





Impact of Self-care Educational Program on Sexual Function among Ischemic Heart Disease Patients

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Article Info	ABSTRACT
Article type: Original article	Background and Aim: Sexual activity is a multi-faceted construct that is influenced by multiple variables, including individual, social, and psychological factors. Sex education can facilitate the reduction of disease complications, especially in patients suffering from ischemic heart disease. Regarding this, the present research aimed at examining the impact of a self-care education program on sexual function in ischemic heart disease patients.
Article History: Received: 29 November 2019 Revised: 01 January 2020 Accepted: 12 January 2020	Materials and Methods: The present semi-experimental research was conducted on 60 patients afflicted with ischemic heart disease, in the Vali Asr Hospital in Qom, Iran, in 2017. The study population was assigned into two groups of control and intervention by the simple random sampling technique. The patients were subjected to self-care education via CDs. the data were collected by means of the Arizona Sexual Experiences Scale, as well as demographic and clinical form. The two research groups filled out the questionnaires prior to and a minimum of one month following the training. Data analysis was performed by Wilcoxon test, central tendency, and Mann-Whitney U test.
Keywords: Iran, Qom Myocardial ischemia Self care-education Sexual behavior	Results: According to the results, the patients in the intervention and control groups had the mean ages of 58.1 ± 5.8 and 57.66 ± 4.5 , respectively. There was a statistically significant difference in the sexual function of the intervention group after the educational intervention, compared to that before the intervention ($P < 0.05$). However, no such difference was observed in the control group between the two study stages ($P > 0.05$). Conclusion: As the findings indicated, sexual training programs could result in the improvement of sexual function in patients suffering from ischemic heart disease. Accordingly, nurses are recommended to consider such educational interventions for patients with this heart condition.

➤ How to cite this paper

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Introduction

Ischemic heart disease accounts for high mortality and morbidity globally (1). According to the statistics in the early 20th century, cardiovascular diseases were responsible for a mortality rate of $< 10\%$ across the world. However, in the late 20th century, 50% and 25% of mortality in developed and developing countries, respectively, were caused by such diseases (2). In

the same vein, there has been a growth in the number of people passing away as a result of this disease in Iran. In this regard, annually, 90,000 individuals pass away because of cardiovascular diseases (3).

Infliction with ischemic heart disease is accompanied by several psychological and physical disorders, which, in turn, affect the quality of life in

patients (4-6). A large number of patients suffering from ischemic heart disease cannot regain their full potential, particularly their sexual activity (7). Patients suffering from cardiovascular diseases face physiological disorders during sexual activity owing to vascular changes, old age, and drug-induced dysfunction (4, 8-15). In addition, the sexual activity of this group of patients can be disrupted by such psychological disorders as anxiety, fear of reinfarction and death, depression, and stress (8, 10, 16, 17). Moreover, these patients may experience changes in self-perception due to the reduction of their sexual desire, sexual dysfunction, lower frequency and quality of sexual activity, and orgasmic dysfunction.

These patients have some concerns regarding the resumption of their sexual activity, which induces stress and anxiety in their marital relationships (18-20). Despite the fact that the estimated risk of myocardial infarction and sudden death during sexual activity has been reported to be < 1%, the evidence is indicative of a 40-70% reduction in the frequency of sexual activity among coronary patients (4, 8, 9, 21, 22). The spouses suffering from cardiovascular diseases opt for precluding sex as a result of confusion and fear of sexual activity; accordingly, they develop anger because of their health condition (22-28).

Nurses can facilitate the reduction of sexual problems and enhancement of the quality of life by the adoption of such measures as counseling, sex education, and implementation of rehabilitation programs (29). In a study performed by Vassiliadou, nurses confirmed sex education; however, only 3-6% of the patients had received sexual counseling (8, 9, 30). According to the literature, some of the factors precluding the implementation of sex education include treatment team's lack of time and information, development of negative attitude toward sex, disease severity, and exacerbation of the patient's emotional state during hospital stay (8, 9, 31, 32).

