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Original Research Article

Health - Related Quality Of Life of Patients with Coronary Heart Disease: A Pilot Study Report

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ABSTRACT

Background: Coronary heart disease (CHD) is the leading cause of global mortality. CHD is gradually emerging as one of the major health challenges in Nepal. The Health-related Quality of Life (HRQL) needs to be regularly assessed in the patients with CHD. This study aims to assess the HRQL of CHD patient and measures the association of selected variables with HRQL.
Methods: A descriptive cross sectional design was used to assess HRQL of 30 CHD patients attending out-patient department of Norvic International Hospital, Kathmandu, Nepal from 23rd November to 10th December 2013. They were enrolled and interviewed with the MacNew Health - related Quality of Life questionnaire.
Results: The results showed that mean ± SD for emotional domain was 5.23 ± 0.59, physical domain was 4.83 ± 0.82 and social domain was 4.89 ± 0.83 and global score of HRQL was 4.98 ± 0.70 on 7- point likert scale score. Age, sex, educational status, family income, duration of treatment, associated co-morbidities and use of leisure time were the major significant determinants of HRQL of CHD patients. Physical pain was the most common barrier to limit the HRQL as perceived by them.
Conclusion: Major barrier for maintaining HRQL among CHD patients was physical pain and HRQL mean score also was lower in physical domain among three domains of HRQL. Hence, Self Instructional Module (SIM) on "Living well with CHD" needs to be developed for overcoming these limiting factors.

Key Words: Coronary Heart Disease; Cardiac Centre; Health - related Quality of Life.

INTRODUCTION

Health - related Quality of Life (HRQL) is viewed as a multi-dimensional concept which encompasses physical, psychological and social functioning and well being, which focuses on the individual's subjective experience. [1] Physicians' and patients' perspectives on HRQL can be very different. [2] World Health Organization (WHO) has defined "HRQL" as individual's perceptions of their position in life in the context of the culture and value systems where they live and in relation to their goals, expectations, standards and concerns. [3]

HRQL is an important predictor and widely used outcome measure in Coronary Heart Disease (CHD) patients. [4,5] Patients with ischemic heart disease (IHD) present on a continuum of events that includes the presence of risk factors, angina, myocardial infarction (MI), and ischemic heart failure, often with marked health-status deficit

including HRQL. [6] CHD is a severe chronic illness that not only contributes to the escalating costs of health care but also dramatically impairs the patient's HRQL due to heart dysfunction, lifelong medication and psychological burden. [7] In recent years, the increasing incidence of CHD has become a potential time-bomb causing deaths in low and middle income countries like Nepal, where preventive measures have not been effective. In addition to this, early diagnosis and proper management of cases of CHD have still continued to be a challenging task. [5]

Looking at the world scenario, 17.3 million people died from CVDs in 2005, representing 30% of all deaths. Of these deaths, an estimated 7.6 million deaths were due to CHD. Out of which over 80% of the deaths are in low and middle-income countries and almost equally in men and women. If the current trend continues, new cases will increase to 23.3 million, comprising 35% of all deaths in 2030. [8]

A total of 21.7% of CHD patients visited Shahid Gangalal National Heart Centre (SGNHC), out of 52837 out patients and 2637 in patients department, which accounts for second most common cause for visit. [9] Based on extensive literature search, there is no similar study conducted in Nepal addressing this issue. In this regard, this study acts as an initial step for investigation of the HRQL among CHD patients in Nepal. Objectives of this study are to assess the HRQL of CHD patient, measure the association and contribution of selected variables with HRQL, and describe the perceived barriers of HRQL among CHD patients.

MATERIALS AND METHODS

A cross-sectional study was undertaken among 30 CHD (angina pectoris, myocardial infarction and ischemic heart failure) patients attending out-patient department of Norvic International Hospital, Kathmandu, Nepal applying purposive sampling technique. Nepali speaking patients with more than 3 months clinically diagnosed through coronary angiography were included in the study. A semi-structure questionnaire consisting a demographic, associated co-morbidity, behavioral characteristics (smoking status, dietary pattern, alcohol consumption, working per hours, regular exercise and use of leisure time), MacNew health-related quality of life and barrier (Physical pain, Stress related to disease, Dietary restriction, Restriction in consumption alcohol, Physical activity restriction and others, e.g., financial constraints etc) perceived among CHD patients was implemented for face to face interview technique from November, 2013. HRQL was measured by using MacNew HRQL likert scale which assesses 'emotional', 'physical' and 'social' domains. This scale uses seven possible responses, where "1" represents the lowest HRQL and "7" the highest. [10] MacNew HRQL tool was first translated to Nepali language and later retranslated to English language. While translating the original tool to Nepali, both linguistic expert as well as cardiologist was consulted. In this process, firstly, a linguistic expert translated the MacNew HRQL tool into Nepali then a cardiologist to confirm the originality of the tool verified it. After that back translation to English was done by another linguistic expert and which was again verified by a cardiologist. The translated version of the tool after frequent translation was sent to the MacNew team to acquire the permission for data collection in studied context. While translating the tools necessary modification was done based on the suggestion of the cardiologist so that it will fit with the studied context.

