HEALTH RELATED QUALITY OF LIFE OF HYPERTENSIVE PATIENTS ATTENDING A TERTIARY LEVEL HOSPITAL IN KATHMANDU

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ABSTRACT

Background: Hypertension among cardiovascular disease is one of the major components of non-communicable disease emerging as a global public health problem leading the risk for disability and death globally impairing health related quality of life (HRQoL). The objective of study was to find out the health related quality of life of hypertensive clients attending a tertiary level hospital.

Methods: A cross-sectional study was conducted at Manmohan Cardiothoracic Vascular and Transplant Center among 153 hypertensive clients attending outpatient department. Simple random sampling technique was used to collect data. Face to face interview was done for data collection, using structured questionnaire that included socio-demographic variables, health related variables, lifestyle related variables and RAND Short Form (SF)-36 questionnaire. Data analysis was done by using descriptive statistics and inferential statistics.

Results: More than half of respondents (61.4%) had good level of health related quality of life in physical component score while 86.3% had good level of health related quality of life in mental component score. The level of HRQoL was significantly associated with health related variables such as comorbidities, diabetes, cardiovascular diseases and lifestyle related variables such as sleeping pattern, type of exercise in physical component and sleeping pattern in the mental component.

Conclusion: The level of HRQoL of hypertensive clients is found to be good. Hypertensive clients could improve HRQoL through prevention and treatment of diabetes and cardiovascular diseases.

Keywords: *Health related quality of life, Hypertension, RAND SF-3*

INTRODUCTION

Hypertension is defined as raised blood pressure, in which systolic BP is ≥140 mm Hg and/or a diastolic BP ≥ 90 mm Hg[1]. High prevalence & burden of hypertension is prevalent all over the world, and approximately 1.13 billion people globally is estimated to be affected with hypertension[2].

Hypertension is a serious medical condition which could impair quality of life of patient with hypertension[3]. Hypertension increases the risk of premature death which reduces work productivity[4]. QoL is the subjective evaluation of one's life circumstances, including cultural and personal values, goals, and concerns[5]. Quality of life of patient gets impaired in sense of multidimensional i.e. the physical, mental, emotional and social domain[6, 7].

Although medical therapy and treatment guideline were available, hypertension was found to be uncontrolled[8] which may be associated with a high incidence of adverse effects of drug therapy of hypertension & worsened quality of life[9]. In hypertensive patient, the overall HRQoL was found to be significantly better with controlled blood pressure[10]. Study concluded that patients with hypertension under drug therapy often have multiple symptoms that caused distress[11]. In diagnosed hypertensive patient, health deterioration was observed which was thought due to the labeling effect and/or to the treatment of the hypertension[12]. The intake of fruits and vegetables may improve the perception of HRQoL of hypertensive patient[13].

Hypertensive patient having controlled blood pressure had 4.2 (at 95% CI: 1.88-9.33) times higher chance of having good QoL than those who didn't control their blood pressure. Participants who had no health complaint like, paralysis of the limb, visual impairment, swelling/ edema and other had higher (OR=4.2) chance of having good QoL[14]. The highest prevalence (27%) of hypertension was found in African Region while lowest (18%) in Americas[2]. In 2016, among 13.7% patient, 63.62% male and 36.38% female were affected by hypertension[15]. Worldwide, approximately 17 million deaths yearly by cardiovascular diseases in which 9.4 million deaths was due to hypertension complication i.e. 45% of deaths due to heart diseases & 51% death due to stroke which could impair the QoL[16]. The meta-analysis identified lower scores in hypertensive patients for physical as well as mental domains[17]. Study suggests that low HRQoL was found to be affected with hypertension[18].

A study conducted in Dharan showed that the HRQoL was found to be Mean±SD (59±6) concluding HRQoL low in hypertension than general population[19]. Hypertension impaired the QoL affecting role limitations due to physical problems while least affected health dimension was mental & comorbidity was found to be the contributing factor for deteriorating HRQoL[20]. Education and seminars are needed to effectively manage sexual dysfunction and enhance patients' HRQoL[21]. Lack of education & lifestyle modification influenced directly the QoL of hypertensive patient[22].

Among Hispanic population, hypertension was found to be associated with lower HRQoL in which physical component summary (PCS) scores were 46.62 and mental component summary (MCS) score were 50.35[23]. Similarly another study done in Kathmandu found that poorer MCS score (38.74) compared to PCS scores (48.22)[24]. Study highlights problems with pain (38%), sadness (38%), routine work (26%), mobility (17%) and self-care (11%) among hypertensive patients that impaired the HRQoL[25].