The implementation of sex education for cardiovascular patients is limited in Iran given its social and cultural differences regarding sexual issues (7, 29). Little knowledge regarding this issue results in the reduction of normal capabilities, inhibition of creativity, and avoidance of sexual activity. This may also cause a failure in the resumption of sexual activity, followed by the development of anxious and insecure feelings. The patients suffering from cardiovascular diseases are afraid of having sex owing to their health consequences; accordingly, they are concerned about this issue.

Lack of attention to sex education for

cardiovascular patients can lead to the reduction of marital satisfaction, development of depression, and incidence of physical and mental disorders in patients or their family members (9, 24, 29). In a study performed by Rahimian, group therapy not only helped the patients to take advantage of their experiences and get motivated to profit from the therapy but also decreased their marital stress and modified their lifestyle (33). There are few investigations addressing sexual problems in cardiovascular patients by providing sex education upon admission, during hospital stay, and at hospital discharge.

The high prevalence of ischemic heart disease, lack of attention to sexual problems, significance of sexual activity in the quality of life, and cultural setting of Iran call for the implementation of a study in this domain. Accordingly, the present study was conducted to investigate the impact of educational videos on sexual function in ischemic heart disease patients. The results of this study can be helpful for the treatment team when planning for adopting strategies targeted toward the improvement of sexual activity in patients. To this end, the researchers developed a self-care pamphlet to eliminate the need for experienced staff to compensate for the shortage of time, reduce costs, and provide an accessible and proper instrument for sex education upon hospital discharge.

Materials and Methods

The present semi-experimental research was performed on 60 ischemic heart disease patients referring to the rehabilitation center of Vali-Asr Hospital, located in Qom, Iran, in 2017. The sample size was estimated at 27 cases for each group using the hypothesis test formula and national research ($\mu_1=60$, $\mu_2=72$, $\delta=15$, $\alpha=0.05$, $\beta=0.1$). However, given the probability of sample dropout, a total of 30 cases were considered for each group (3).

$$n = \frac{2s^2(Z_{1-\alpha} + z_{1-\beta})^2}{(\mu_1 - \mu_2)^2} = n = \frac{2 \times 15^2(1/64 + 1/28)^2}{(60 - 72)^2} = 27$$

The eligibility criteria included: 1) married status, 2) willingness to participate in the study, 3) Iranian nationality, 4) lack of any psychological problems, 5) ability to respond to researchers' questions and speak Persian, and 6) definitive diagnosis of ischemic heart disease by the physician. On the other hand, the exclusion criteria were: 1) study withdrawal, 2) re-hospitalization, 3) a disease affecting sexual function, and 4) mortality

following discharge and prior to filling out the research questionnaire. Data collection was performed using a clinical and demographic form and the Arizona Sexual Experiences Scale (ASEX). The clinical and demographic form covered such data as gender, age, occupation, education level, use of cardiac medications, and history of other underlying diseases.

The ASEX is a standardized scale consisting of 5 items assessing the extent of sexual function. This instrument covers five domains, including arousal, sex drive, vaginal lubrication, ability to reach orgasm, erection, and satisfaction with orgasm. This scale is rated on a six-point Likert scale ranging from 'very easy' (=1) to 'never' (=6). The ASEX has a total score range of 5-30, with scores higher than 18 indicating lower sexual function. Pezeshki et al. have confirmed the reliability and validity of the Persian version of this tool ($\alpha=0.83$) (34). In the present study, a Cronbach's alpha coefficient of 0.89 was obtained for this instrument.

The researchers referred to the research context to identify the eligible cases after obtaining the essential permissions. Following the random selection of the patients, they were equally assigned into two groups of control and intervention. The sampling was sustained until achieving the desired level of sample size. In line with the research ethics principles, the participants were informed about the study objectives and procedure. In addition, they gave informed consent for participating in the research. Subsequently, the demographic form and ASEX were filled out by the study population.

