Exercise and Physical Activity Counseling Needs among Cardiac Rehabilitation Patients

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Abstract

Cardiac rehabilitation (CR) has decreased in recurrent cardiac events. However, information related the needs of cardiac rehabilitation patients such as exercise and physical activities counseling are very limited. This study aims to identify the needs of cardiac rehabilitation patients such as exercise, physical activity counselling, and the relationship between them. It also applied a quantitative approach combined with a descriptive correlational method. 38 cardiac rehabilitation patients were recruited as samples and were selected using the convenience sampling technique. Data collection was performed using questionnaires filled out by the respondents (with a retrospective technique) at the end of the CR program, and the results were evaluated through descriptive correlational statistics. The results revealed that patients with CR required exercise (92.1%) and nurses' counseling for physical activities (86.9%). It also indicates that there is a statistically positive relationship between exercise and physical activities counseling among CR patients ($r = 0.485$, $p < 0.01$). Consequently, most CR patients desire nurses to take part in their exercise and physical activities. The needs of CR patients on exercise and physical activity counseling were correlated positively. Therefore, information regarding exercise and physical activity for CR patients should be provided simultaneously to complement each other.

INTRODUCTION

Cardiovascular disease (CVD) is one of the primary causes of death and disability in the world's population especially developing countries such as Indonesia (Gaziano & Gaziano, 2016; Maharani & Tampubolon, 2014). Therefore, reduce the burden of cardiovascular diseases in Indonesia through cardiac rehabilitation (CR) is critical. Thus, the nurse's support in the process of cardiac rehabilitation was necessary to promote cardiac rehabilitation program (Herlian et al., 2017). CR has been described as activities needed after heart events to promote recovery and prevent further heart disease (Dalal et al., 2010). Cardiac rehabilitation (CR) is multi-

factorial and comprehensive service consist of several components. Nevertheless, in all rehabilitation interventions, physical activity therapy and exercise are becoming core components (Balady et al., 2007).

Physical activity is described as any physical movement resulting in energy expense beyond the basal level and as such part of routine involvement. Meanwhile, exercise is determined as a sub-type of physical activity that scheduled, organized and repeated body movements in order to sustain or enhance one or more fitness and strength elements and therefore it is an organized intervention over a specified time period. Exercise training has benefits to slow CAD (Coronary Artery Disease) progression,

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improve functional capacity and survival prospects. The assessment, therapy and support for promoting physical activity and exercise are essential roles for the health care to be addressed (Corrà et al., 2010).

Exercise is one of the critical elements of cardiac rehabilitation. Exercise has been shown it's beneficial to people with CVD to encourage people improve their physical function, and enhance both cardiac and blood pressure control. Long-term exercise reduces many risk factors for cardiovascular disease, development of atherosclerosis and resulting in low risk of another heart event. Exercise is necessary for primary and secondary prevention of Myocardial Infarction (MI). MI patients are expected to exercise regularly after their first heart attack. Regular exercise results in increased exercise capacity and improve cardiac function to avoid another heart event and lower mortality rates and CAD symptoms (Herliani et al., 2016).

Nevertheless, the current offering information for CR patients is only providing general information rather than patient considerations which result failure of patients to meet behavioral goal and recommendations (Boyde et al., 2015). The finding of previous research also supported that secondary prevention to prevent periodic MI was not conducted efficiently (Herliani et al., 2015). The needs for health education among coronary heart disease (CHD) patients is indicated can improve the awareness on CR. Despite evaluations of the need for nursing care for cardiac rehabilitation patients have been investigated previously (Herliani et al., 2017), the relationship between patients' needs on exercise and physical activity counseling are not identified previously. Therefore, the purposes of this research were to: (1). identify the needs of cardiac rehabilitation patients in Indonesia for exercise and physical activity counselling; and (2). investigate the relationship between the needs of patients for exercise and counseling for physical activity.

METHOD

The sample of this study was 38 patients who were admitted to the Cardiac Rehabilitation unit of Hasan Sadikin Hospital which recruited by using convenience sampling technique. The Hasan Sadikin Hospital in West Java Province, Indonesia, is a tertiary hospital. has been used as this study's sampling. In order to recognize respondents' willingness to engage in the research, patients who met the inclusion criteria were approached.

This study was conducted after receiving approval from research ethics committee of Hasan Sadikin Hospital No LB.02.01/C02/037/VIII/2016. The researchers conveyed the purpose of the study to the prospective participants in the process of re-

ruiting participants. However, the participants have the right to decline or withdraw from the study any time without negative consequences.

The researcher developed the questionnaire in this study based on the American Heart Association's recommendations for cardiac rehabilitation and secondary prevention (Balady et al., 2007). Three experts evaluated the reliability of the instruments. Five Likert scales were used in the questionnaire. The rating was graded as 1=non-relevant, 2=satisfied, 3=low, 4=medium, and 5=high need. Higher scores reflect greater needs of patients who received cardiac rehabilitation on nursing care.

