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## ORIGINAL ARTICLE

## Quality of life of patient with hypertension in Kathmandu

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## ABSTRACT

**Objective:** The study aims to describe Quality of Life of Patients with Hypertension and its predictors.**Methods:** The study was descriptive cross sectional involving 237 patients with hypertension attending outpatient department of Manmohan Cardiothoracic Vascular and Transplant Centre. Data was collected by interview technique using SF-36 questionnaire. The data was analyzed using SPSS version 16 and p values < 0.05 were considered significant. Independent t-test, ANOVA and multiple linear regression was used for statistical analysis. The quality of life was determined by Physical Component Summary (PCS) and Mental Component Summary (MCS).**Result:** In multivariate analysis, increasing age (CI: -4.47 to -1.48, p < 0.001), marital status (CI: -6.18 to -2.53, p < 0.001) and educational status (CI: 1.11–2.04, p < 0.001) were strongly associated with PCS score. Whereas, marital status (CI: -15.173 to -11.782, p < 0.001) and educational status (CI: 0.27–1.07, p = 0.001) were predictor of MCS score.**Conclusion:** This study identified increasing age, non formal education, being single to be associated with lower quality of life. Screening for most vulnerable group of the hypertensive patient might be done and evaluated which in turns helps to take necessary intervention for hypertension.© 2016 Chinese Nursing Association. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## 1. Introduction

Globally in the year 2012, of all deaths, 68% deaths were from Non-Communicable Diseases (NCDs) and majority of premature deaths (82%) due to NCD occurred in low and middle income countries. And of all NCD related deaths 46% were from cardiovascular diseases [1]. Cardiovascular disease is leading in terms of lost productive years and disability adjusted life years [2]. Among cardiovascular problems, hypertension displayed a major disease [3]. Joint National Commission-8 (2014) pointed out that hypertension is the number one reason listed for office visits and is the leading cause of death worldwide [4]. Global health report showed the prevalence of hypertension as 22% in the year 2014 [1]. American Society of Hypertension and International Society of Hypertension 2013 reported that about 1/3 rd of adults have hypertension

in developed and developing countries [5]. Kearney 2005 stated that of 972 million hypertensive adults, 639 million were estimated to be in economically developing countries [6].

In Nepal and other countries of Asia there is rapid increase in the prevalence of hypertension which accounts 15–35% in urban adult and it is 2–3 times lower in rural population [7]. The prevalence of hypertension varies in Nepal ranging from 18.8% to 41.8% [8–11]. In the study conducted by Nepal Health Research Council, the hospital based prevalence of hypertension was found to be 47% among all heart diseases [12].

Quality of life (QoL) is the subjectively determined personal satisfaction with daily life, as influenced by the individual's evaluation of his/her physical, psychological, social, and spiritual well-being [13]. World Health Organization defines QoL as “an individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns” [14].

In different studies conducted to assess the relation between QoL and hypertension, most of the studies reported lower scores in most dimensions as physical capacity, social functioning, mental health, psychological functioning, vitality as compared to general

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population [15,16]. Increasing age [17–19], widowed/separated/single [17,20,21], female sex [19,22], patient with greater symptom [23] had greater impact on QoL with lower scores on physical and mental domain. Wang and colleagues stated that hypertension represent a vulnerable population and impairs QoL in both physical and mental domains [24]. Carvalho and others pointed out that most of the time hypertension is clinically silent disease but still it impairs QoL [22].

## 2. Methods

### 2.1. Study design

A descriptive, cross-sectional study design was used to assess QoL in hypertensive patients.

### 2.2. Sample

Patient attending Out Patient Department (OPD) of Manmohan Cardiothoracic Vascular and Transplant diagnosed with hypertension by the physician and taking anti-hypertensive medicine; age above 18 years and below 80 years were included in the study. Patient who had notable difficulties in understanding Nepali language, pregnant, terminally ill, or having dementia and severe functional impairment were excluded from the study.

