual life in the multimedia group before the intervention was 73.15±1.72 which increased to 79.07±11.33 after the intervention (P = 0.024). In the pamphlet group, the mean score of quality of sexual life before the intervention was 74.3±09.59 and increased to 80.52±08.27 after the intervention (P = 0.007); no significant difference was observed between the two groups after the intervention in terms of the score of sexual quality (P = 0.968). There was a significant difference in sexual satisfaction index in the pamphlet group after the intervention

compared to before the intervention (P = 0.001); while no significant difference was observed in the multimedia training group (P = 0.096).

Significant differences were found after the intervention compared to before the intervention in the indicators of psycho-sexual feelings, self-worthlessness and sexual repression, as well as the quality of sexual life. Also, comparing the differences between post-intervention and pre-intervention in the two educational groups, no significant difference was observed between the two groups in any of the indicators. Covariance test was not performed due to the homogeneity of the answers in the groups before the intervention.

**Table 3.** Mean and standard deviation of quality of sexual life score before and after the intervention in the two study groups and the results of Wilcoxon or paired t-test for pamphlet (P1) and multimedia (P2) training groups and comparison of two groups (P3)

Variable	Pamphlet		CD		P1	P2	P3
	Before the intervention	After the intervention	Before the intervention	After the intervention			
Total quality of life	59.9±03.74	27.8±52.80	73.15±1.72	33.11±07.79	0.007	0.024	0.968
psycho-sexual feelings	13.6±42.32	18.6±85.36	98.7±16.32	84.6±4.36	0.005	0.035	0.989
Sexual satisfaction	42.3±82.11	38.3±85.14	47.48±48.13	21.3±33.11	0.001	0.096	0.367
self-worthlessness	63.2±03.14	37.2±16	28.4±13.13	13.3±83.15	0.012	0.004	0.543
sexual repression	44.3±76.12	94.2±82.15	54.4±32.13	33.3±5.15	0.001	0.011	0.470

### Discussion

The findings of the present study showed an increase in the score of sexual life quality after the intervention in the two groups; significant difference was observed in comparing the means. In the index of, significant difference was found after the intervention compared to before the intervention in sexual satisfaction in the Pamphlet group; while in this index, there was no significant difference in the multimedia group. In the indicators of psycho-sexual feelings, self-worthlessness and sexual repression, as well as the quality of sexual life, generally significant difference was found after the intervention compared to before the intervention.

Also, comparing the difference after the intervention compared to before the intervention between the two groups, there was no significant difference between the two groups in none of the indicators (psychological-sexual feelings, self-worthlessness and sexual repression as well as quality of sexual life). However, not all studies have demonstrated the usefulness of pamphlets as an educational tool. In this regard, another health-focused study in Australia by Tranbal Weirweig (2008) to determine the effectiveness of pamphlets and training sheets in encouraging the general population to undergo mammography screening examinations, training sheets were distributed once a year in 79 selected streets. Meanwhile, another 79 control sheets were distributed for comparison. The findings indicated no significant difference between the two groups in terms of performing screening examinations. In justifying this finding, we can point to the reasons such as diversity in the target group, especially in terms of education level and the abilities of reading and comprehension (16).

Also, in the study by Pajoohi et al. (2004) on osteoporosis patients, pamphlets didn't improve the patients' attitudes and function toward their disease (17). Certainly, choosing the right training methods and tools plays an important role in people's learning and desire to change health-related behaviors. However, some experts believe that all educational tools such as pamphlets and multimedia tools can increase learning and adaptation and reduce anxiety. Of course, the effect of culture on people's desire to learn should not be ignored because in some cultures, people prefer to receive content in writing and in some cultures the use of new media is welcomed. Also, in some cultures, creating an overview of the subject being taught more reduces anxiety than seeing the details of the images. Some researchers believe that the use of different educational tools such as writing, audio and video to provide information to patients are not much different and superior; the studies have shown that patients benefit from this information (18).