Hypertensive individuals with co-morbidities including chronic kidney disease, cardiovascular disease, and diabetes mellitus tend to have lower HRQoL than those with hypertension alone[26]. For the patient's mental and emotional wellbeing, proper treatment and awareness about hypertension was observed to be necessary[27]. In India, individuals with hypertension had reduced QoL in both physical and mental domains, with a greater impact on the physical component than the mental component[28]. Short Form (SF)-36 items comprised of 36 questions that measures physical health subscales and mental health subscales to assess Health Related Quality of Life (HRQoL)[29].

Various studies conducted in different countries have shown that the hypertensive clients HRQoL was poor and different factors affect HRQoL. There is still limited research study on HRQoL of hypertension in context of Nepal. Study would help health personnel to evaluate the factors affecting HRQoL and update knowledge on the HRQoL of hypertensive patient.

MATERIALS AND METHODS

Study design

A cross-sectional research design based on quantitative approach was used to assess the health-related quality of life of hypertensive clients attending at outpatient department (OPD) of Manmohan Cardiothoracic Vascular and Transplant Center (MCVTC) in Kathmandu. Data was collected within 4 weeks in between the time frame of September 8th –October 11th, 2019.

Sample identification

Simple random sampling technique through lottery method was used to reach the sample. Study sample of 153 was determined by using Cochran formula with standard deviation of 6, margin of error 1, at 5% level of significance[30]. Firstly, study site (MCVTC) was selected. Among four OPDs in the hospital, patients from only two OPDs were screened.

To get sampling frame, researcher checked the OPD card of patient at registration. After checking the OPD card, the hypertensive patient taking medication since 1 year was ensured. To confirm the years of diagnosis, types of antihypertensive drugs used and co-morbidity of the patient OPD card was checked. All patient meeting inclusive criteria was given number serially at the time of registration. Researcher got sampling frame for that day. This process continued up to 4 weeks.

MCVTC's OPD had 15-20 eligible hypertensive clients visiting daily for follow-up, and 6-7 of them were interviewed each day.

Instrumentation and data collection

Face to face interview was conducted using the structured questionnaire. The standard tool-RAND SF-36 including Physical component score (PCS) and Mental component score (MCS), comprising of 36 questionnaires were used. Physical component score included the mean score of four domains of RAND SF-36 questionnaire i.e. physical functioning (10 items), role-physical (4 items), bodily pain (2 items), and general health (5 items).Mental component score included the mean score of four domains of RAND SF-36 questionnaire i.e. energy/fatigue (4 items), social functioning (2 items), role-emotional (3 items), and emotional wellbeing (5 items). The RAND SF-36 questionnaire translated to Nepali Language which was validated in Nepal was used with the permission of Nepali author[29].

The content validity of the tool was established by consulting the cardiologist, subject experts, and research advisors in order to verify both comprehensibility and simplicity of content and RAND SF-36 a validated tool was used. Validity of the tool was maintained by translating the English version questionnaire into Nepali and back translated in English version. Reliability of the tools was measured by pretesting on 10% of the study sample size attending OPD in Shahid Gangalal National Heart Center. The correction and modification of the tool was made according to feedback during pretesting. Cronbach's alpha was calculated and reliability of at least 70% was obtained for each domain of the tools.

Statistical Analysis

Prior to data entry, the collected data was reviewed and checked for its completeness, consistency and accuracy. Internal consistency was maintained by double checking the data. Data analysis was done by using software Statistical Package for Social Sciences (SPSS) version 16 to observe association by using Chi square test. STATA version, 9 was used for Fisher exact test when the expected cell frequency was less than 5 in the contingency table. Descriptive and inferential statistics were used to present the results of the study. The association between two categorical variables was examined by using Chi-square test/ Fisher's exact test wherever applicable. Results were considered significant if p-value < 0.05 at 5% level of significance.

Operational definition

Hypertensive clients of age 18 years and above with diagnosis of hypertension for 1-20 years with or without comorbidities such as diabetes, kidney disease, cardiovascular disease, cerebrovascular disease, etc. attending OPD of a Tertiary level hospital were included in the study. The score of the eight domain of HRQoL RAND SF-36 were summed and expressed as a score on 0-100 scale. The mean for physical and mental component were classified into level of good HRQoL (mean

score $\geq$ 50) and poor HRQoL (mean score <50)[36]. Sleeping pattern of hypertensive clients was categorized into good (sleeping $\geq$6 hours at night) and bad (sleeping <6 hours at night) for this study.

