ORIGINAL ARTICLE

Information Needs in Relation to Physical Activity among Angina Patients before Percutaneous Coronary Intervention (PCI) at a Private Hospital in Penang, Malaysia

Ho Siew Eng[1], Jessica Ting Ai Jin[1], Lee Li Ching[2], Wong Pak Fong[1]*

[1]Nursing Division, School of Health Sciences, International Medical University, Kuala Lumpur, Malaysia, [2]Cardiologist, Private Hospital, Penang, Malaysia

Abstract:

Background: Episodes experienced by angina patients are potentially frightening and life threatening. Angina patients lack awareness regarding Percutaneous Coronary Intervention (PCI) as a prognostic benefit. *Aim and Objectives*: To identify the information needs in relation to physical activity among angina patients before PCI at a private hospital in Penang, Malaysia. *Material and Methods:* A cross-sectional study was conducted from April to July 2016; 150 respondents who fulfilled the inclusion criteria were recruited. A 16-item questionnaire related to physical limitations was adapted and modified from Seattle Angina Questionnaire (SAQ). *Results:* The findings reported that majority of respondents (103; 69%) possessed more than one co-morbidity, while 47respondents (31%) single co-morbidity. Those with secondary level education showed (M=15.98, SD±6.14) while tertiary level education reported (M=16.61, SD±6.11), with no significant difference (t= -0.623, p= 0.534) between respondents' education level and physical activity. In terms of occupation, employed (M=15.58, SD±6.42) and unemployed (M=17.31, SD±5.52) also reported significant difference with (t= -1.70, p= 0.04). There was likewise a significant difference between respondents with single co-morbidity (M=18.09, SD±6.88) and multiple co-morbidity (M=15.46, SD± 5.58) with (t= 2.475, p= 0.01).However, there was no significant difference between respondents with previous admission and physical activity (t= 0.868, p= 0.387), as well as respondents' age group with physical activity (t=-0.675, p= 0.501).*Conclusion:* In conclusion, respondents' information needs regarding PCI are significantly associated with occupation and co-morbidity towards physical activity before PCI. Age, educational level and previous admission did not have any effect on respondents' physical activity before PCI.

Keywords: Information Needs, Angina, Patient, Physical Activity, Percutaneous Coronary Intervention

Introduction:

Cardiovascular Diseases (CVD) are the number one cause of death, with an estimated 17.5 million deaths from CVDs in 2012, representing 31% of all global deaths [1]. Of these deaths, an estimated 7.4 million were due to Coronary Heart Disease (CHD). According to the National Heart Association of Malaysia (2011), CVD is one of the main causes of mortality and morbidity in Malaysia [2]. The estimated incidence of Acute Coronary Syndrome (ACS) is 141 out of every 100,000 people per year, and the in-patient mortality rate is approximately 7%. These figures are comparable similar to that of many developed countries [2]. Patients presented with chest pain may be identified as having definite or possible angina from their history alone [3]. However, a study has reported that angina patients' information needs and understanding depends mainly on the physician, and nurses can further assist in increasing awareness and acceptance of the consequences of their conditions [4].

Percutaneous Coronary Intervention (PCI) is considered an absolute way to evaluate an individual's cardiac status for angina and monitor the haemodynamic status. It can be performed as an emergent, planned or rescue procedure [5]. Angina patients' lack of information regarding their condition is related to their physical activities, as well as symptoms of care that would have aggravated their anxiety and contributed to poor compliance to their needs [6]. Previous study has indicated a significant correlation between anxiety and depression levels before and after PCI at the National Heart Institute of Malaysia [7]. This is because PCI is an invasive diagnostic investigation that may result in high level of anxiety and "fear of the unknown" among cardiac patients. The findings from this study highlighted the importance of nurses to engage and provide support to meet the information needs among angina patients [7].

Another study has highlighted lack of awareness regarding PCI as a diagnostic intervention among South Asian women from lower socio-economic group [8]. A better understanding about the treatments involved, individualised care of patients, and shared decision made by the patient and physician would greatly enhance the patient's outcome. This study hoped to gather more information about the factors that influence the physical activity of angina patients before PCI. Thus, the aim of this study was to identify the information needs in relation to physical activity among angina patients before PCI at a private hospital in Penang, Malaysia.