Sample size calculated was 237 with power of 80%, confidence interval of 95% and allowable error of 5%. Systematic random sampling was done to collect the data. Looking towards the data of Manmohan Cardiothoracic Vascular and Heart Transplant centre it was found that there used to approximately 2500–3000 cases in outpatient department. As per the source about 50% patients are with hypertension which accounts about 1250 cases. For systematic sampling researcher assumed 1000 hypertensive cases to get enough samples during the study period and kth interval was calculated. Thus, researcher took every 4th case as sample from the OPD name list. For the first sample, simple random sampling was done by lottery method.

### 2.3. Data collection

Structured interview technique was used for data collection. The first section consisted of socio-demographic and clinical data whereas second section consisted of questions related to assessment of QoL. SF-36 was used to assess QoL. The scoring of the data with this software was inbuilt. The higher the score, the better is the quality of life. The SF-36 includes 36 questions in eight domains which included physical functioning, physical role limitation, emotional role limitation, social functioning, bodily pain, vitality, mental health and general health [25]. Again the eight domains provide two summary measure of health related quality of life; Physical Component Summary (PCS) and Mental Component Summary (MCS) [26].

For the calculation of the PCS and MCS software provided from Optum Insight named as Quality Metric Health Outcome Scoring Software version 4.5 was used [27].

### 2.4. Data analysis procedure

Collected data was entered in Quality Metric Software Scoring system version 4.5 for calculation of PCS and MCS. Data entry, cleaning, editing and analysis was done in SPSS version 16.

Demographic and clinical data were analyzed using descriptive statistics. Independent t-test, ANOVA and multiple linear regression was used to identify association and predictor of QoL.

Independent t-test was used to identify the association between sex, marital status, educational status, symptom count and number of medicine used and PCS and MCS score whereas ANOVA was used to explore the association between age and duration of illness and PCS and MCS score. Multiple linear regression was used to identify the predictor of QoL. Researcher assumed p-value at <0.05 for statistical significance at 95% confidence interval.

## 3. Results

### 3.1. Sample characteristics

The socio-demographic characteristics were described in terms of age, sex, marital status, educational status, whereas duration of hypertension symptoms of hypertension, symptom count, number of medicine used, side effects of medicine were included in the clinical characteristics.

Of all participants, mean age was 55.02 ( $\pm$ 13.375) years with more than half being males (54.9%). Majority (60.3%) reported living with partner and 55.3% had formal education. For clinical characteristics, median for duration of hypertension was 2 years. Eighty seven percent had experienced symptoms of hypertension. More than three quarters (86.9%) were managed with single drug and very few (11.0%) experienced side-effects of medicine.

### 3.2. QoL

The mean PCS score was 48.22 ranging from 26.33 to 62.55 (CI: 47.05–49.375) and MCS score was 38.74 ranging from 17.98 to 62.70 (CI: 37.54–39.94).

### 3.3. Association of QoL with socio-demographic and clinical characteristics

Table 1 summarizes association between PCS and socio-demographic characteristics. Significant association was observed with age (CI: 52.74–56.50, 48.43–51.25, 40.66–44.68,  $p = 0.001$ )

**Table 1**  
Association of socio-demographic variables with PCS mean score.

Variables	Number (n = 237)	Mean score	Standard error	Test statistic value	p-value	95% CI
<b>Age (in years)</b>						
20–39	40	54.63	0.93	35.224 <sup>a</sup>	0.000 <sup>c</sup>	52.74–56.50
40–59	117	49.84	0.71			48.43–51.25
60–79	80	42.67	1.00			40.66–44.68
<b>Sex</b>						
Male	130	49.85	0.77	3.13 <sup>b</sup>	0.002 <sup>c</sup>	1.33–5.87
Female	107	46.2	0.86			
<b>Marital Status</b>						
With partner	143	51.40	0.59	7.46 <sup>b</sup>	0.000 <sup>c</sup>	5.76–10.26
Without partner	94	43.99	0.97			
<b>Education</b>						
Non formal	106	42.4	0.83	–10.640 <sup>b</sup>	0.000 <sup>c</sup>	–12.47–8.57
Formal	131	52.93	0.53			

<sup>a</sup> f-value (ANOVA).

<sup>b</sup> t-value (t-test).

<sup>c</sup> Significant at <0.05, CI = confidence interval.

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