Health - related Quality of Life of Patients with Coronary Heart Disease Attending a Cardiac Care Centre in Kathmandu

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Abstract

Introduction: Coronary heart disease (CHD) is gradually emerging as a major public health problem in many developing countries including Nepal. Consequences of CHD are that it often results in depletion of the health related quality of life (HRQL) of patients. The aim of this study was to assess the HRQL of CHD patients.

Methods: A descriptive cross sectional design was used to assess HRQL of 254 CHD patients attending out-patient department of Shahid Gangalal National Heart Centre (SGNHC), Bansbari, Kathmandu, Nepal. Purposive sampling technique was used for data collection by face to face interview technique using the MacNew Health - related Quality of Life tool.

Results: The results of the study showed that mean ± SD for emotional domain was 3.87 ± 1.01, for physical domain was 3.81 ± 0.88 and social domain was 3.82 ± 0.88 and global score of HRQL was 3.83 ± 0.87 on 7- point likert scale. The different domains of HRQL was significantly correlated with each others. The descriptive statistics of individual domain scores according to level of HRQL was found to be greater in below average group in each domain including global HRQL score.

Conclusions: The HRQL score of CHD patients attending a cardiac centre are below average. Hence, Self Instructional Module (SIM) on "Living well with CHD" was developed to enhanced quality of life.

Key words: Coronary heart disease, health- related quality of life, cross sectional study, Nepal

Introduction

Coronary heart disease (CHD) is the leading cause of mortality in adult population which is responsible for 33% of deaths in people under 65 years[1]. It is the major cause of disability in many developed countries and it is forecasted that by 2020 CHD will be a major burden of disease worldwide[2]. A person with CHD presents on a continuum of events that includes angina, myocardial infarction (MI), and ischemic heart failure, often with marked health-status deficits including poor health related quality of life (HRQL)[3].

HRQL is an important predictor and widely used outcome measure in CHD patients[4]. Coronary heart disease affects 15.8 million US adult populations and it is associated with significant impairment of health related quality of life[5]. CHD is a severe chronic illness which not only contributes to the escalating costs of health care but the patient's HRQL is also dramatically impaired due to heart dysfunction, lifelong medication and psychological burden[6]. 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[7].

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 people 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].

CHD is gradually emerging as one of the major health challenges in Nepal. The burden of coronary heart disease is increasing in Nepal due to rapid change in life style. Unhealthy health habits (smoking, sedentary life style etc) and economic developments are considered to be responsible for the increase in prevalence (6%) of CHD in Eastern region of Nepal [9].

Review of literature revealed no studies so far been conducted in Nepal addressing this issue. Therefore this study was conducting with the purpose of investigating HRQL among CHD patients in Nepal. The specific objectives of the study were to assess the HRQL of CHD patients and to identify correlation between different domains of HRQL among CHD patients.

Methods

A descriptive cross-sectional study was undertaken among 254 CHD (angina pectoris, myocardial infarction and ischemic heart failure) patients attending out-patient department of SGNHC, Bansbari, Kathmandu, the largest cardiac centre in Nepal using purposive sampling technique. Nepali speaking patients with more than 3 months duration of clinical diagnosed through coronary angiography were included in the study. Semi-structure questionnaire consisting of three sections such as demographic and disease related characteristics and MacNew health-related quality of life (HRQL) scale was used in data collection. Data was collected by interviewing the respondents at outdoor department in hospital setting by the principal author from February to May, 2014. MacNew HRQL scale included 'emotional', 'physical' and 'social' domains with seven possible responses, where "1" represents the lowest HRQL and "7" the highest[10]. Global HRQL score was considered as the overall HRQL score in this study. Instrument was checked for adequacy and appropriateness of items by two cardiologists. The translation and linguistic validation of the MacNew HRQL tool was done according the direction of the MacNew questionnaire. The cultural linguistic validation process consists of three steps: forward

translation, backward translation and patient testing. The instrument was pretested and Internal consistency of the MacNew HRQL scale was assessed using Cronbach ά (r = 0.78).