Ethics approval and consent

After getting approval from the Institutional Review Committee (IRC) of Manmohan Memorial Institute of Health Sciences (MMIHS) and MCVTC, data collection was carried out. Verbal and written consent was taken prior to study. Privacy was maintained by conducting interview in a corner of the OPD. Information obtained during interview was only used for the study purpose. Precautions was maintained so that the study would not harm any individual and the institution. Voluntary participation of the participant was respected where participant had right to reject or discontinue the study at any point in time they like. Queries related to disease and treatment was provided to the participant at the end of interview.

RESULTS

Socio-demographic characteristics

Table 1 shows the average age of the patients to be 57.5 with the deviation of 12.95 years. More than half (53.6%) of the participants were male, majority (70.6%) were from urban area, most (81%) believed in Hinduism and about 41.8% participant from Aadiwasi/ Janajati ethnicity. Most of the respondents (86.3%) were married and more than half (69.3%) were from joint family.

Table 1: Socio-demographic characteristics (n=153)

Characteristics	Number	Percentage
Age Group (Completed Years)		
$\leq$ 39	11	7.2
40-59	70	45.8
$\geq$ 60	72	47.1
Mean ±SD: 57.5±12.95 ,Max: 86,Min: 24		
Gender		
Male	82	53.6
Female	71	46.4
Religion		
Hinduism	124	81
Buddhism	22	14.4
Christianity	6	3.9
Islam	1	7
Ethnicity		
Aadiwasi/Janajati	64	41.8
Brahmin	42	27.5

Chhetri	39	25.5
Dalit	5	3.3
Madhesi	3	2
Marital Status		
Married	132	86.3
Widow/Widower	17	11.1
Unmarried	4	2.6

Of the total participants nearly one third (30.7%) could not read and write. Among those who could read and write, one fourth (25.5%) were graduated followed by secondary level (24.5%), informal education (17.9%), primary level (17%) and higher secondary level (15.1%) education. Almost one fourth (24.9%) of the participants were unemployed at the time of study while 34.5% had agriculture as occupation. Similarly, 29.6% were engaged in service, 13.9% in business and 4.6% were working as a labor. Homemaker accounts to 17.6% of total study sample. More than one fourth (25.5%) of the participants had family income enough for 12 months and surplus, nearly half (47.7%) of the participants had family income enough for more than 6 months while remaining 26.8% had income enough for less than 6 months.
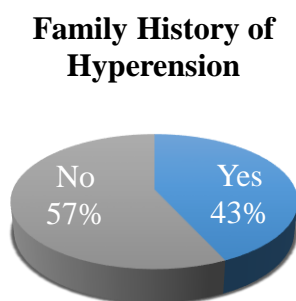
Figure 1 displays that, 43.1% of participant's family members had hypertension.

Figure 1: Family History of Hypertension

Health related variables

Study reflects that nearly one third of the respondents (33.3%) had uncontrolled blood pressure although they were under regular antihypertension medicine. Majority of the patient who diagnosed hypertension ≤10 years were 79.1% but most of the respondents (81.7%) were under antihypertensive medicine. Most of the respondents (81%) were under regular follow up.

Table 2 illustrates that more than half (64.7%) of respondents were suffered from co-morbidity conditions in which 30.3% & 37.4% of respondents were suffered from diabetes and cardiovascular diseases respectively. More than half of the respondents 55.6% were using calcium channel blocker to control blood pressure whereas 17.6% experienced adverse side effect of drug therapy.

Table 2: Health related variable *(n=153)*

Characteristics	Number	Percentage
Co-morbidity	99	64.7
Types of Comorbidity* (n=99)		
Diabetes	30	30.3

Cardiovascular diseases	37	37.4
Renal disease	11	11.1
Cerebrovascular disease	5	5.1
Hyper cholesterol	22	22.2
Others	47	47.5
Number of Antihypertensive Medicine		
One	99	64.7
Two and more	54	35.3
Types of Drug Used*		
Diuretics	23	15.0
Beta blocker	31	20.3
Calcium channel blocker	85	55.6
Angiotensin converting enzyme inhibitor	21	13.7
Angiotensin receptor blocker	57	37.3
Presence of Adverse Side Effect of Drug	27	17.6
Side Effect of Drugs*		
Cough and throat irritation	3	11.1
Swelling of lower extremities	17	63.0
Electrolyte imbalance	4	14.8
Hypotension	9	33.3

***Multiple response; Other comorbidities: Gastritis, arthritis, COPD, Hypothyroidism, cataract**

Lifestyle Related Variables

Among the total participants, most of them (81%) were non-vegetarian. Most of the participants (83.7%) consumed < 5 gram salt/day. Only 12.4% respondents disclosed as a present smoker of whom more than half (63.2%) were taking > 10 sticks cigarettes /day. More than half (54.9%) patients had never smoked. About 19% of them were still taking alcohol. More than half of the patients had never smoked (54.9%) and were non-alcoholic (58.2%). Sleeping pattern was reported to be good by more than two third (68.6%) of the clients.

