ACTA SCIENTIFIC MEDICAL SCIENCES

Volume 3 Issue 4 April 2019

Research Article

Awareness on Cardiac Rehabilitation in Patients with Coronary Heart Disease Attending A Cardiac Care Centre, Kathmandu Valley

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Received: February 21, 2019; **Published:** March 12, 2019

Abstract

Introduction: Coronary heart disease (CHD) is gradually emerging as a first cause of morbidity and mortality of many Low middle income countries like Nepal. Cardiac rehabilitation awareness program has been proved to be effective for reducing the mortality as well as improving the quality of life among CHD patients. The aim of this study was to explore the awareness on cardiac rehabilitation (CR) in patients with CHD attending a cardiac care centre, Nepal.

Methods: A descriptive cross sectional study design was used to examine 100 CHD patients attending out-patient departments of Shahid Gangalal National Heart Centre (SGNHC), Kathmandu, Nepal. Purposive sampling technique was used for data collection by face to face interview technique with self developed tool. Data was analyzed with descriptive and inferential statistics.

Results: Of all 100 respondents, 55.0% were male and the mean age was 53.23 ± 14.22 years. The median score of awareness was 17 with interquartile range (IQR) 14.0-19.75 and majority (57.0%) of respondents was unaware about CR. The awareness regarding CR was found highest in meaning of CHD (75.0%) whereas lowest in time and duration need for exercise per week (14.0%). The significant influencing variables were age, education status, duration of treatment and participation in CR program for CHD patients.

Conclusions: The awareness on CR program in CHD patients in Nepal is not optimal, especially among 54 and above age group, illiterate people, those receiving treatment equal and more than 1 year duration and the CHD patients who didn't get chance to participate on awareness programs. Hence, it is strongly recommended that nurses should organize health education programs regarding CR to improve the awareness level among CHD patients.

Keywords: Awareness; Cardiac Rehabilitation; Coronary Heart Disease

Introduction

Coronary heart disease (CHD) is the leading cause of morbidity and mortality worldwide, accounting for over one-quarter of all deaths in 2001 and in adult population (33%) of deaths in people under 65 years [1-2]. And it is forecasted that by 2020 CHD will be a major burden of disease worldwide [3]. A person with CHD presents on a continuum of events that includes angina, myocardial infarction (MI), and ischemic heart failure [4]. CHD has become a potential time bomb causing deaths in low and middle income countries like Nepal, where preventive measures have not been effective [5]. It is gradually emerging as one of the major health challenges and prevalence in Eastern region of Nepal is 6% [6]. Outpatient and inpatient rehabilitation are an essential part of tertiary prevention for the long-term success of medical treatment and it reduces both cardiovascular and total mortality rates for patients with CHD. It is also reported that 39.0% (n = 727) of CHD patients had clear indication for rehabilitation for their inpatient hospital stay [7]. Those who did not undergo rehabilitation were more likely to develop diabetes mellitus, arterial hypertension, or peripheral arterial occlusive disease and had lower left ventricular ejection fractions than those who did undergo rehabilitation. Patients with CHD can benefit from CR programs [8]. Therefore, this study was conducted with the purpose of investigating awareness on cardiac rehabilitation in CHD patients.

Methods

A descriptive cross-sectional study design was used to examine 100 CHD patients attending outdoor department of SGNHC, Bansbari, Kathmandu, the largest cardiac centre in Nepal using purposive sampling technique. Patients clinically diagnosed through Coronary angiography for more than three months and able to communicate in Nepali language were included in the study whereas those who were not willing to participate were excluded from this study. Semi-structure questionnaires consisting of three

sections such as demographic (total items-9) and disease related variables (total items-5) and awareness related cardiac rehabilitation (total items-17) was used in data collection. The instrument was pretested and internal consistency of this tool was assessed using Cronbach ά (r = 0.78). Data was collected by interviewing the respondents at outdoor department at Shahid Gangalal national heart centre, Kathmandu, Nepal. Ethical clearance was taken from Institutional Review Board (IRB) of Institute of Medicine (IOM), Tribhuvan University, Kathmandu, Nepal. Informed consent (verbal and written as applicable) was obtained from each respondent. Data was analyzed using Statistical Package for the Social Sciences (SPSS) version 20.0. Descriptive (Percentage, frequency, mean and standard deviation, median, IQR) and inferential (Chi-square test) statistic was used to find out association between level of awareness and selected variables. The level of awareness was classified in to two categories as an aware and unaware based on median value (17) by Shapiro wilk test for normality. The median value of overall awareness was 17 (57.0%).