Research proposal was approved by the research committee of Nursing Campus. Ethical clearance was taken from Institutional Review board (IRB) of Institute of Medicine (IOM), Tribhuvan University, Kathmandu. Informed consent was obtained from each respondent. Respondents were assured of the confidentiality of the information.

Data was analyzed using SPSS version 17.0. Descriptive (Percentage, frequency, mean and standard deviation, mean percentage and 95% CI) and inferential (independent sample t test, one way ANOVA and Karl's Pearson coefficient) statistics were used to find out association between HRQL score and selected variables of the respondents.

Results

Table 1 shows that the mean age of respondents was 58.29 years with standard deviation as 10.46 years. Seventy two percentages of the respondents were male. A total of 92.5% of the respondents were living with family. Most (85.0%) respondents were Hindu by religion, 63.4% was literate and 53.1% was resided in rural area. Regarding disease related characteristics, majority (67.3%) of respondents had myocardial infarction with duration of treatment as 1 year or above (56.3%). In regards to presence of comorbilities, majority had hypertension, hyperlipidemia and diabetes mellitus (71.7%, 71.3% and 56.7% respectively).

HRQL was assessed in mainly 3 domains namely emotional, physical and social domain which is presented below in table 2, 3 and 4 respectively.

Table 2 depicts that the overall mean score on the emotional domain was 3.87 ± 1.01 with lowest being 3.24 ± 1.64 for the item "relaxed" and highest being 5.90 ± 2.12 for the item "tearful feeling" and difference was statistically significant (p=0.001) which indicates that emotional domain is an influencing variables for global HRQL (Table 2).

Table 3 reveals that the overall mean score on the Physical domain was 3.81 ± 0.88 with lowest being 3.14 ± 1.57 for the item "aching leg" and highest being 4.61 ± 1.54 for the item "physically restricted" and difference was statistically significant (p=0.001), which indicates that physical domain is an influencing variables for global HRQL (Table 3).

Table 1 Socio-demographic and Disease related Characteristics of Patients with Coronary Heart Disease

(n=254)

Patient characteristics	Number (%)	Patient characteristics	Number (%)
Age group (in years)*		**Occupation**	
30-44	29 (11.40)	Agriculture	70 (27.6)
45-59	112 (44.10)	House work***	67 (26.4)
60-74	95 (37.40)	Service	64 (25.2)
>74	18 (7.10)	Business	53 (20.9)
Sex		**Clinical Diagnosis**	
Male	184 (72.4)	Myocardial Infarction	171 (67.3)
Female	70 (27.6)	Angina Pectoris	73 (28.7)
		Ischemic Heart Failure	10 (3.9)
Ethnicity	131 (51.6)	**Mode of treatment*******	
Brahmin/ Chhetri	85 (33.5)	CMT	118 (46.5)
Indigenous/Janajati	38 (15.0)	CMT+PI	105 (41.3)
Dalit		CMT+PI+CABG	22 (8.7)
		CMT+CABG	9 (3.5)
Family Status	235 (92.5)	**Duration of Treatment**	
Living with Family	19 (7.5)	< 1 year	111 (43.7)
Living Single**		≥1 years	143 (56.3)
Religion	216 (85.0)	**Presence of Hypertension**	
Hindu	38 (15.0)	Yes	182 (71.7)
Non Hindu		No	72 (28.3)
Educational Status		**Presence of Diabetes**	144 (56.7)
Literate	161 (63.4)	Yes	110 (43.3)
Illiterate	93 (36.6)	No	
Place of Residence		**Presence of Hyperlipidemia**	
Rural	135 (53.1)	Yes	181 (71.3)
Urban	119 (46.9)	No	73 (28.7)

*Mean age ± SD=58.29±10.46, Minimum33-, Maximum-99;   ** Included unmarried, divorced, widower or widow

***House work included household activities like cooking, washing, cleaning, etc but do not earn money.

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

Table 2 Health Related Quality of Life Scores on Emotional Domain

(n=254)