Of 153 participants, more than half (57.5%) reported that they do exercise. Among the type of exercise, most of them reported walking (63.6%) followed by light exercise at home (18.2%), Yoga (12.5%) and running (5.7%) respectively. Only 29.5% of the participants spent > 30 minutes in exercise while equal proportion of participants spent < 30 minutes (35.2%) and 30 minutes (35.2%) in exercise. Out of those who performed exercise (n=88), nearly 3/4th reported to perform exercise daily, followed by 15.9% reporting 3-4 days/ week, 9.1% reporting 5-5 days/ week and 2.3% reporting 1-2 days/ week respectively.

Table 3 displays the mean score and standard deviation of 8 domains of HRQoL of hypertensive client. The highest (90.60) mean score of QoL was in social functioning and least in (47.38) in role physical. The average QoL in physical component score (PCS) was 61.31 with standard deviation 22.68 and in mental component score (MCS) was 70.25 with standard deviation 18.57.

Table 3: Domains of Health Related Quality of Life *(n=153)*

Domains	Items	Mean ±SD	Alpha
Physical Component			
Physical functioning	10	68.30±24.50	0.91
Bodily pain	2	73.69 ± 27.13	0.97
General health	5	55.88±22.08	0.72
Role functioning physical	4	47.38 ± 47.99	0.77
Mental Component			
Role functioning emotional	3	48.58±40.28	0.76
Social functioning	2	**90.60±18.60**	0.75
Energy/fatigue	4	63.16±20.61	0.91
Emotional wellbeing	5	78.66±18.12	0.75
Components			
Physical component score		61.31±22.68	0.91
Mental component score		70.25±18.57	0.83

Level of HRQoL is explained in **table 4** which shows that more than half (61.4%) had good level of HRQoL in PCS and most of them (86.3%) had good level of HRQoL in MCS.

Table 4: Level of Health Related Quality of Life *(n=153)*

Level of HRQoL	Criteria	PCS		MCS	
		Number	Percent	Number	Percent
Good QoL	Mean score ≥50	94	61.4	132	86.3
Poor QoL	Mean score <50	59	38.6	21	13.7

Association between Level of HRQoL and Socio-demographic characteristics is illustrated in **table 5**. Statistically significant association was observed between age (*p*-value=0.031), educational status (*p*-value=0.000), educational level (*p*=0.023), occupation (*p*=0.002) and income status (*p*-value-0.022) with level of HRQoL of PCS. Similarly, significant association between residence (*p*-value=0.049), educational status (*p*=0.021) and occupation (*p*=0.030) and level of HRQoL of MCS was observed from the study.

Table 5: Association between Level of HRQoL of PCS and Socio-demographic characteristics

Socio-demographic Characteristics	Level of HRQoL of PCS			Level of HRQoL of MCS		
	χ^2	*d.f.*	*p*-value	χ^2	*d.f.*	*p*-value
Age						
≤39						
40-59	6.852	2	**0.031**[a*]	2.321	2	0.440[a]
≥60						
Gender						
Female						
Male	2.369	1	0.124	0.349	1	0.554
Residence						
Rural	1.767	1	0.184	3.887	1	**0.049**[*]

	χ2	d.f.	p-value	χ2	d.f.	p-value
Urban						
Ethnicity						
Brahmin						
Chhetri	0.817	3	0.835[a]	6.954	3	0.062[a]
Janajati						
Others (Dalit and Madhesi)						
Religion						
Hinduism						
Buddhism	0.608	2	0.748[a]	0.442	2	0.710[a]
Others (Christianity & Islam)						
Educational Status						
Cannot read and write	15.333	1	**0.000***	5.367	1	**0.021***
Can read and write						
Education Level						
Below higher secondary	5.154	1	**0.023***	1.937	1	0.196[a]
Higher Secondary and above						
Family Type						
Nuclear	1.265	1	0.261	0.546	1	0.460
Joint						
Occupation						
Agriculture, Homemaker, Labor	9.383	1	**0.002***	4.668	1	**0.030[a]**
Business ,Service						
Income Status						
Sufficient for < 6 month						
Sufficient for >6 month	7.661	2	**0.022***	1.658	2	0.436
Sufficient for 12 month						
Marital Status						
Married						
Unmarried	1.910	2	0.502[a]	0.858	2	0.840[a]
Widow/widower						