The intervention group was subjected to a sex education program through oral explanation and video display over the first week of rehabilitation for 60 min. The content of the program included discussions over heart disease, risk of heart attack during sexual activity, resumption of sexual activity after ischemic heart disease, necessary precautions, drug usage and its associated complications, significance of the place choice, correct position, changes in the vital signs, and warning signs during sexual relationship. At the end of the intervention, the two groups filled out the research tools once again. The questionnaire completion was performed for a minimum of one month.

After 2 months, the participants were asked to refer to the research context in order to fill out the ASEX. For the illiterate subjects, the research instruments were completed via interviewing. In line with the research ethics principles stated in the Declaration of Helsinki, anonymity terms were respected by coding the names of the patients. In addition, the patients were informed about the

possibility of study withdrawal at any stage of the study. Moreover, the patients received some explanation regarding the research objectives and process and provided informed consent. Given the sensitivity of sexual issues and for the removal of measurement biases, the research tools were administered by a researcher of the same gender with the participants.

Statistical analysis

Data analysis was performed in the SPSS software (version 13.0). The measures of central tendency were calculated for the clinical and demographic variables. In addition, the normality of data was tested using the Kolmogorov Smirnov test. The comparison of sexual function between the control and intervention groups before and after the sex educational intervention was performed using the Mann-Whitney U test. In addition, Wilcoxon test was used to compare sexual function between the two research stages (i.e., prior to and following the intervention) in both research groups. The significance level was considered < 0.05 .

Results

According to the results, 66.66% of the participants in each of the research groups were male. The mean ages of the patients in the intervention and control groups were estimated at 58.1 ± 5.8 and 57.66 ± 4.5 , respectively. Regarding the education status, about 30% of the subjects in each group had tertiary education. In addition, with regard to the employment status, 50% of the participants were employed. No underlying diseases or drug usages were reported for more than 50% of the subjects (Table 1).

Prior to the implementation of the educational intervention, the mean scores of sexual function in the intervention and control groups were 12.46 ± 2.35 and 12.77 ± 1.92 , respectively. At the post-intervention stage, the intervention and control groups had the mean sexual function scores of 11.46 ± 2.37 and 13 ± 1.66 , respectively. According to the results of the Mann-Whitney U test, there was no significant difference between the research groups in terms of sexual function prior to the intervention. However, the intervention group showed a statistically higher level of sexual function, compared to the control group after receiving sex education (Table 2).

The results of the Wilcoxon test demonstrated a significant difference in the sexual function of the intervention group after the intervention, compared to that before the intervention. However, no such difference was observed in the control group between the two study stages (Table 3).

Table 1. Demographic and clinical characteristics of study population

Variable		Intervention		Control		P-value
		n	%	n	%	
Gender	Male	20	66.66	20	66.66	0.608
	Female	10	33.33	10	33.33	
Education	Illiterate	19	63.33	20	66.66	0.5
	Literate	11	36.66	10	33.33	
Employment status	Unemployed	15	50	14	46.66	0.5
	Employed	15	50	16	53.33	
History of underlying disease	Yes	13	43.33	10	33.33	0.356
	No	17	56.66	20	66.66	
Use of cardiac medications	Yes	11	36.66	8	26.66	0.356
	No	19	63.33	22	73.33	

Table 2. Comparison of sexual function between the two groups at the two research stages

Variable	Statistic		z	P-value
	Intervention	Control		
	M±SD Median (range)	M±SD Median (range)		
Before intervention	12.46±2.35	12.77±1.92	0.371	0.711
After intervention	11±2.37	13±1.66	3.242	0.001

Table 3. Comparison of sexual function in the two groups before and after educational intervention

Table 3. Comparison of sexual function in the two groups before and after educational intervention												
Statistic Variable	Group											
	Intervention						Control					
	Mean	SD	IQR*	Range	z	P-value	Mean	SD	IQR	range	z	P-value
Sexual function (before Intervention)	12.46	2.35	3.75	7	-2.749-z	0.006	12.77	1.92	3	6	-0.984	0.325
Sexual function (after intervention)	11	2.37	4	8			13	1.66	3	5		

