Secondary prevention and learning needs of patients undergoing angioplasty

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ABSTRACT:
Background. Need measurement or identification of important learning needs have basic role in the patients undergoing angioplasty and it is the base for determining the goals and also it provides appropriate background for structuring other important elements in regard to prioritized needs. ***Aims and objectives.*** The aim of this study was to evaluate learning needs in patients after angioplasty and the impact of the education on their needs. ***Design.*** A quasi-experimental design was used. ***Methods.*** Patients undergoing percutaneous coronary intervention (PCI) at a medical center in Iran were sampled by convenience and assigned to two groups; control and experimental groups. The groups represented alternate times for delivering education. The group that received education prior to discharge was compared with the group that received education following discharge. The results were compared pre-test, post-test and during follow-up period. Content validity was demonstrated through evaluations made by a panel of experts. The internal consistency reliability coefficient was found to be o.8 in this study. Descriptive statistics were used to analyze demographic data and repeated measures analysis of covariance was used to determine differences in the outcomes in the groups. ***Results.*** The results revealed that the mean of the grades of learning needs in pre-discharge group is more than post-discharge group and there are statistically significant differences between two groups in their learning needs. ***Conclusions.*** Education based on needs of patient, together with changes in lifestyle of patients undergoing angioplasty results in recovery of physical situation and promotion of quality of life.

Keywords: Angioplasty, Cardiovascular disease, education, learning needs, quality of life.

INTRODUCTION

Nowadays cardiovascular diseases is one of the most common chronic diseases in the elderly and middle aged people and is the most important cause of hospitalization of elderly in hospital (Anderson. 2006). One of the best methods of prevention of incidence progress, implication of disease, understanding and determination of learning needs in patients. Therefore, it is essential to plan educational programs related to their needs. The more the patients have information about the condition of their disease, the more their better they can take care of themselves. The EUROASPIRE investigations have identified deficiencies in lifestyle for those with established coronary artery disease (CAD). In comparison with earlier surveys, the incidence of smoking had remained almost unchanged and the level of obesity rose from one quarter to 38% in the third survey (Kotseva. 2009). Percutaneous coronary intervention (PCI) has been defined as a group of medical procedure [including percutaneous transluminal coronary angioplasty (PTCA) and stent insertion] that mechanically restores blood flow to constricted coronary arteries (American Heart Association 2010). According to Cowman (2008), nurses can enhance patient self-care by assessing the health needs of their patients and providing appropriate discharge planning. The learning needs of cardiac patients include recognishing and managing symptoms, medication management and lifestyle factors (Gentz 2000; Scott & Thompson 2003; Kattainen et al., 2004; McGillion, 2004). One study which explored the learning needs of patients prior to PTCA found that physical recovery (disease-specific issues) and

psychosocial functioning recovery (vitality, depression and distress) were the main concerns (Kattainen. 2004). Nurse is one of the important members in teaching education programs to patient undergoing angioplasty for adaptation with their limitations, assessing health situation and follow up a specific therapeutic diet. Therefore, this study is aimed to assess learning needs in patients and planning educational programs appropriate for needs of patients undergoing angioplasty in Ayatollah Mosavi Hospital's Medical Center.

MATERIALS AND METHODS

Methods

A convenience sampling method was used to recruit participants for this study. The study was designed as a prospective, randomized, controlled trial including a sample of 100 subjects undergoing elective percutaneous coronary intervention. A quasi-experimental design was chosen, sequentially, to collect data from patients in the control and experimental groups. For both groups, data were collected three times: one to two days before discharge, one week after hospital discharge and follow-up within 3 weeks post-discharge. The study protocol was approved by the local ethics committee, and written informed consent was obtained. Inclusion criteria: 1- underwent angioplasty surgery for the first time, with no additional surgical interventions. 2- Literate in Persian. 3- Oriented to time, place, and person. 4- Have access to a working phone both in the hospital and at home. Subjects were assessed for cardiac risk factors as well as baseline demographic and clinical characteristics. As well, patients' identified learning needs were collected prior to the intervention delivery. The Patient Learning Needs Scale (PLNS) was used to assess the topic areas that patients want to learn about. This tool was designed for use with surgical inpatients and outpatients. Patients were asked to rate how important each item is to know before going home in order to manage their care at home using a Likert scale with scores ranging from 1 (not important) to 5 (extremely important). The scale demonstrated convergent validity evidenced by its correlation (r=0.78) with a similar instrument that assesses patient's learning needs, and internal consistency reliability Cronbach's alpha: 0.80 to 0.90) in a sample of patients who had angioplasty. SPSS was used to analyze results, and statistical help was obtained. Demographic and outcome measures were summarized, and the means of the variables subscales and individual items were tabulated. Institutional approval was obtained from Zanjan Branch, Islamic Azad University ethical Committee. Study aims, plans and benefits were explained to patients who met the study criteria. Data were analyzed using SPSS statistics software for windows. To treat analysis, minimum and maximum values were controlled before the evaluation of the data. Chi-Square and variance analysis (ANOVA) were used for the assessment of the experimental and the control groups. Internal consistencies of the PLNS scale were tested using Cronbach's alpha reliability coefficients. A significance level of P=0.05 was used for all comparisons.