The information was obtained at the Hasan Sadikin Hospital's Cardiac Unit, Indonesia. The participants filled out the developed questionnaires at the end of the cardiac rehabilitation program using a retrospective methodology. Data were examined using statistics of descriptive and correlational. In order to analyze the relationship between exercise and physical activity counseling among CR patients, Pearson's product-moment correlation statistics (r) was determined.

RESULTS AND DISCUSSION

Results

Table 2 reveals the frequency distributions of exercise and physical activity counseling needs among cardiac rehabilitation patients in Indonesia. The results of this study revealed that 92.1% of the participants required exercise counseling from nurses. Specifically, they required it in high

level (21.1%), medium (34.2%), and low (36.8%). In addition, 86.9% of the participants required physical activities counseling from nurses during performing cardiac rehabilitation. Specifically, they required it in high level (13.2%), medium (39.5%), and low (34.2%).

Table 3 presents the results of the bivariate correlational analysis with Pearson correlation coefficients (r). The results present that patients' needs on exercise counseling has a positive statistically significant relationship with physical activity counseling among CR patients ($r = 0.485$, $p < 0.01$).

Table 3. Correlation (r) between patients' needs on exercise and physical activity counseling among CR patients

Discussion

This descriptive correlational study reported that the majority of cardiac rehabilitation participants in this study were men and married with a mean age of 56.37 years. These results are in agreement with previous findings where most of myocardial infarction (MI) patients are male (Leifheit-Limson et al., 2013), with average age of participants was 56.33 years (Herliani et al., 2015). These results

Table 1. The patients' demographic data (N = 38)

Characteristic	N	X
Age (44–74 years)	Mean = 56.37	SD = 8.35
Sex		
Male	28	73.7
Female	10	26.3
Marital 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
Occupation		
Entrepreneur	7	18.4
Government employee	4	10.5
Private sector employee	6	15.8
Farmer	2	5.3
Retired	12	31.6
others	7	18.4
Risk Factors		
Hypertension	20	52.6
Hyper cholesterol	25	65.8
Diabetic	7	18.4
Smoking	6	15.8
Overweight	6	15.8

are supported by previous studies which reported female patients 36% less likely to enroll in a cardiac rehabilitation program than male patients (Lin et al., 2016; Samayoa et al., 2014).

Cardiac rehabilitation is comprehensive and multi-factorial care, with physical activity counseling and exercise as main element in all rehabilitation activities (Corrà et al., 2010). Cardiac rehabilitation (CR) was considered to support the people experienced a cardiac event to recover independence and participation in regular physical activity. The primary attention of CR programs was to advance the functional capacity of patients using tailored exercise and physical activity principles (McKillop, 2017). Moreover, CR as included in Class I treatment recommendation guidelines was defined as a comprehensive, exercise-based approach proven to

promote the recovery of daily functions and enhance patient's quality of life (Lin et al., 2016). The assessment, counseling, and promote in maintaining physical activity and exercise are essential activities for healthcare provider to be addressed in cardiovascular disease prevention (Corrà et al., 2010).

The findings of this study indicated that most patients with cardiac rehabilitation needed physical activity (86.9%) and exercise counseling from nurses (92.1%). Physical activity is any movement of body induced by muscle contraction, resulting in consumption of energy over the basal level and, as such, part of lifestyle involvement. Physical activities are directly correlated with high-density lipoprotein cholesterol (HDL-C), decrease mean fasting glucose, and oral glucose tolerance test level, and prevent overweight and certify positive impacts of blood

Table 2. Frequency and percentage of exercise and physical activity counseling needs among cardiac rehabilitation patients in Indonesia (N = 38)

Patients' Needs	No need		Need	
	Frequency	Percentage	Frequency	Percentage
The patients' needs on physical activity counseling	5	13.1	33	86.9
Patients' needs on exercise	3	7.9	35	92.1

Table 3. Frequency and percentage of exercise and physical activity counseling needs among cardiac rehabilitation patients in Indonesia (N = 38)

Variable	Patients' needs on physical activity counseling
Patients' needs on exercise training	.485**

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

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

pressure (Chair et al., 2007). Lack of physical activity can worsen other risk factors such as elevated blood pressure, blood glucose, obesity, blood cholesterol and triglyceride (NHLBI, 2014).

Previous study proved that exercise-based CR can reduce cardiovascular mortality, hospital admissions and improvements in quality of life (Anderson et al., 2016). Nurses can play the role as advocates of patients in informing patients about the significance of establishing a regular pattern of exercise (Chair et al., 2007). Moreover, nurses can maintain adherence to the exercise intervention as prescribed which is significant in affecting mortality (Abell et al., 2017).

