Patients' Needs on Nutritional Counseling and Risk Factor Management Among Myocardial Infarction Patients in Cardiac Rehabilitation

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Abstract

The needs of nursing care for Myocardial Infarction (MI) patients who performing Cardiac Rehabilitation (CR) Program have been investigated previously. Despite, nutritional counseling and risk factors management were reported as the most needs of MI patients who performed CR Program, information related to the MI patients' needs on nutritional counseling and risk factor management are very limited. Moreover, the relationship between patients' needs on nutritional counseling and risk factor management are not clear yet. To investigate patients' needs on nutritional counseling and risk factor management among MI patients and its relationships those factors. This was quantitative approach with descriptive correlational and convenience sampling was used for this study. The participants included 38 MI patients admitted to the Cardiac Rehabilitation Unit. Data collection employed from questionnaires that were filled in by the respondents using a retrospective technique at the end of cardiac rehabilitation program. Data were analyzed using descriptive and correlational statistics. The study signified that MI patients required cardiac rehabilitation towards risk factors management and nutritional counseling from nurses (92.1%).The finding also indicated that there is a statistically positive relationship between nutritional counseling needs and risk factor management ($r = 0{,}503$, $p < 0.01$). Patients' needs on nutritional counseling and risk factor management among MI patients are correlated positively. Therefore, the information regarding nutrition and risk factor management for MI patients should be provided simultaneously to complement each other.

Keywords: Myocardial infarction, nutritional counseling, patient's need, risk factor management.

Introduction

Cardiovascular disease (CVD) is one of the most important causes of disease burden concerning of disability and death worldwide, especially in developing countries such as Indonesia (Gaziano & Gaziano, 2016; Maharani & Tampubolon, 2014). CVD requires proper long-term management to reduce cardiovascular disease burden (Chaves et al., 2016). The main purposes of CVD management are to reduce morbidity and premature mortality, improve quality of life and increase longevity (Germano et al., 2012). CVD management is performed through Cardiac Rehabilitation (CR) program. Cardiac Rehabilitation is defined as a chronic disease management to optimize secondary prevention program which providing structured exercise, patient education and psychological support (Anderson & Taylor, 2014).

In the current U.S. healthcare system, CR was approved for insurance coverage for patients with chronic stable angina pectoris and/or who had sustained an Myocardial infarction (MI) in the last 12 month (Sandesara et al., 2015). Nevertheless, existing educational program for MI patients still deliver general information rather than consider in patient's information needs that cause patients failed to attain the behavioral change and clinical goals recommendations (Boyde et al., 2014). The finding of previous research also supported that secondary prevention was not performed optimally to prevent recurrent MI. Health-care professionals more focused on medical treatment, and less concern on prevention and rehabilitation (Herliani, Matchim, & Kritpracha, 2015).

Previous finding reported that comprehensive risk factor modification was failed to integrate into the standard medical care provided to patients after acute cardiac events due to deficiency in resource allocation for preventive and rehabilitative aspects of management of acute illness. Nevertheless, a nurse case-management as part of CR system could build collaboration with different health care specialists to managed coronary risk factors (DeBusk et al., 1994). Therefore, the role of nurses in assisting the process of cardiac rehabilitation should be taken into consideration to promote cardiac rehabilitation program (Herlian, Rahayu, & Purba, 2017).

Assessments related to the needs of nursing role and nursing care for myocardial infarction patients who performing cardiac rehabilitation program have been investigated previously. Nutritional counseling and risk factors management were reported as the highest needs of MI patients who performed CR (Herlian et al., 2017). Nutritional counseling are not maintaining adequately or not at all in the developing countries. Nutritional counseling was reported as the most need of MI patients due to dietary behavior was common barrier experienced by the patients. Moreover, change in dietary behavior tends to become insignificant over time due to individual dietary habits as well as dietary habits related to culture which need to be adapted for change (Usfar & Fahmida, 2011). In regard to risk factor management need, such as hypertension, diabetes, dyslipidemia, and obesity are the main targets of cardiac rehabilitation and should be controlled carefully (Song & Lee, 2001).