RESULTS AND DISCUSSION

Results

One hundred patients who fit the inclusion criteria were randomized to control (pre-discharge) or experimental (post-discharge) groups. The baseline characteristics of the study population are summarized in table 1. The majority of subjects in both groups were male, married, smoking, none hospitalization during past year. The results revealed that the mean of the grades of learning needs in pre-discharge group is more than post-discharge group (Table 2) and there are statistically significant differences between two groups in their learning needs (Table 3). Patients were concerned about their immediate well-being and overall recovery possibly leaving secondary preventive issues to later stages.

Table 1. Demographic data for pre- and post-discharge and total groups.

Variable	Pre-discharge group(n=50)	Post-discharge group (n=50)	Total group (N=100)
Age[mean(SD)]	64 (12)	61 (12)	63 (12)
Gender (%)			
Male	33 (66)	28 (56)	61 (61)
Female	16 (34)	22 (44)	39 (39)
Marital status [exact number (%)]			
Married	49 (98)	49 (98)	98 (98)
Non-married	1 (2)	1 (2)	2 (2)
Highest level of education received [exact number (%)]			
Less than high school	41 (82)	42 (84)	83 (83)
High school	8 (16)	8 (16)	16 (16)
BS/BA	1 (2)	0 (0)	1 (1)
Co-morbid conditions [exact number (%)]			
High blood pressure	29 (58)	23 (46)	52 (52)
High cholesterol	20 (40)	20 (40)	40(40)
Diabetes	17 (34)	21 (42)	38 (38)
Arthritis	2 (4)	2 (4)	4 (4)
Predisposing factors [exact number (%)]			
Smoking	24 (48)	15 (30)	39 (39)
Obesity	14 (28)	19 (38)	33 (33)
OCP	3 (6)	2 (4)	5 (5)
Personality type A	1 (2)	4 (8)	5 (5)
Uric acid	4 (8)	5 (10)	9 (9)
Positive family history	1 (2)	1 (2)	2 (2)
Ovariectomy premenopausal	1 (2)	2 (4)	3 (3)

Table2: Group Statistics

	group	N	Mean	Std. Deviation	Std. Error Mean
Learning needs	Post-discharge group	50	71.88	6.120	.866
	Pre-discharge group	50	75.20	4.836	.684

Table 3: Independent Samples Test

Levene's Test for Equality of Variances			t-test for Equalityof Means					
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed		.976	.326	-3.01	98	.003	-3.320	1.103
Learning needs	Equal variances not assumed			-3.10	93.027	.003	-3.320	1.103

Discussion

Patients can find it difficult to retain standardized information for their individual needs three to five months following hospital discharge (Hanssen. 2005). In this study, Co-morbid conditions were high blood pressure, high cholesterol and diabetes. Kilonzo and O'Connell (2011) noted that though 49% had been hospitalized for previous cardiac condition; self-reported previous cardiac teaching was reported by only 16%. Eighteen percent of the patients suffered from another chronic illness other than a cardiac disease. Kimble and King (1998) found that two weeks post-PTCA groin discomfort was the most frequently reported self-effect indicating that the physical aspects and symptom management remained an issue for patients following discharge. Our study showed that predisposing factors were smoking, obesity, oral contraceptive pregnancy agents' consumption, high level of uric acid. Several studies have demonstrated such symptoms (Fredericks S 2009, Sadeghzadeha et al. 2013, Sadeghzadehb. 2013) Brezynskie et al. (1998) found symptom management and lifestyle changes ranked highest in a Canadian population of nurses and patients post-PTCA and symptom management persisted for patients at baseline, six months and one year in Kattainen et al.'s (2004) study. Nakano et al. (2008) noted that patients who had individualized care and positive interpersonal contact felt well cared for. His-His. 's results are consistent with other reports that exercise-based rehabilitation interventions for patients who had undergone CABG improved their compliance rate at three months post-surgery compared to the control group (Tsai. 1995, Benzer. 2007, Lin. 2009). Individual counseling and discussion time with nurses were more valued and more adequately deal with for patients than the nurses perceived it to be. This highlights the importance for nurses in developing therapeutic relationships with patients (Kilonzo and O'Connell 2011). Based on the study's results, the rate of learning needs in the pre-discharge group is more than the post-discharge group and this can be resulted from anxiety that the patient has before discharge that can be affect the patient's learning. Nakano. (2008) noted that patients were unsure of information given to them during the acute stage of their illness, when interviewed following discharge and there is the argument that information should be given according to individual patient need (Timmins 2005).

Kilonzo and O'Connell (2011) pointed out that patients placed a marginally statistically significant value on the importance of written backup. This may suggest that at the time of hospital discharge.

CONCULSION

In hospital education is a complex issue. Patients may not remember what was said to them (Nakano. 2008). And may not be ready to learn the complex priorities that health professional's deem necessary (Hanssen. 2005). Yet there is increased pressure on in-hospital education to meet patient's needs, as shorter admission times and rapid turnover reduce the time available for patients to accept and learn their condition. Nurse should pay more attention to the design and coordination effectiveness and supporting of educational programs. This way they can try to help patients improve their quality of life.

Relevance to the clinical practice
Understanding the Iranian participants of CHD is vital in developing illness prevention and health improvement strategies to increase their level of knowledge to reduce CHD risk factors.

Conflict of interest
None.

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