Results

Table 1 shows that the majority of the respondents were aged 45-59 years (34.0%), male (55.0%), resided in urban (52.0%), were living with family (76.0%), Brahmin/Chhetri (59.0), were Hindu (84.0%), belonged to joint family (51.0), literate (58.0), and housework as an occupation (35.0).

Table 2 shows that the disease related variables of the respondents. Majority of respondents had Angina Pectoris (47.0%) with duration of treatment as 1 year or above (56.0%). And majority of respondents were having continuous medical treatment (51.0%), presence of one comorbidity (37.0%) and did not get chance to participate in CHD awareness programs (56.0%).

Table 3 shows awareness scores regarding CR, highest score of the respondents found in meaning of CHD (75.0%) and lowest in time and duration need for exercise per week (14.0%).

Table 4 shows the respondents' level of awareness regarding CR and majority were unaware (57.0%) about CR among CHD patients.

Table 5 shows the level of awareness and socio-demographic characteristics were significantly associated with age (p = 0.007) and educational status (p = 0.013) at p value <0.05.

And Table 6 also represented that level of awareness and disease related variables was highly significant with duration of treatment (p = 0.039) and participation in awareness program (p = 0.001) at p value <0.05.

Variables	Frequency/Percent
Age group (in years)	
30-44	29.0
45-59	34.0
60-74	26.0
>74	11.0
Mean age ± SD= 53.23±14.22; Min =30 and Max 88 years	
Sex	
Male	55.0
Female	45.0
Place of Residence	
Rural	48.0
Urban	52.0
Living Status	
Living with family	76.0
Living single*	24.0
Ethnicity	
Brahmin/Chhetri	59.0
Janajati	35.0
Dalit	6.0
Religion	
Hindu	84.0
Non-Hindu	16.0
Type of Family	
Nuclear	49.0
Joint	51.0
Education	
Literate	58.0
Illiterate	42.0
Occupation**	
Farming	21.0
Housework	35.0
Service	23.0
Business	21.0

Table 1: Socio-demographic Characteristics of the Respondents. n=100

*Included unmarried, divorced, widower/widow; **Included household activities like cooking, washing, cleaning, etc but do not earn money

Variables	Frequency/Percent
Clinical Diagnosis	
Myocardial Infarction	28.0
Angina Pectoris	47.0
Ischemic heart disease	25.0
Duration of Treatment	
<1 year	44.0
≥1Years	56.0
Mode of Treatment*	
CMT	51.0
PI	12.0
CABG	8.0
CMT+PI	13.0
CMT+CABG	8.0
CMT+PI+CABG	8.0
Presence of Co-morbidities	
None	16.0
Only one	37.0
Only two	20.0
All three	27.0
Participated in CR program for CHD patient	
Yes	44.0
No	56.0

Table 2: Disease related Variables of the Respondents.

n=100

**CMT=Continuous Medical Treatment, PI= Percutaneous Intervention and CABG= Coronary Artery Bypass Graft*

Knowledge	Frequency/ Percent
Meaning of CHD	75.0
Type of CHD	45.0
Causes of Angina	35.0
Causes of MI	44.0
Causes Heart failure	47.0
Diagnostic measures for CHD	32.0
Meaning of Stent	27.0
Need of cardiac rehabilitation for CHD patient	58.0
Type of Exercise	26.0
Time and duration need for exercise/week	14.0
Point to be considered before starting exercise	21.0
Meaning of healthy diet	63.0
Special point to maintain QOL of patients	53.0
Right time for resuming duty after CABG	24.0
Precautions to be taken to avoid complication	59.0
Management of emergency conditions	49.0
Complication of CHD	53.0

Table 3: Awareness Scores Regarding Cardiac Rehabilitation of the Respondents.

n=100

Awareness Level	Frequency/Percent
Unaware (<57.0%)	57.0
Aware (≥57.0%)	43.0
Total	100.0

Table 4: Respondents' Level of Awareness Regarding CR.

