

Short Communication

Effects of health belief model-based video training about risk factors on knowledge and attitude of myocardial infarction patients after discharge

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Abstract

BACKGROUND: Ischemic heart diseases are the most common cardiovascular diseases. This study aimed to assess the effects of video training about risk factors based on health belief model on knowledge and attitude of myocardial infarction patients after discharge.

METHODS: This was a quasi-experimental study conducted in 2010. Eighty patients were randomly assigned to either intervention or control group. Data was collected by a researcher-made questionnaire.

RESULTS: Study results showed that the mean score of knowledge about disease, diet, physical activity and perceived benefit, severity, and susceptibility after video training was increased significantly.

CONCLUSIONS: Using videos for educating myocardial infarction patients is a useful method for preventing recurrence of the disease.

KEYWORDS: Video Recording, Myocardial Infarction, Models, Psychological.

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Cardiovascular diseases, especially coronary artery disease (CAD) is the most important cause of mortality and morbidity in the world.¹ In Iran, ischemic heart diseases are one of the top causes of death in people above 35 years old.² These diseases involve human beings when they have more efficiency, economically and socially, and imposes enormous cost on health systems of countries.³ Also, inadequate support system such as ineffective planning of patient's follow-up, inability of patient in therapeutic measures at the time of symptomatic recurrence, non-compliance of diet and medicine, discharge without planning and lack of knowledge toward risk factors, are all controllable factors which could lead to frequent hospitalization of these patients.⁴ There are various methods for educating patients (individually or in a group) such as lecture, discussion and showing mov-

ies. Video is an educational media that can be used for educating patients. Basically, video training is effective, convenient and inexpensive because there are no teachers and books. Also it saves our time to complete a educational sessions.⁵ A study by Baraz-Pardenjani et al showed that self-care informative video in hemodialysis patients reduce their physical problems and increase their quality of life.⁶

Since health care providers try to affect patient's beliefs, by education, health belief model is one of the most useful theories related to health behaviors; and reviewing 46 studies of educating patients has shown that the model is a valuable framework to explain health behavior.⁷ The health belief model, which deals with the avoidance of a health threat, postulates that psychological readiness to adopt a recommended health action depends on four basic dimensions of perceived susceptibility,

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perceived severity, perceived benefit, and perceived barriers.⁸ A study showed that education based on the health belief model would increase knowledge, self-care behaviors in the exercise, the perceived severity, and perceived benefits and also would reduce perceived barriers of exercise and controlling diet in coronary artery bypass graft surgery patients.⁹ Considering the importance of avoiding risk factors to prevent recurrence of heart attack and also considering the ability of health belief model to make a frame for sensitivity, advancing benefits, overcoming barriers and increasing self-efficacy, it is necessary that patients suffering from recent myocardial infarction would undergo well training. Because of shortage in health care providers and no possible face to face for training during discharge and lack of follow-up, affective ways for preventing and controlling the disease must be tested. Considering the lack of researches on this topic in Iran, the present study aimed to determine the effects of video training based on health belief model on patients' knowledge and attitudes toward risk factors of myocardial infarction during discharged.

Methods

This was a quasi-experimental study conducted in 2010. Sampling was based on convenience method. Entry criteria included: being more than 35 years old, consenting, being literate, having no history of prior myocardial infarction, and having no psychological disorder. All patients were initially admitted to the Coronary Care Unit of the Shafa and Afzalipoor hospitals in the city of Kerman. According to similar studies,⁹ and having a power of 0.80 and significance of 95%, sample size was calculated to be 40 patients per group. Patients were randomly divided into two groups of intervention ($n = 40$) and control ($n = 40$) by selecting a randomly generated group number sealed in an opaque envelope. The intervention group received an information video education and the control group received routine method in hospital. Questionnaire was designed based on reliable and related sources and the circumstance of the

study population. The questionnaire was divided into two parts; the first part was about demographic data (gender, age, job, etc) and the second part focused on dimensions of the health belief model, in this regard, patient's knowledge and attitude toward perception of myocardial infarction, and effect of diet and physical activities on prevention and controlling the risk factors of the disease. The questions of knowledge were MCQ test and questions of attitude were based on 5-point Likert scale. Then Content Validity Index (CVI) of the instrument was determined by 10 faculty members of the Nursing and Midwifery Faculty of Kerman (CVI = 0.96). The reliability was approved by 15 independent myocardial infarction patients (Cronbach's alpha = 0.82). Educational content was designed regarding patients' extracted educational needs and based on health belief model; then with collaboration of a cardiologist, expert of exercise and researcher, a movie (a video CD) was produced. The movie was shown in two stages; after passing through the acute phase and during discharged for the patients individually using the laptop. Questionnaires were completed before the intervention and 1.5 month after that. The video training provided detailed information about myocardial infarction, symptoms, risk factors, control diet and importance of regular activities. Patients could use the VCD not only in the hospital but also at home. Control group received the routine method in hospital. Collected data were analyzed using SPSS version 16 and descriptive statistics (frequency and mean) and inferential statistics (t-test, chi-square test).

Results

Eighty patients (40 patients per group) participated in the study. There was no statistically significance difference between the two groups in the demographic information. The results of the chi-square showed that the two groups of intervention and control were almost matched. These variables are presented in table 1.