ᵃ=Fisher exact test, *=Level of significance p-value <0.05

Table 6 shows the significant association between comorbidities (p=0.000), diabetes (p=0.047), cardiovascular diseases (p=0.014) and level of health related quality of life of physical component score. Statistical significant association between mental components of HRQoL and health related variables were not observed.

Table 6: Association between Level of HRQoL and health related variables

Health Related Variables	Level of HRQoL of PCS			Level of HRQoL of MCS		
	χ2	d.f.	p- value	χ2	d.f.	p- value
Duration of Diagnosis of Hypertension						
≤10years	0.460	1	0.498	0.051	1	0.541[a]
>10 years						
Duration of Drug Used for Hypertension						

	χ2	d.f.	p-value	χ2	d.f.	p-value
≤10years						
>10 years	0.267	1	0.605	0.262	1	0.767ᵃ
Adverse Side Effect of Drug						
Yes						
No				1.999	1	0.497
Comorbidities						
Yes						
No	19.865	1	**0.000***	2.813	1	0.139ᵃ
Diabetes						
Yes						
No	3.956	1	**0.047***			
Cardiovascular Disease						
Yes	6.095	1	**0.014***			
No						
Regular Follow up						
Yes						
No	0.251	1	0.616	0.000	1	0.596ᵃ
Blood Pressure Status						
Controlled						
Uncontrolled	0.014	1	0.907	0.248	1	0.618
Drug Used						
1 drug						
2 or more drug	0.004	1	0.951	0.041	1	0.840

*ᵃ=Fisher exact test, *=Level of significance p-value <0.05*

Table 7 portrays significant association between sleeping pattern (pvalue-0.007), type of exercise (p-value-0.023) and level of HRQoL of PCS while the association was observed between sleeping pattern (p-value=0.025) and level of HRQoL of MCS.

Table 7: Association between level of HRQoL and lifestyle characteristics

Lifestyle characteristics	Level of HRQoL of PCS			Level of HRQoL of MCS		
	χ2	d.f.	p-value	χ2	d.f.	p-value
Amount of Salt Consumed						
<5g/day						
≥5g/day	0.083	1	0.774	0.075	1	0.539ᵃ
Sleeping Pattern						
Poor						
Good	7.189	1	**0.007***	4.990	1	**0.025***
Smoking Status						
Past smoker						
Present smoker	4.121	2	0.127	4.308	2	0.129ᵃ
Never smoked						
Consumed Alcohol						
Past alcoholic	5.832	2	0.068	2.448	2	0.294

Present alcoholic						
Non alcoholic						
Exercise Performed						
Yes	0.128	1	0.720	0.192	1	0.661
No						
Type of Exercise						
Walking						
Running	9.749	3	**0.023**[a*]	5.151	3	0.176[a]
Yoga						
Light exercise in home						
Time Spend in Exercise						
Less than 30 min						
30 min	4.900	2	0.086	4.012	2	0.145[a]
More than 30 min						
Days Involved in Exercise						
Daily						
1-2days/week	0.891	3	0.084[a]	2.032	3	0.714[a]
3-4days/week						
5-6 days/week						

[a]=Fisher exact test, [*]=Level of significance p-value<0.05

DISCUSSION

The present study reveals that the mean and standard deviation of the physical component as 61.31±22.68 and the mental component as 70.25±18.57. Similar findings was observed in the study conducted in North Ethiopia where that mean score and standard deviation of physical component was 64.83 ± 18.79 and mental component was 64.86 ±19 displaying good HRQoL[14].

Respondents have more HRQoL in mental component than physical components in current study which coincides with the study of Naik et al.[28]. Likewise, study in Hispanic population showed compromised PCS than MCS scores as 46.62 and 50.35 respectively[23].