Material and Methods:

Design

A descriptive cross-sectional study design was conducted from April to July 2016 among hospitalised angina patients before PCI at a private hospital in Penang, Malaysia. A total of 150 respondents who fulfilled the inclusion criteria were recruited.

Data collection and instruments

Socio-demographic data comprising 5 items (age, education, employment status, co-morbidity and previous admission) was obtained from respondents. A 16-item questionnaire was adapted and modified from the Seattle Angina Questionnaire (SAQ), a cardiac disease-related measure by Kimble *et al* (2002) [9]. Items were scored according to a 5-point Likert-type scale, which included 1=not at all limited, 2=slightly limited, 3=moderately limited, 4=quite limited, and 5=extremely limited. The questionnaire was piloted and Cronbach alpha.70 suggested that the items had relatively high internal consistency and reliability [9].

Ethical approval

The research was approved by the Research Ethics Committee of International Medical University (IMU) (BN 1/2016: PR-11) and permission was obtained to conduct this study at a private hospital in Penang, Malaysia. The respondents were given an explanatory statement of the study and consent was obtained. The privacy and confidentiality of each respondent was maintained and the respondents were given the rights to withdraw from participating in the study.

Data analysis techniques

Data analysis for this study was done using Statistical Package for Social Science (SPSS) version 22. The respondents' demographic data were analyzed by descriptive statistics and independent t-test to identify the association between the respondents' socio-demographic data with the information needs related to physical activity before PCI.

Results:

The respondents' socio-demographic characteristics are indicated in Table 1. The majority of respondents were below 60 years old (n=90, 60%), while 60 respondents (40%) were over 60 years old. 72 (48%) respondents reported education level up to tertiary level, while 78 (52%) respondents had secondary school level education. Respondents who were employed made up 59% (n=89) of the sample size. 103 respondents (69%) possessed multiple co-morbidities, which may include any combination of diabetes, hypertension, and hyperlipidemia, as opposed to 47 (31%) of respondents who had single co-morbidity (diabetes). The number of respondents' with previous hospital admission less than three times a year (n=121; 81%) was more than those who were admitted more than three times a year (n=29; 19%).

Table 2 showed that there were no significant difference between respondents' education level and physical activity, with secondary level (M=15.98, SD±6.14) and tertiary level (M=16.61, SD±6.11) with (t= -0.623, p= 0.534). There were also significant differences between the respondents' employment status, with employed (M=15.58, SD±6.42) and unemployed (M=17.31, SD±5.52) with (t= -1.70, p= 0.04). Those with single co-morbidity (M=18.09, SD±6.88) and multiple co-morbidity (M=15.46, SD±5.58) showed significant difference with (t= 2.475, p= 0.01). Nevertheless, no significant difference were found (t= 0.868, p= 0.387) between number of respondents' previous admission and physical activity, for admission less than three times a year (M=17.17, SD±4.76) and admission more than three times a year (M=16.07, SD±6.39). There

Table 1: Respondents' Socio-demographic Data		
Variables		**Respondents (n) (%)**
Age	**Below 60 years**	90 (60)
	More than 60 years	60 (40)
Education Level	**Secondary school**	78 (52)
	Tertiary education	72 (48)
Employment status	**Employed**	89 (59)
	Unemployed	61(41)
Co-morbidity	**Single (Diabetes)**	47 (31)
	Multiple co-morbidities (Diabetes, hypertension, hyperlipidemia)	103 (69)
Previous admission	**Less than 3 times/year**	121 (81)
	More than 3 times/year	29 (19)

Table 2: Respondents' Total Mean Score of Socio-Demographic Data with Physical Activity

Variables	Physical activity	Mean ± SD	t	p
Age group	Less than 60 years	16.01 ± 6.21	-0.685	0.501
	More than 60 years	16.70 ± 5.98		
Education level	Secondary level	16.61 ± 6.11	-0.623	0.534
	Tertiary level	15.98 ± 6.14		
Employment status	Employed	15.58 ± 6.42	-1.7	0.044*
	Unemployed	17.31 ± 5.52		
Co-morbidity	Single co-morbidity	18.09 ± 6.88	2.475	0.010*
	Multiple co-morbidities	15.46 ± 5.58		
Previous admission	Less than 3 times/year	17.17 ± 4.76	0.868	0.387
	More than 3 times/year	16.07 ± 6.39		

*p value <0.05 significant differences

were also no significant difference (t= -0.675, p= 0.501) between respondents age group below 60 years old (M= 16.01, SD±6.21) and more than 60 years old (M= 16.70, SD±5.98) with regards to physical activity.