Despite, the needs of nursing role and nursing care showed that nutritional counseling and risk factor management as the highest needs for myocardial infarction patients who performing cardiac rehabilitation program, information related to the MI patients' needs on nutritional counseling and risk factor management are very limited. Moreover, the relationship between patients' needs on nutritional counseling and risk factor management are not clear yet. Therefore, the aims of this study were to (1) describe patients' needs on nutritional counseling and risk factor management among patients with myocardial infarction (MI) in Indonesia; and (2) investigate the relationship between their patients' needs on nutritional counseling and risk factor management.

Research Method

The sample of this study consisted of 38 MI patients admitted into the Cardiac Rehabilitation Unit of Hasan Sadikin Hospital. This study used total sampling as

sampling procedure. Hasan Sadikin Hospital is a tertiary hospital located in West Java Province, Indonesia. Convenience sampling was used as sampling procedure of this study. The patients who met the inclusion criteria were approached to determine their willingness to participate in the study. The inclusion criteria were: (1) age >18 years; (2) confirmed diagnosis of MI; (3) have no cognitive impairment; (4) agree to participate in the study; (5) be able to communicate in Indonesian language.

This study was conducted after obtaining approval from the Research Ethics Committee of Faculty of Nursing, Universitas Padjadjaran and permission from Hasan Sadikin Hospital, Indonesia. In the process of recruiting participants, the researcher explained to the potential participants the purpose of the study, that participation in this study was voluntary, and that their anonymity would be ensured; the data would remain confidential and they had the right to refuse to participate in the study or withdraw at any time without any negative consequences.

The instrument used in this study was developed by the researcher based on cardiac rehabilitation and secondary prevention guidelines established by the American Heart Association. Three experts evaluated the content validity of the instruments. The questionnaire used five likert scales. The score was rated as 1= not relevant, 2= fulfilled, 3 = low, 4 = medium need, and 5 = high need. Higher scores indicate higher needs of patients with myocardial infarction who performed cardiac rehabilitation on nursing care. The data was collected at the cardiac center of Hasan Sadikin Hospital, Indonesia. The data was obtained from questionnaires that were filled in by the respondents using a retrospective technique at the end of cardiac rehabilitation program.

Data were analyzed using descriptive and correlational statistics. Descriptive statistics were used to describe characteristics of the sample by using frequency, percentage, mean, and standard deviation. Preliminary testing was done to meet the assumption of parametric testing prior to running the parametric tests. Pearson's product-moment correlation statistic (r) was calculated to examine the relationship between patients' needs on nutritional counseling and risk factor management among patients with myocardial infarction who performed cardiac rehabilitation.

Research Results

Table 1 Frequency, Percentage, Means, and Standard Deviations of the Patients' Demographic Data (N = 38)

Characteristic	n	x
Age (range 44–74 years)	Mean= 56.37	SD=8.35
Gender		
Male	28	73.7
Female	10	26.3
Maritas Status		
Single	1	2.6
Married	36	94.8
Widower/Widow	1	2.6
Educational Level		
No Schooling	1	2.6
Elementary School	1	2.6
Junior High School	3	7.9
High School	17	44.8
College or Higher	16	42.1
Monthly Incomes		

< 1 million IDR	4	10.5
1–2 million IDR	9	23.7
2–4 million IDR	13	34.2
> 4 million IDR	12	31.6
Occupation		
Enterpreneur	7	18.4
Government Eployee	4	10.5
Private Sector Emloyee	6	15.8
Farmer	2	5.3
Retired	12	31.6
Others	7	18.4
Risk Factors		
Hyertension	20	52.6
Hypercholesterol	25	65.8
Diabetic	7	18.4
Smoking	6	15.8
Overweight	6	15.8

Table 2 Frequency and Percentage of Cardiac Rehabilitation Patients' Needs (N = 38)

Patients' Needs	No Need		Need	
	F	%	F	%
patients' needs on nutritional counseling	3	7.9	35	92.1
patients' needs on risk factor management	3	7.9	35	92.1