Median score of overall Awareness=17 (IQR=14.0-19.75)

Socio-demographic characteristic	Level of Awareness regarding CR		χ^2 Value	*P* Value*
	Aware No. (%)	Unaware No. (%)		
Age in years				
<54	29(55.8)	23(44.2)	7.20	0.007
54 and above	14(29.2)	34 (70.8)		
Gender				
Male	24 (43.6)	31 (56.4)	0.02	0.887
Female	19 (42.2)	26 (57.8)		
Residence				
Urban	21 (40.4)	31 (59.6)	0.302	0.582
Rural	22 (45.8)	26 (54.2)		
Living Status				
Living Single	8(33.3)	16(66.7)		
Living with Family	35 (46.1)	41 (53.9)	1.20	0.273
*Ethnicity				
Brahmin/Chhetri	26(44.1)	33(55.9)	0.067	0.796
Janajati/Dalit	17(41.5)	24(58.5)		
Religion				
Hindu	36 (42.9)	48(57.1)	0.004	0.947
Non-Hindu	7(43.8)	9(56.2)		
Type of Family				
Nuclear	20(40.8)	29 (59.2)		
Joint Family	23 (45.1)	28 (54.9)	0.187	0.665
Educational status				
Literate	31 (53.4)	27 (46.6)	6.151	0.013
Illiterate	12 (28.6)	30 (71.4)		
Occupation				
Farming and House-work	24 (42.9)	32 (57.1)	0.001	0.974
Service and Business	19(43.2)	25(56.8)		

Table 5: Association between Level of Awareness regarding CR and Socio- demographic Characteristics.

n=100

Significance level<0.05, *Pearson chi square

Disease related variables	Level of Awareness regarding CR		χ^2 Value	*P* Value*
	Aware No. (%)	Unaware No. (%)		
Clinical Diagnosis				
Angina and IHD	33(45.8)	39(54.2)	0.842	0.359
Myocardial Infarction	10(35.7)	18(64.3)		
Duration of Treatment				
<1 year	24(54.5)	20(45.5)	4.273	0.039
≥1 years	19(33.9)	37(66.1)		
Mode of Treatment				
Invasive	21(42.9)	28(57.1)	0.001	0.977
Non- invasive	22(43.1)	29(56.9)		
Regular intake of hypertensive medication				
Yes	35(79.5)	9(20.5)	1.638	0.201
No	15(65.2)	8(34.8)		
Co-morbidity				
Present	36(42.9)	48(57.1)	0.004	0.947
Absent	7(43.8)	9(56.2)		
Participated in CR program				
Yes	10(22.7)	34(77.3)	13.175	0.001
No	33(58.9)	23(41.1)		

Table 6: Association between Level of Awareness regarding CR and Disease Related Variables

n=100

Significance level<0.05, * Pearson chi-square

Discussion

The mean age of respondents was 53.23 years in this study. While different studies reported slightly higher mean age such as in Canada [9] (64.6) and in China [10] (62.51), which might be due to the higher incidence of CHD occurrence in middle aged group in LMICs like Nepal. In this study, regarding socio-demographic characteristics, majority of the respondents were aged 45-59 years (34.0%), male (55.0%), resided in urban (52.0%), living with family (76.0%), Brahmin/Chhetri (59.0%), Hindu (84.0%), belonged to joint family (51.0%), literate (58.0%), and housework as an occupation (35.0%). This findings was consistent with a study done in Nepal [11].

Regarding disease related variables, majority of respondents had Angina Pectoris (47.0%) with duration of treatment as 1 year or above (56.0%), mode of treatment (51.0%), presence of one co morbidities (37.0%) and did not get chance to participate in CR program (56.0%). This findings was consistent with a study done in Nepal [12] Similarly, another study conducted in Spain reported angina pectoris is the most common diagnosis among CHD patient [13].

Awareness scores regarding CR were highest in meaning of CHD (75.0%) and lowest in time and duration need for exercise per week (14.0%). Fifty seven percent of the respondents were unaware about CR. This finding was consistent with a study done in China reported by Zhou (2017) that level of awareness was low (52.69%) [8].

Similarly, the significant associated factors between level of awareness regarding CR and selected variables were age (p = 0.007), educational status (p = 0.013), duration of treatment (p = 0.039) and participation in awareness programs (p = 0.001). This finding was supported by a study done in China which found that older CHD patients were significantly associated with low level of awareness with CR program [8].

Conclusion

Our study found that patient's awareness on CR was low, especially for fifty four and above aged group, illiterate CHD patients, more than and equal to one years of duration of treatment and participation in awareness program. Hence, health care professionals including nurses should organize and promote CR program and strengthen the education on it to enhance their awareness level as well as for improving the quality of life.

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