* Interquartile range

Discussion

The current research was targeted toward examining the impact of a self-care educational program on sexual function in ischemic heart disease patients. Our results indicated no significant difference between the two study groups in terms of sexual function before the intervention. However, following the intervention, the mean sexual function was observed to be significantly higher in the intervention group, compared to that in the control group. However, the results revealed no significant difference in the sexual function of the control group at the post-intervention stage as compared to that in the pre-intervention phase. These results are indicative of the positive effect of self-care educational programs on sexual function.

In line with our results, in a study conducted by Mirmohammad Ali Ye et al., sex education was reported to enhance sexual function among postmenopausal females (35). Likewise, Ebrahimipour demonstrated an improvement in the sexual function of the females referring to health centers after exposure to sex education (36). In addition, Karimi and Bagheri revealed that sexual

health education resulted in the improvement of sexual satisfaction among couples (37, 38).

In a study, Klein investigated the impact of sex therapy on male patients participating in the second phase of rehabilitation by subjecting the intervention group to patient education, cognitive reconstruction, emotional support, guided imagery, and drug therapy. The control group participated only in cardiac rehabilitation without receiving sexual therapy. The results of the mentioned study showed that the patients in the intervention group resumed their sexual activity more quickly than the control group after receiving sex education. Sex education was also reported to improve sexual desire, self-esteem, erection, sexual satisfaction, enjoyment of sex, and overall quality of sexual function. In the mentioned research, sex therapy was suggested to be considered an important component of cardiac rehabilitation (39).

In another study, Steinke compared the effect of sex education provided through audiovisual tools and pamphlets in cardiac patients. In the mentioned study, the patients subjected to audiovisual

education showed a statistically enhanced level of sexual knowledge and sexual satisfaction, as well as a decreased level of anxiety. In addition, the patients with cardiovascular diseases receiving educational videos were reported to resume their sexual activity 3 weeks following the occurrence of myocardial infarction. According to Stink, sexual counseling is an interaction with patients that includes the provision of information to resolve sexual problems, answer patient's questions, return to safe sexual activity, and provide appropriate solutions to their psychological and sexual problems (40).

In another study performed in 2013, sex counseling and training were found to be effective for patients with acute and chronic heart disease in the short and long run, as well as for improving the frequency and quality of sexual activity. In the mentioned study, sexual counseling was introduced as one of the most effective management plans for nurses and other health professionals. Training is one of the responsibilities of the healthcare staff. The patients should be provided with step-by-step sex education. It seems that providing education about drug, risk of sexual activity, regular exercise, family support, sexual activity, and avoidance of high-risk behaviors increase the knowledge and improve the sexual attitude of people. Therefore, such education results in the reduction of anxiety and improvement of sexual function in cardiac patients (9).

One of the limitations of the present research is the lack of assurance regarding the accuracy of responding to the items in the questionnaire given the psychological state of the participants. It was attempted to eliminate this limitation by situating the patients in a calm and comfortable environment while filling out the questionnaire. Another limitation was difference in study population regarding physiological conditions and cultural beliefs. Nonetheless, in order to overcome this limitation, the participants were provided with CDs and educational pamphlets to study at home.

Conclusion

As the findings of the present research indicated, sex education (in form of film display) resulted in the enhancement of sexual function among cardiac patients. The significance of sexual issues in these patients, as well as the consequences and scarcity of education in this domain, highlights the role of nurses in solving patient problems in this regard and enhancing their sexual function by adopting a counseling role and offering the best solution through the mediation of sexual counseling programs. Accordingly, it is suggested to deliver sex education in the hospital and proceed with it

following hospital discharge. The use of CDs for sex education provides everyone with an opportunity to take advantage of such training regardless of their educational level or temporal constraints. In addition, it is recommended to perform follow-up tests after education at various intervals.

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Conflict of interest

The authors declare that they have no conflicts of interest.

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