Ethical approval was taken from the Institutional Review board (IRB) of the Institute of Medicine (IOM), Tribhuvan

University, Kathmandu. Then a signed informed consent was obtained. Respondents were assured of the confidentiality of the information and would be used only for study purpose. Validity of the tool was maintained by review of literatures, subject expert's opinion and research advisor's suggestions. Similarly, reliability (Internal consistency) of the MacNew HRQL tool was assessed by using Cronbach ά (r = 0.78).

Data was analyzed by using SPSS version 17.0. Descriptive (Percentage, frequency, mean and standard deviation, mean percentage) and inferential (independent sample t test, ANOVA, Karl's Pearson coefficient and regression) statistics were also used.

RESULTS

Difference in MacNew Scores in term of socio-demographic characteristics (Table 1): The mean age of participants in our study was 64.63 ± 13.37 and 23 (76.7%) out of them were male. Similarly, highest mean score of HRQL was found in 45-59 years age group (5.60), out of them were male (5.50), persons residing at urban area (5.31), unmarried (5.41), Terai caste ethnic group (6.13), Buddhist (5.63), literate persons (5.51), persons with business as occupation (5.77) and persons with monthly family income of NRs 50000-100000 (5.68). However, there is significant differences in HRQL score based on age (p= 0.025), sex (p=0.003), educational status (p=0.002) and family income (0.030).

Table 1: Demographic Characteristics and its Association with HRQL (n=30)

Characteristics	No. (%)	Independent sample t test / ANOVA		
		Mean ± SD	t / F value	p-value
Age group (in years)				.
45-59	12 (40.0)	5.68 ± 0.58		
60-74	13(43.3)	4.94 ± 0.76	4.23**	025
>74	5(16.7)	5.34 ± 0.33		
Mean ± SD - 64.63 ± 13.376, Minimum- 45, Maximum- 99				
Sex				
Male	23 (76.7)	5.50± 0.64	3.20*	.003
Female	7 (23.3)	4.65 ± 0.50		
Living Place				
Urban	27 (90.0)	5.31±.730	0.66*	0.80
Rural	3 (10.0)	5.20±.603		
Marital Status				
Unmarried	1 (3.3)	5.41	0.43**	0.65
Married	28 (93.3)	5.32 ± 0.72		
Widow/ Widower	1 (3.3)	4.64		
Ethnicity				
Brahmin	8 (26.7)	5.01± 0.730		
Chhetri	1 (3.3)	5.77		
Janajati	18 (60.0)	5.27 ± 0.68	2.18**	0.114
Terai caste	3 (10.0)	6.13 ± 0.54		
Religion				
Hindu	26 (86.7)	5.25 ± 0.69		
Buddhist	4 (13.3)	5.63 ± 0.81	-0.98*	0.334
Educational Status				
Literate	21 (70.0)	5.51 ± 0.72	3.47*	
Illiterate	9 (30.0)	4.82 ± 0.36		0.002
Occupation				
Agriculture	3 (10.0)	4.60 ± 0.55		
Business	7 (23.3)	5.77 ± 0.63		0.092
Housewife	8 (26.7)	5.02 ± 0.61	2.25**	
Service	10 (33.3)	5.44 ± 0.66		
Others	2 (6.7)	5.14 ± 1.04		
Family income				
<50000	22 (73.3)	5.36 ± 0.61		
50000-100000	5 (16.7)	5.68 ± 0.79	3.98**	
>100000	3 (10.0)	4.51 ± 0.62		0.030

*** Independent sample t test** **** One way ANOV**

Table 2: CHD Presentation and Associated Co morbidity and its' Association with HRQL (n=30)

Characteristics	No. (%)	Mean ± SD	t or F value	p-value
CHD Presentation				
Myocardial Infarction	1033.3)	5.26 ± 0.65		
Angina Pectoris	16(53.3)	5.32 ± 0.81	0.35**	.966
Ischemic Heart Failure	4(13.3)	5.36 ± 0.50		
Treatment duration of CHD				
3-6 month	8(26.7)	4.64±0.61	-3.66*	0.001
>6 month	22(73.3)	5.54 ± 0.58		
Associated Co-morbidity				
Hypertension	16 (53.3)	4.75±0.40	47.16**	0.001
Diabetes mellitus	10 (33.3)	5.78±0.29		
None	4(13.3)	6.32±0.13		

Table 3: Behavior Characteristics and its Association with HRQL (n=30)