For example, Jamshidi et al. (2012) stated that the incidence of complications after coronary angiography was not significantly different in patients in the oral education group and the educational film group. In their study and in the present study, performing exercises using training with pamphlets and CD was taught at the beginning of the study. The researcher followed up the patients once a week by telephone about how the exercise was done according to the instructions in the pamphlet and CD and the occurrence of possible problems; the patients were encouraged to follow the exercise program regularly (19). Gisel (2007) believed that different educational methods, including written, telephone and video, each have problems and are not able to

completely solve the patients' problems. Of course, this emphasizes the ultimate goal of the treatment and care system, and we should not abandon all methods because we cannot achieve the desired maximum results. Since all educational methods, in addition to their advantages, also have disadvantages and limitations, the important issue is the correct use of these methods (20).

The results of a systematic review in this regard also showed that different results have been reported about the use of these educational tools. In most studies, there was no difference between the effectiveness of these two tools. In some studies, pamphlet was more effective and in some cases, multimedia was more effective (21). In the study of Astley et al. to compare the methods of providing information verbally, written and audio-visual file in patients undergoing coronary angiography, the amount of information reminding, anxiety and satisfaction of patients were measured. The results showed that no significant difference was found between the three methods of providing information in the amount of information reminding in any of the measurements. Also, these three methods did not have a significant difference in the level of anxiety and satisfaction with patients' information. Astley in his study suggests that one method alone is not suitable for providing information to these patients and it is better to use a combination of them. There are different educational methods to change attitudes and raise awareness; the researchers believe that people can make an informed choice with different educational methods without creating pressure or coercion and only by providing appropriate information and changing attitudes. Because awareness, attitude and behavior are learnable and acquired, and education is the tool and method to do this; multimedia tools have more effectively achieved the educational goals (22).

Waller et al. (2014) conducted a review study with aim to "evaluate the quality and impact of educational interventions on radiation therapy and chemotherapy in cancer patients." Educational interventions in these studies included written information, audiotape, video, and computer programs. The results of the

articles showed that all educational interventions increased the patient's satisfaction and knowledge and improved physical symptoms; in more than half of the studies, these interventions helped to improve mental outcomes and quality of life (22). One of the strengths of the present study is the use of two effective educational methods for women who need sexual care and services. One of the limitations of the present study is the lack of complete certainty of correctly doing the exercises at home; the researcher trusted in the accuracy of reports by the subjects.

## Conclusion

Multimedia education has a positive and similar effect to pamphlet education on increasing the quality of sexual life in postmenopausal women. Therefore, the use of standard training pamphlets is recommended in providing services to postmenopausal women.

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## Conflicts of interest

Authors declared no conflicts of interest.

## References

1. Golmakani N, Esflany A, Khadem N, Sardar MA, Shakeri MT. Effect of passive ankle dorsiflexion during pelvic floor muscle exercises strengthen on pelvic floor muscles in women with pelvic floor muscle disorders. *Iranian Journal of Obstetrics, Gynecology and Infertility*. 2012; 15(9): 15-22.
2. Pakgohar M, Sabetghadam S, Vaseg RS, Kazemnejad A. Quality of life in postmenopausal women with urinary incontinence: a cross sectional study. *Payesh*. 2014; 13(1): 73-81. [Persian]
3. Berek JS, Berek NS. *Berek and Novak's gynecology*. 15th ed. Philadelphia: Lippincott Williams & Wilkins; 2012.
4. Jenabi E, Shobeiri F, Hazavehei SM, Roshanaei G. Assessment of questionnaire measuring quality of life in menopausal women: a systematic review. *Oman Medicine Journal*. 2015; 30(3): 151-156.
5. Bo K, Talseth T, Vinsnes A. Randomized