Table 3.Correlation (R) between Patients' needs on Nutritional Counseling and Patients' needs on Risk Factor Management among MI Patients (N=38)

No	Variable	Patients' needs On Risk Factor Management
1	patients' needs on nutritional counseling	.503**

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

The majority of patients in this study were men (73.7%) and married (94.8 %), with a mean age of 56.37 years (ranging from 44 to 74 years). A high number of patients (34.2%) had monthly incomes of 2-4 million IDR, followed by 31.6% who had monthly incomes of more than 4 million IDR. There were 44.8 % of the participants had a high school education and 42.1 % had graduated from university. The majority of the patients were retired (31.6 %). The numbers of patients were 44.7 % had two risk factors such as hypertension (52%), hypercholesterol (65.8%), diabetes (18.4%), smoking (15.8%), and overweight (15.8%).

Table 2 presents the frequency distributions of cardiac rehabilitation patients' needs. Most of the patients stated that they needed nutritional counseling from nurses (92.1%). Specifically, they required it in low (18.4%), medium (47.4%), and high category (26.3%). There were 92.1% of the patients showed their needs on cardiac rehabilitation towards the risk factors management from the nurses,

where specifically they needed it in low (26.3%), medium (44.7%), and high level (21.1%).

The results of the bivariate correlational analysis using Pearson correlation coefficients (r) are presented in table 3. The results show that patients' needs nutritional counseling has a positive statistically significant relationship with patients' needs on risk factor management among MI patients who performed cardiac rehabilitation ($r = 0.503$, $p < 0.01$).

Discussion

This descriptive correlational study reported that the majority of patients in this study were men (73.7%) and married (94.8 %) with a mean age of 56.37 years. These results are consistent with previous findings where 67% of myocardial infarction patients are male (Leifheit-Limson et al., 2013), with average age of participants was 56.33 years (Herliani et al., 2015). CVD requires proper long-term management to reduce cardiovascular disease burden (Chaves et al., 2016), reduce morbidity and premature mortality, improve quality of life and increase longevity (Germano et al., 2012). CVD management is performed through Cardiac Rehabilitation (CR) program. Cardiac rehabilitation was defined as providing of the comprehensive long-term services comprising medical evaluation, prescriptive exercise, cardiac risk factor modification, and education, counseling, and behavioral intervention (Sandesara et al., 2015).

In order to address the needs of patients towards nursing care during the rehabilitation program, the tasks and roles of the nurses are designed based on the core components of cardiac rehabilitation program, which has been recommended by American Heart Association (AHA) (Herlian et al., 2017). Cardiac rehabilitation components consist of patient assessment, physical activity counseling, exercise training, diet/nutritional counseling, weight control management, lipid management, blood pressure monitoring, smoking cessation, and psychosocial management (Balady et al., 2007).

Most of the patients in this study were reported need nutritional counseling from a nurse. Majority of education for cardiac patients was delivered by nurse (35.7%) (de Melo Ghisi, Abdallah, Grace, Thomas, & Oh, 2014). Most of the education content was concerned on nutrition (62%), and risk factors (40.5%) (de Melo Ghisi et al., 2014). Finding from previous study reported that 57.0 % of participants having had questions concerning nutrition and/or problems with food intake (Maschke et al., 2017). Dietary behavior was reported as the common barrier experienced by the patients. The findings from previous study showed that a change in dietary behavior tends to become insignificant over time and this is due to individual dietary habits as well as dietary habits related to culture which need to be adapted for change (Usfar & Fahmida, 2011). Therefore, nutritional counseling as part of cardiac rehabilitation program should be considered.

Nutritional counseling can be described as the use of education to facilitate changes in eating behavior (Hopkinson, 2015). Nutritional counseling is the fun and rewarding method to advise the nutritional information aiding to form a healthy lifestyle of the patient performed as collaboration of nutritionist, doctor, and nurse (Hakim, 2016). Nutritionist is the premier role performer for the patient's health and nutritional care. Hence, doctor has role to check the state of health to prescribe medicine and advises some measures to recover the diseases. Then, nurse has role to provide the health care to the patient as rule to the nutritionist and the doctor as a whole maintaining their professional ethics to gain absolute wellness from sickness as soon as possible (Hakim, 2016).