Variables	No. (%)	Mean ± SD	t or F value	p-value
Smoking currently				
Yes	3 (10)	4.62± 0.59	1.83	.077
No	27 (90)	5.38±0.68		
Past smoker				
Yes	12 (40)	5.12±0.72	1.15	0.256
No	18 (60)	5.42±0.69		
Dietary Pattern				
Vegetarian	5 (16.6)	5.74±0.69	1.53	0.137
Non vegetarian	25 (83.4)	5.22±0.70		
Alcohol consumption				
Yes	10 (33.3)	5.27±0.68	-0.366	0.717
No	20 (66.7)	5.37±0.73		
Working per day				
<6 hours	12 (40)	5.09±0.76	-1.38	0.178
>6 hours	18 (60)	5.45± 0.65		
Regular exercise				
Yes	16 (53.3)	5.29±0.744	0.095	0.925
No	14(46.7)	5.32±0.69		
Use of leisure time				
Actively	4 (13.3)	4.45±0.22	-5.63	0.001
Passively	26 (86.7)	5.43±0.66		

Difference in MacNew Scores in term of CHD presentation (Table 2) and Behaviour patterns of the CHD patients (Table 3): The patients with ischemic heart failure (5.36), more than 6 months treatment duration (5.54), and absence of associated co-morbidities (6.32) had the highest HRQL mean score (table 2). Similarly, the respondents who are not currently smokers (5.38) or a non-smokers (5.42), vegetarian (5.74), non-alcoholic (5.37), and working more than 6 hours per day (5.45) had the highest HRQL mean score. However, there is significant differences in HRQL score based on treatment duration ($p= 0.001$), associated co- morbidities ($p<0.001$) and use of leisure time ($p<0.001$).

HRQL Score in different domains (Table 4): HRQL was assessed in mainly three domains- namely emotional, physical and social domain. The mean HRQL score on emotional domain was 5.23(0.59), social domain was 4.89(0.83) and physical domain was 4.83(0.82) with global HRQL mean score 4.98(0.70).

Table 4: Descriptive statistics for HRQL and its Domains (n=30)

Domains	Possible range	Mean ± SD	Observed range
Emotional	1-7	5.23 ± 0.59	4.07-6.14
Physical	1-7	4.83 ± 0.82	3.2-6.27
Social	1-7	4.89 ± 0.83	3.35-6.2
Global score	1-7	4.98 ± 0.70	3.66-6.14

Table 5: Major Factors Limiting HRQL among CHD Patients(n=30)

Factors	Number	%
Physical pain	17	56.7
Stress related to disease	5	16.7
Dietary restriction	4	13.3
Restriction in consumption alcohol	1	3.3
Physical activity restriction	2	6.7
Others, e.g., financial constraints	1	3.3
Total	30	100.0

Perceived major barriers to HRQL of the Respondents (Table 5): Majority of respondents (56.7%) perceived major barrier to limit their HRQL was physical pain whereas only 3.3% of respondents perceived barrier as financial problem.

DISCUSSION

Cardiovascular patients are likely to have an impaired health-related quality of life (HRQoL) due to functional and psycho-social limitations. Our results for the first time revealed the HRQL of CHD patients, and demonstrated that significantly difference in HRQL score based on age (p= 0.025), sex (p=0.003) and educational status (p=0.002) through the MacNew HRQL score tool. Our findings were consistent to previous investigations which also reported that people with CHD have significantly impaired HRQL. [11] Majority of respondents was literate (70%). This is supported by the study conducted by Vaidya et al. among cardiovascular health with knowledge, attitude and practice/behaviour with demographic variables; age, sex, educational status and family income were significant. [12]

Regarding CHD presentation and associated co-morbidities and its association with HRQL, the most important clinical diagnosis among CHD was angina pectoris (53.3%). However, study conducted in Turkey shows myocardial infarction as the most common clinical diagnosis among the CHDs. [13] Treatment duration and associated co-morbidity are statistically significant with HRQL. Similar findings were reported in a study done by Hofer et al. in Austria and another study conducted in Spain. [14]

Concerning the behavioral characteristics, majority of respondents in the study are currently found to be non-smoker (90%), alike the study conducted by Wong. [15] The study also indicated that HRQL scored highest on emotional domain mean ± SD (5.23 ± 0.59). In contrast to these finding, the subjective HRQL should be considered along with the clinical severity of the disease in the evaluation of CAD. [16]

Study limitations of this study include the small sample size, the cross sectional design and hospital-based study. Replication using a large sample from a national level cardiac hospital is on the pipeline.

CONCLUSIONS

The goal of health care is to prolong the lives of people and to improve the quality of their lives. HRQL is the subjective experience of a person concerning his or her own life. The ultimate purpose of all health interventions is to enhance the quality of life and it is widely used to measure the impacts of disease and available treatment modalities for CHD patients all over the globe. HRQL of CHD patients is influenced by many different determinants, namely patient's age, sex, educational status, family income, duration of treatment, associated co-morbidities and use of leisure time. Hence, measures can be focused on the specific areas of life to improve HRQL. Major domain of HRQL was emotional domain and major perceived barrier was physical pain. Since considerable proportion of patients with CHD tends to be literate and SIM would be beneficial for enhancing their HRQL. Further study need to be conducted with large sample size, community based study and time dimension longitudinal study.

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