Items*	Mean	SD	Mean %	p-values
Felt frustrated, impatient or angry	3.96	1.52	56.57	**0.001**
Felt worthless or inadequate	4.04	1.86	57.71	**0.001**
Confident and sure about dealing with heart problem	3.40	1.95	48.57	0.423
Feel discouraged or down in the dumps	3.48	1.91	49.71	0.870
Relaxed and free of tension	3.24	1.64	46.28	**0.014**
Worn out or low in energy	3.40	1.70	48.57	0.340
Happy with personal life	4.09	1.28	58.42	**0.001**
Felt restless, or feeling difficult to calm down	3.76	1.48	53.71	**0.005**
Felt tearful or like crying	5.90	2.12	84.28	**0.001**
Unable to social activities	3.77	1.73	53.85	**0.013**
Felt less confidence by others after heart problem	3.53	2.27	50.42	0.847
Lacked self confidence	3.71	1.74	53.00	0.054
Felt apprehensive or frightened	4.11	1.90	58.71	**0.001**
Burden on others	4.83	1.72	69.00	**0.001**
Total	**3.87**	**1.01**	**55.28**	**0.001**

* Possible range of score was from 1 to 7; p significant at ≤ 0.05 level

Table 3 Health Related Quality of Life Scores on Physical Domain

(n=254)

Domains	Mean	SD	Mean %	p-values
Worn out or low in energy	3.40	1.70	48.57	0.340
Shortness of breath	3.67	1.55	52.42	0.092
Unable to social activities	3.77	1.73	53.85	**0.013**
Chest pain	3.63	1.67	51.85	0.232
Aching legs	3.14	1.57	44.85	**0.001**
Sports/exercise limited	3.84	1.78	54.85	**0.002**
Dizzy/lightheaded	4.19	1.84	59.85	**0.001**
Restricted or limited activities	4.46	1.44	63.71	**0.001**
Unsure about exercise	3.99	1.58	57.00	**0.001**
Excluded from doing things with others	3.93	1.68	56.14	**0.001**
Unable to socialize	3.53	1.86	50.42	0.370
Physically restricted	4.61	1.54	65.85	**0.001**
Interfered sexual intercourse	3.48	1.91	49.71	0.664
Total	**3.81**	**0.88**	**54.42**	**0.001**

* Possible range of score was from 1 to 7; p significant at ≤ 0.05 level

Table 4 Health Related Quality of Life Scores on Social Domain

(n=254)

Domains	Mean	SD	Mean %	p-values
Feeling of worthless or inadequate	4.04	1.86	57.71	**0.001**
Became more dependent	3.62	1.76	51.71	0.288
Unable to do usual social activities	3.77	1.73	53.85	**0.013**
Confident and sure about dealing with heart problem	3.53	2.27	50.42	0.847
Lacked self-confidence	3.71	1.74	53.00	0.054
Sports/exercise limited	3.84	1.78	54.85	**0.002**
Restricted or limited activities	4.46	1.44	63.71	**0.001**
Unsure about exercise	3.99	1.58	57.00	**0.001**
Overprotective family	2.96	1.54	42.28	**0.001**
Burden on others	4.83	1.72	69.00	**0.001**
Excluded from doing things with other people	3.93	1.68	56.14	**0.001**
Unable to socialize	3.53	1.86	50.42	0.370
Physically restricted	4.61	1.54	65.85	**0.001**
Total	**3.82**	**0.88**	**54.57**	**0.001**

* Possible range of score was from 1 to 7; p significant at ≤ 0.05 level

The overall mean score on social domain was 3.82 ± 0.88 with lowest being 2.96 ± 1.54 for the item "over protective family" and highest being 4.83 ± 1.72 for the item "feelings of burden on others" and difference was statistically significant (p=0.001) which indicates social domain is an influencing variables for global HRQL (Table 4).

The highest HRQL mean score was found in emotional domain (3.87), lowest was in physical domain (3.81) whereas global HRQL scores was 3.83 and the difference was statistically significant (p=0.001), which indicated that major influencing domain for global HRQL score was emotional domain (Table 5).