- controlled trial on the effect of pelvic floor muscle training on quality of life and sexual problems in genuine stress incontinent women. *Acta obstetrica et gynecologica Scandinavica*. 2000; 79(7): 598-603.
6. Hojjati Z, Alipour V. Relationship between physical activity and health related anthropometric indices of university female staffs. *Journal of Hormozgan University of Medical Sciences*. 2014; 2(74): 159-167. [Persian]
  7. Symond T, Boolell M, Quirk F. Development of a questionnaire on sexual quality of life in women. *Journal of Sex & Marital Therapy*. 2005; 31(5): 385-397.
  8. Pakpour AH, Mohammadi Zeidi I, Saffari M, Burri A. Psychometric properties of the Iranian version of the Sexual Quality of Life Scale among women. *Journal of Sexual Medicine*. 2013; 10(4): 981-989.
  9. Pimenta F, Leal I, Maroco J, Ramos C. Menopause symptoms' predictors: The influence of lifestyle, health-and menopause-related, and sociodemographic characteristics. *Journal of women & aging*. 2012; 24(2): 140-151.
  10. Mirghafourvand M, Mohammad Alizadeh Charandabi S, Nedjat S, Asghari M. Effects of aerobic exercise on quality of life in premenopausal and postmenopausal women: A randomized controlled trial. *The Iranian Journal of Obstetrics, Gynecology and Infertility*. 2014; 17(114): 19-26.
  11. Asghari M, Mirghafourvand M, Mohammad-Alizadeh-Charandabi S, Malakouti J, Nedjat S. Effect of aerobic exercise and nutrition education on quality of life and early menopause symptoms: A randomized controlled trial. *Women&health*. 2017; 57(2): 173-188.
  12. Ayati C, Kadkhodaeian S, Rood sari F, Shakier M. Examine the relationship between environmental factors and the symptoms of menopause. *Mashhad University of Medical Sciences Journal*. 2009; 1(1): 40-45. [Persian]
  13. Shahali S, Kashanian M, Azari A, Salehi R. Effects of pelvic floor muscle exercises on quality of life outcomes in women with stress urinary incontinence. *Medical Journal of the Islamic Republic of Iran*. 2010; 24(3): 159-162.
  14. Lara LA, Montenegro ML, Franco MM, Abreu DC, Rosa e Silva AC, Ferreira CH. Is the sexual satisfaction of postmenopausal women enhanced by physical exercise and pelvic floor muscle training. *Journal of Sexual Medicine*. 2012; 9(1): 218-223. doi: 10.1111/j.1743-6109.2011.02516.x. [PubMed: 22023812].
  15. Mohammadi K, Heidari M, Faqihzadeh S. The validation of female sexual function index (FSFI) in the women. *Payesh Journal*. 2008; 7(2): 269-278. [Persian]
  16. Huang JP, Chen HH, Yeh ML. A comparison of diabetes learning with and without interactive multimedia to improve knowledge, control, and self-care among people with diabetes in taiwan. *Public Health Nursing*. 2009; 26(4): 317-328.
  17. Pazhouhi M, Komeyliyan Z, Sedaghat M., Baradar Jallili R., Soltani F, Ardeshir Larjani M. Efficacy and educational pamphlets for improvement of knowledge and practice in patients with osteoporosis. *Payesh*. 2004; 3(1): 67-74.
  18. Hausenblas HA, Brewer BW, Van Raalte JL, Cook B, Downs DS, Weis CA, et al. Development and evaluation of a multimedia CD-ROM for exercise during pregnancy and postpartum. *Patient Education and Counseling*. 2008; 70(2): 215-219.
  19. Jamshidi N, Abbaszadeh A, Najaf Kalyani M. Comparison of Video & Verbal Education on Satisfaction and Post-Operative Complications of Patients Undergoing Coronary Angiography. *Journal of Fasa University of Medical Sciences*. 2012; 1(4): 233-237. [Persian]
  20. Jamshidi N, Abbaszadeh A, Kalyani MN. Effects of video information on anxiety, stress and depression of patients undergoing coronary angiography. *Pakistan Journal of Medical Sciences*. 2009; 25(6): 901-905.
  21. Zarei es GKf. Educational Multimedia and Its Role in Special Education. *Journal of Exceptional Education*. 2009; 12(98): 22-30.
  22. Astley CM, Chew DP, Aylward PE, Molloy DA, De Pasquale CG. A randomised study of three different informational AIDS prior to coronary angiography, measuring patient recall, satisfaction and anxiety. *Heart, Lung and Circulation*. 2008; 17(1): 25-32.