Exercise is characterized as part of physical activity in which scheduled, organized and repetitive which are carried out in order to sustain or increase one or more aspects of physical fitness over a specified period (Corrà et al., 2010). Exercise has been shown to be useful to people with cardiovascular disease (CVD) by reducing progression of coronary atherosclerosis (Chair et al., 2007). Regular exercise leads to increased muscle efficiency and reduced demand for myocardial oxygen, resulting in cardiovascular benefits such as lower death rates and lower effects of CAD (Prasad & Das, 2009). As a primary prevention of MI, exercise is not only essential. However, people with MI are expected to exercise regularly after their primary heart attack in order to improve cardiac function and avoid another heart event (Herliani et al., 2016).

The needs for health education among CHD patients are indicated can improve the awareness on CR. Nevertheless, the finding of previous research noted that CR was not optimally conducted as a secondary prevention to avoid repeated MI (Herliani et al., 2015). Moreover, another study also reported

although patient education is considered a core component of CR, there was no educational program which has been standardized for CR patients in Canada (Ghisi et al., 2020).

Ineffective CR program was identified due to existing educational program for CR patients still provide general information rather than taking into account patient information requirements that lead patients to fail to achieve change in behavior and medical goals (Boyde et al., 2015). On the other hand, health-care professionals more concerned with medical treatment, and less about prevention and rehabilitation, so that they had less knowledge on CR program. Self-management information of CHD patients should be highlighted by healthcare professionals (Zhou et al., 2017).

The results of this study show that patients' needs on exercise counseling has a positive statistically significant relationship with physical activity counseling among CR patients ($r = 0.485$, $p < 0.01$). This data is in line with the result of previous study which reported that most CR programs globally offered the core components of exercise training, patient education, and nutrition counselling (Pesah et al., 2017). Therefore, the information regarding exercise and physical activity for CR patients should be provided simultaneously to complement each other. Physical activity and exercise counseling should be involved into the physical activity and exercise program. Previous research noted that involving counseling into the program which was recommended for the patient will result in patient's adherence to their CR recommendations and regular exercise performance after discharging due to satisfaction with the education provided and trusting the information received (Ghisi et al., 2020).

Majority of education for cardiac patients was delivered by nurse (35.7%) (Ghisi et al., 2014). The most frequent educator was nurses (Ghisi et al., 2014). To address patient needs in the cardiac rehabilitation program, nurses' tasks and roles are based on the core components of the cardiac rehabilitation program recommended by AHA (Herliani et al., 2017). Education needs on CR should be addressed in the development of the CR program (Zhou et al., 2017).

People with MI should be empowered to exercise, whether or not they have had a heart event. Specify the frequency (F), intensity (I) and duration (D) of the exercise prescription. Previous study showed that 95% of patients with cardiac rehabilitation did not know the standards for exercise and never measured their RPE (rate of perceived exercise) score before, during and after exercise. They mentioned not realizing that they should monitor their pulse before exercise and not knowing how to measure heart rate (Herliani et al., 2016). Therefore, nurses play a role in providing information related to exercise and physical activity such as teaching family or caregivers pulse measurement.

In present study, most patients mentioned that they needed nurse counseling for physical activities such as evaluating the recent level of physical activity, identifying the needs of daily life, job, and leisure time, and assessing activities based on age, gender, and daily living, such as driving, sexual activity, sports, gardening, and housework, as well as being willing to modify behavior, self-confidence, boundary to greater physical activity and significant changes in social care. Nurses and health care professionals can offer information by following the guidelines such as: historical assessment of the level of physical activity; Advise personalized physical activity through age, past behaviors, co-morbidities, priorities and objectives of the patient; recommend minimum activity; reassure the safety of the recommended procedure (Corrà et al., 2010).

Regarding the needs of the patient for exercise, most respondents noticed that they expected nurses to provide exercise counseling such as evaluating any difficulties that restrict activity during exercise and defining the level of each patient for doing exercise. Nurses and healthcare professionals could provide information by implementing cardiac rehabilitation exercise guidelines such as: assess exercise ability by symptom-limited stress testing; advise individualized exercise after thorough medical assessment, including risk stratification; advise as general instruction sub-maximum aerobic endurance; inform on the identification of stress-induced symptoms (Corrà et al., 2010).

Previous study noted that lack of knowledge

related signs and symptoms of heart disease in people with MI can contribute to a harmful event while exercising. Additionally, a terrible experience leads in a low level of self-efficacy for performing upcoming exercises. The results indicate that people who have high scores of self-efficacy in exercise are more likely to exercise. It has been shown that self-efficacy is a strong predictor of exercise behavior. It is essential for healthcare professionals to foster self-efficacy of exercise by providing education on exercise and physical activity as needed by patients and focusing on the variables that affect people with MI, and essentially empowering them to exercise regularly (Herliani et al., 2016).

CONCLUSION

The findings of this study confirmed that during cardiac rehabilitation, many cardiac rehabilitation patients needed nurses for exercise and physical activity counseling. The needs of CR patients for exercise and physical activity counseling are positively correlated. Information related exercise and physical activity for patients with CR should be delivered simultaneously to avoid recurrent heart events and to promote health for patients with CR.

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