Table 5 Descriptive Statistics of Health Related Quality of Life Score on Different Domains

(n=254)

Domains	Possible range	Mean ± SD	Mean Percentage	Observed range	p-value
Emotional	1-7	3.87 ± 1.01	55.28	1 - 6.43	**0.001**
Physical	1-7	3.81 ± 0.88	54.42	1 - 7.00	**0.001**
Social	1-7	3.82 ± 0.88	54.57	1 - 6.46	**0.001**
Global score	1-7	3.83 ± 0.87	54.71	1 - 6.26	**0.001**

P significant at ≤ 0.05 level

A positive correlation was found between emotional vs. physical domain, physical vs. social domain and social vs. emotional domain of HRQL (p value <0.001) and highest correlation value was 0.914 between physical and social domain, followed by social and emotional (0.826) and emotional and physical (0.813) which were statistically significant (p=0.001) (Table 6). The level of HRQL according to individual domains revealed that majority of respondents had below average HRQL score, which was statistically significant (Table 7).

Table 6 Relationship between Different Domains of MacNew Health Related Quality of Life Scores

(n=254)

Domains	Pearson's Correlation Coefficient	P value*
Emotional Domain vs. Physical domain	0.813	**0.001**
Physical Domain vs. Social domain	0.914	**0.001**
Social Domain vs. Emotional domain	0.826	**0.001**

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

Table 7 Association between individual domains according to level of Health Related Quality of Life

(n=254)

HRQL Domains	Level of HRQL		P value
	Below average Number (%)	Above average Number (%)	
Emotional	140 (55.10)	114 (44.90)	0.001
Physical	143 (56.30)	111 (43.70)	**0.001**
Social	133 (52.4)	121 (47.6)	**0.001**
Global	137 (53.9)	117 (46.1)	**0.001**

P significant at ≤ 0.05 level

Discussion

The mean age of respondents was 58.29 years in this study. Similar findings were presented in a study conducted in Netherlands [11] and in Tehran [12], which might be due to the higher incidence of CHD occurred in middle aged group in LMICs like Nepal, the middle aged people are mainly affected due to adaptation of western life style such as intake of fast food, unhealthy habit (smoking, alcohol consumption, stressful life etc). In this study, majority of the respondents were male (72.4%), because it has been seen that risk of having CHD is higher in male and the CHD develops 7-10 years later in women than in men[13, 14]. This might be because the study was hospital-based and gender disparity in seeking for health service. Majority of the respondents were from rural region (53.1%) and from Brahmin/Chhetri ethnic group (51.6%) and 85.0% of the respondents belonged to Hindu region.

Regarding disease related characteristics with HRQL, myocardial infarction (67.3%) was the most important type of CHD. This finding go along with the study conducted in Turkey, which shows myocardial infarction as the most common clinical diagnosis among the CHD[15]. However, in contrast to this finding, unstable angina is the most common diagnosis, found among CHD patient at Spain[16]. Regarding

the mode of treatment, about half of the respondents were getting continuous medical treatment which may be due to fear of complications, unaffordable cost of surgery and lack of advanced technology needed for cardiac surgery in every tertiary hospital in Nepal.

The study indicated that HRQL score was highest on emotional domain with mean ± SD as 3.87± 1.01 . This might be due to majority of respondents were male and they were emotionally strong. HRQL domains were highly correlated between each domain. Similarly, a study conducted in Australia, by using MacNew HRQL tool reported that all three domains were highly correlated [17]. The findings of this study need to be evaluated based on the inherent limitation.

Conclusions

It is concluded that patients with CHD who are in regular follow up treatment tend to have below average HRQL level and need to be addressed for physical domain of the respondents Hence, the considerable proportion of patients with CHD is found to be literate therefore a Self Instructional Module (SIM) on " living well with CHD" was developed for enhancing their HRQL.

Authors Contribution

RS conceived this research work. SS is RS's supervisor and contributed to all aspects of this study from making proposal to finalization of the manuscript.

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