Previous study reported that Nurse-delivered nutritional counseling was acceptable to patients. It can have a positive effect on patient behavior and health outcomes, slow decline in performance status in cancer patients and improve physical function and depression in patients with angina, have benefit include providing information and advice and involving family caregivers in the patient's nutritional care (Hopkinson, 2015). The interventions are guided by a set of standardized management algorithms performed by nurses as case managers.

Moreover, the nursing role is well integrated into the medical care system (DeBusk et al., 1994).

In this study, participants reported their need on nutritional counseling from nurse such as calculate total daily intake of calories, fat, cholesterol, and salt in a day, the habit of eating fruits, vegetables, and fish; the number of meals and snacks, frequency of eating out and counseling regarding patient diet. Although generally patients had received nutritional counseling from nutritionists and nurses before discharge from the hospital when they were hospitalized, they stated that it should perform continuously to maintain compliance on diet along the rehabilitation program. The results are in line with the AHA guideline which CR consists of assessing the baseline of a patient's dietary; determine target areas for nutrition intervention that was sensitive and relevant to cultural preferences; and provide education and counseling for patients and family regarding dietary goals and strategy through counseling sessions (Balady et al., 2007). Tailoring advice to individual patients' needs is an essential part of the process of facilitating dietary change (Hopkinson, 2015).

In regards to risk factor management, the numbers of patients in this study were reported had two risk factors (44.7%) such as hypertension (52%), hypercholesterol (65.8%), diabetes (18.4%), smoking (15.8%), and overweight (15.8%). Recent study revealed that most of the patients need risk factors management from nurses that consisted of measuring weight and height to determine the nutritional status, blood pressure, assess medication adherence, assess the results of laboratory tests of cholesterol, and blood glucose regularly and monitor for complications. These results are congruent with previous study which revealed that patients' needs on risk factor management focus more on measurement of blood pressure, blood glucose, and blood lipid, diet, and weight (Zhou et al., 2017).

Obesity is now considered as an independent risk factor for CHD, and obesity is a major modifiable risk factor. More than half of the cardiac patients were reported either overweight or obese. Moreover, the results showed that obesity was positively correlated with blood pressure (Chair, Lee, Lopez, & Ling, 2007). Moreover, one in five of obese patients have never been told by a health professional that they were overweight (Kotseva et al., 2016). Good blood pressure, lipid and glycaemic control reduce the risk of CVD (Kotseva et al., 2016). Diabetes Mellitus (DM) is an independent risk factor for Cardiovascular disease as well (Walsh, Fuster, Fang, & O'Rourke, 2012). High blood pressure and abnormal lipids play role in myocardial infarction risk (Go et al., 2014).

The results of present study show that patients' needs on nutritional counseling have a positive statistically significant relationship with patients' needs on risk factor management among MI patients who performed cardiac rehabilitation. The findings indicate the information regarding nutrition and risk factor management for MI patients should be provided simultaneously to complement each other along cardiac rehabilitation program. Healthy diet and weight reduction in overweight and obese people is recommended in order to reduce blood pressure, lipids and risk of type 2 diabetes mellitus (Kotseva et al., 2016). For instance, nurses have an important role for lowering cholesterol levels by encourage a diet with low saturated fats such as fruit and vegetables, whole grains, low fat or skim milk dairy products, lean fish and shellfish, beans and peas, unsaturated oils. Meanwhile, high saturated fat and cholesterol rich food must be limited (Aschenbrenner, 2009).

Conclusion

The results of this study revealed that most of the cardiac rehabilitation patients required nutritional counseling and risk factor management from nurses during performing cardiac rehabilitation. Patients' needs on nutritional counseling and risk factor management among MI patients are correlated positively.

The information regarding nutrition and risk factor management for MI patients should be provided simultaneously to complement each other.

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