Among the eight domains of HRQoL, the study disclosed in the six domains, the HRQoL of respondents is good; especially social well-being has highest score with mean and standard deviation of 90.60± 18.60. Role physical domain comprises low HQRoL (mean and SD= 47.38 ± 47.99) and emotional role (48.58 ±40.28) of the study respondents. Similarly a study showed highest (mean and SD= 75 ± 22) in social functioning and lowest (mean and SD= 50±22) in role physical among the eight domains of HRQoL[19]. Another study showed highest in mean and SD in social functioning (80.9±29.2) and lowest in emotional role (16.9±10.9), physical role (17.2±11.1) among all the 8 domains of HRQoL[28]. Social aspects (Avg. score 83.14) appeared to be least affected in some studies[27].

Mean score and SD of bodily pain is highest as 73.69± 27.3 in the present study which coincides with the study showing bodily pain mean score (87.77) to be the highest score from all physical and mental component domains[14].

Significant association between level of HRQoL and age (p=0.031), educational status (p=0.000), educational level(p=0.023), occupation(p=0.002), income status(p=0.022) in the PCS and in residence(p=0.049), educational status(p=0.021), occupation(p=0.030) in the MCS can be observed in this study. Similarly as per cross sectional study conducted in China, association was observed among age (p=0.0066), education (p=0.0012) with PCS whereas association was found among residence (p=0.0027) with MCS[31]. Moreover, a study in Palestine concluded that age, employment, income and education were strongly associated with HRQoL[32]. A study conducted in Kathmandu showed that increasing age and educational status were strongly associated with PCS score whereas, educational status as predictor of MCS score.

Present study shows no significant association between marital status and HRQoL, which contrast with the study showing that those patients who got divorced had less chance (95% CI 0.08-0.55) of having good QoL compared to married[14].

As per present study, significant association is observed between education and HRQOL which coincides with the study showing illiterates found to have lower QoL than those who can read and write in PCS and in MCS[24]. Similar findings were obtained in the study which demonstrated that those who completed at least grade 7 to 12 and have a college diploma and above had higher QoL[14]. In present study, association between sex and MCS was not found to be significant which coincides with the study conducted by Bhandari et al.[24].

In present study, regarding health related variable, significant association is observed between comorbidities (p=0.000), diabetes (p=0.047), cardiovascular diseases (p=0.014) in the physical component. Similarly a study in China concluded that comorbidity was found to be the contributing factor for deteriorating HRQoL[20]. Likewise, since 2000, most of the studies found that hypertensive individuals with co-existent co-morbidities including chronic kidney disease, cardiovascular disease, and diabetes mellitus tend to have lower HRQoL[26]. A similar finding was observed in a study in South Korea[33].

No association can be seen between duration of hypertension and blood pressure status with HRQoL in this study however the study conducted by Jufar et al.[14] revealed that HRQoL was found to be influenced by duration of hypertension and blood pressure status. Those participants who had controlled their blood pressure had 4.2 times higher chance of having good QoL.

As per the current study, no association found between medicine count, duration of illness and number of medicine used which coincides with the study where test of association was not significant between PCS and medicine count, duration of illness, and number of medicine used[24]. Significant association between level of HRQoL and type of exercise (p=0.023) with PCS is seen

in this study which coincide with a study conducted in China showing association among physical activity (p=0.0004) with PCS[31].

Present study does not show association between alcohol uses with HRQoL. In contrast, a study conducted in China showed association among alcohol consumption (p=0.0003) with PCS whereas association was found among alcohol (p=0.0195) with MCS[31].

In this study, significant association is observed between level of HRQoL and sleeping pattern (p=0.007) in physical component and sleeping pattern (p=0.025) in the mental component. Similarly a survey in Chongqing, China showed that clients with good quality of sleep have better HRQOL in middle-aged people with hypertension[34]. Association is not seen in smoking with HRQoL, which coincides with the study conducted in Greece, showing PCS not seen associated with smoking[35].

CONCLUSION

The level of HRQoL of hypertensive clients is found to be good. The level of HRQoL is found to be affected by age, educational status, educational level, occupation, income status in the PCS. Likewise, residence, educational status, occupation shows association with HRQoL in the MCS. The level of HRQoL is significantly associated with health related variables such as comorbidities, diabetes, cardiovascular diseases in the physical component. Moreover, the level of HRQoL is significantly associated with lifestyle related variables such as sleeping pattern, type of exercise in physical component and sleeping pattern in the mental component.

An educational intervention with appropriate awareness programme can be carried out to further uplift the HRQoL of hypertensive clients. Screening of hypertension in patient with diabetes and cardiovascular diseases should be done and accordingly prevention and treatment of diabetes and cardiovascular diseases should be done to improve HRQoL of hypertensive clients.

Conflict of interest

No possible conflicts of interest.

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