Analysis of baseline data showed that there were no significant differences between the two groups regarding any of dimensions of

Table 1. Demographic data of patients in the two groups of intervention and control

Demographical characteristics		Intervention No. (percent)	Control No. (percent)	P value
Age		53.65 ± 7.44	52.70 ± 8.42	-
Gender	Male	33 (82.5)	25 (62.5)	0.12
	Female	7 (17.5)	15 (37.5)	
Education level	Less than diploma	23 (57.5)	28 (70)	0.67
	Diploma	9 (22.5)	7 (17.5)	
	Higher education	8 (20)	5 (12.5)	
Job	Self-employment	16 (40)	16 (40)	0.42
	Employed	8 (20)	5 (12.5)	
	Unemployed	11 (27.5)	10 (25)	
	Retired	5 (12.5)	9 (22.5)	
Monthly income	Less than 200 thousands	11 (27.5)	10 (25)	0.42
	200-300 thousands	10 (25)	12 (30)	
	More than 300 thousands	19 (47.5)	18 (45)	
Family history	Yes	10 (25)	12 (30)	0.29
	No	10 (25)	5 (12.5)	

model ($p > 0.05$) (Table 2). Study results showed that the mean score of knowledge from disease, controlling diet, physical activity and perceived benefit, perceived severity, and perceived susceptibility after video training was increased and also the mean score of barriers of controlling diet and barriers of physical activity was decreased.

Comparing these means using t-test showed a significant difference between the means of two groups ($p = 0.000$) (Table 3).

Discussion

The growing acceptability of computers and the advent of newer multimedia techniques have created a dramatically different computing environment. In addition to changes in technology, changes in the healthcare system have occurred.¹⁰ As the results of the present

study showed, the intervention resulted in improved knowledge and attitude; also there was a significant difference between before and after the intervention in both groups. Although control group did not receive intervention, the significant difference can be attributed to the effect of informal and non-integrated education of health provider, the media and communicating with others (considering the fact that the participants had their first heart attack). Of course, in the intervention group more obvious difference could somehow confirm the efficacy of education, especially that two groups' knowledge and attitude had no difference before intervention but difference results were confirmed by the results of other studies on the application of health belief model on diabetic and undergoing coronary artery graft patients.^{9,11-13} Albert et al in their

Table 2. Comparing dimensions of model in the two groups before intervention

Dimensions of model	Intervention		Control		P value
	Mean	SD	Mean	SD	
Knowledge about disease	5.2	1.79	4.9	1.88	0.56
Knowledge about diet	6.3	1.65	5.6	1.75	0.2
Knowledge about exercise	4.75	1.83	4.65	1.63	0.85
Perceived susceptibility	9.1	2.02	9.95	3.05	0.3
Diet's benefit	6.45	1.27	6.8	1.57	0.44
Diet's barriers	18.04	1.39	16.7	4.04	0.08
Exercise's benefit	9.3	3.26	8.4	2.25	0.31
Exercise's barriers	24.25	1.06	23.35	2.18	0.1
Perceived severity	7.9	2.1	7.25	1.83	0.3

Table 3. Comparing dimensions of model in the two groups after intervention

Dimensions of model	Intervention		Control		P value
	Mean	SD	Mean	SD	
Knowledge about disease	9.25	1.11	4.7	1.78	0.000
Knowledge about diet	11.7	0.73	5.3	1.92	0.000
Knowledge about exercise	9.6	0.82	4.55	1.76	0.000
Perceived susceptibility	23.5	1.39	9.25	2.57	0.000
Diet's benefit	14.1	0.64	6.7	1.49	0.000
Diet's barriers	7.75	2.38	15.25	2.51	0.000
Exercise's benefit	18	1.07	7.95	2.01	0.000
Exercise's barriers	9.5	2.32	23	1.68	0.000
Perceived severity	14.05	0.6	6.7	0.97	0.000

study revealed that video training enhances self-care behaviors and leads to fewer symptoms of volume overload. Video training facilitates patient education that might improve clinical outcomes and knowledge of the disease.¹⁴ The study of Keulers et al entitled "can face-to-face patient education be replaced by computer-based patient education? A randomised trial" suggested that patient education can result in a higher knowledge levels by using a computer than rather than using a doctor.¹⁵ These results, confirm the results of the present study.

Conclusions

Nurses should consider the fact that only having adequate knowledge about disease and risk factors will not lead to reform and controlling risk factors. Nurses can design their educational intervention based on health belief model and take effective steps to modify, change and promote health behaviors. Increase

in sensitivity and perceived threat in patients causing them to be exposed to recurrent myocardial infarction and adopt changes in their behaviors; also the transformation in the medical technology seems that use of video training for patients' education is undeniable. In general, it could be said that on the one hand this study is evidence of positive effects of educational programs in myocardial infarction patients, and on the other hand present study recommend video training as a suitable method for educating these patients based on health belief model.

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Conflict of Interests

Authors have no conflict of interests.

Authors' Contributions

AA has guided the research. FB was the research consultant. NA did the sampling and performed the educational program. All authors have read and approved the content of the manuscript.

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