Discussion:

The findings from this research highlighted the importance of information needs related to physical activity prior to PCI at a private hospital in Penang, Malaysia. The respondents' education level reported insignificant differences between tertiary education and secondary school education. The findings are in contrast with Gu *et al.* (2016) [10] who found that lower level of education can lead to limitation of physical activity, and associated with increased levels of anxiety and depression. A similar study has reported that there were an inverse association between educational level and risk of heart failure among angina patients [11]. It is the physicians and nurses' role and responsibility to increase efforts in preventing episodes and severe complications among angina patients, by providing them with appropriate information about PCI, particularly those with lower education level and lack access to such information. The information related to physical activities before PCI should be disseminated toward angina patients in order to increase their understanding of the procedure and prevent recurrence of coronary episodes. This will not only bridge the information gap between angina patients of different education backgrounds, but can also improve survival outcomes and enhance quality of care.

The results of this study reported there were significant differences between the respondents' employment status and information needs related to physical activity before PCI. The unemployed respondents were reported to have higher levels of

physical activity compared to those who were employed. This could be attributed to constraints of time and work commitments for those who are employed, resulting in less time and inclination to perform physical activities such as exercise. This is in contrast with a study, which reported that employment status has been shown to contribute to mental health state and intervention outcomes among coronary cardiac heart patients [12]. They found that unemployed patients mostly had poorer outcomes, and recommended that efforts should be tailored to meet coronary cardiac heart disease patients' need. This notion is further supported by Karsenty *et al.* (2012) [13], who reported that medical history contributed towards employment of adults with CHD, and employment was vital to meet the physical activity needs of CHD prevention.

This study also found that respondents' co-morbidity contributed to limitations of physical activity before PCI. Majority of the respondents' had multiple co-morbidities, including a combination of diabetes, hypertension and hyperlipidemia, which could be aggravating factors in limiting their physical activities. In addition, a study that claimed the severity of chronic disease such as CHD, and limitations in physical activity, are influenced by co-morbidities. Co-morbidities are associated with CHD information needs and expected outcomes [14].

The research findings indicated no significant differences were found between respondents' previous admission and physical activity, as well as their age group and physical activity. From the results of this study, it was inferred that more respondents were employed and thus fell within the below 60 years old age group, therefore they were deemed more physically active compared to those who were unemployed or retired. Another study has reported that the major coronary risk factors are associated with CHD incidence and mortality, especially among those entering the geriatric age [15].

In addition, this study found that respondents who were admitted less than three times a year showed higher physical activity than those who were admitted more than three times a year. The possibility is the majority are more cautious and conscious about their health and wellbeing, while those who have had more than three previous admissions per year were more likely to have other health conditions that required frequent medical treatment. Therefore, the patients' experiences from this study have indicated a need to include relevant hospital's discharge care plan before PCI, in order to strengthen their rehabilitation outcomes. Physicians and nurses need to recognize the patients' information needs related to physical activity in order to provide positive yet realistic outcomes of PCI [16].

Conclusion:

In conclusion, the information needs in relation to physical activity among angina patients before PCI are significantly associated with the employment status and comorbidity. Age, educational level and previous admission did not have any effect on respondents' physical activity before PCI. The findings from this study provide insight into the development of culturally appropriate pre-operative care and discharge education for angina patients at the private hospital in Penang, Malaysia.

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Author for Correspondence: Dr. Ho Siew Eng, Associate Professor, Nursing Division, School of Health Sciences, International Medical University No126, Jalan Jalil Perkasa 19, Bukit Jalil 57000, Kuala Lumpur, Malaysia Email: hosieweng@imu.edu.my Tel: 006-03-86567228