Self-Care Practices among Hypertensive Patients of all Aged Group in Tsum- Nubri Rural Municipality of Gorkha District

Sonam Dickey Lama,1 Swechhya Baskota,1 Lisasha Poudel,2 Bibek Rajbhandari,3 Prajita Mali,1 Tashi Lama1

1Department of Public Health, Om Health Campus, Kathmandu, Nepal
2Nepal Institute of Development Studies, Kathmandu, Nepal
3Department of Emergency Medicine and General Practice, Nepal Police Hospital Kathmandu, Nepal

ABSTRACT

Introduction: Hypertension is now becoming an increasingly important cause of morbidity and mortality in developing countries which leads to a major public health problem. It is necessary for an assessment of an individual’s hypertension self-care behavior and its associated factors in order to provide clinicians about important information regarding how to better control hypertension. Thus, the objective of this study was to assess the self-care practices among hypertensive patients of all age group and to understand the factors associate with it.

Methods: A community-based cross-sectional study was conducted in Tsum-Nubri Rural Municipality of Gorkha district among 68 hypertensive patients. Self-care activities were measured using semi-structured questionnaire with the H-hypertension self-care activity level effects (H-SCALE) and the data was entered and analyzed in SPSS version 16. Uni-variate analysis was done and was presented through frequency and percentage whereas, bivariate analysis was by using chi-square test where P value <0.05 was considered to be association between dependent and independent variables

Results: Adherence to the recommended levels of medication was reported to 25%; only 8.8% followed the physical activity level guidelines. None of the participants showed adherence to weight management and low-salt diet recommendation. 51.5% of them were adherence to non-smoking and alcohol abstinence. Marital status (0.005), education level (0.003) and monthly household income (0.003) were significantly associated with adherence to non-smoking. Also, body mass index (0.001) was significantly associated with the physical activity.

Conclusions: Based on study findings, life style modification and regular monitoring must be considered in order to increase good self-care practice

Keywords: self-care practice; hypertension; rural; Nepal.

INTRODUCTION

Hypertension has become a global public health challenge because of its high prevalence and the associated risk of stroke and cardiovascular diseases in adults.1 Out of 1 billion hypertensive patients in the world, almost two-thirds are seen in developing countries.2

Non-pharmaceutical treatment assumes a significant role in controlling hypertension.

Patients’ knowledge, their insight into cardiovascular risk factors, their view of the advantages and potential risks of treatment, and their dynamic cooperation in treatment choices have been found to influence their compliance with treatment recommendation. Along these lines it is significant for the hypertensive patients to comprehend the significance of connection between the associated behaviours related risk factors and self-care practices to control and forestall hypertension.3

There are very few researches on the factors associated with self-care practice among hypertensive patients of all age group in Nepal. The aim of the study was to assess the self-care
practices among hypertensive patients of all age group and to understand the factors associate with it.

**METHODS**

A community based cross-sectional study was conducted among 68 hypertensive patients residing in Tsum Rural Municipality, Gorkha, Nepal. Data were collected from June 2019 to July 2019. Ethical approval was taken from Nepal Health Research Council (Reg. no. 400/2019). Approval for data collection was taken from respective wards.

The study population were hypertensive patients residing in ward no. 1 and 4 of Tsum-Nubri Rural Municipality, Gorkha. Names of 68 hypertensive patients were obtained from the respective health posts. All of them were interviewed face to face by the researcher.

Our inclusion criteria were hypertensive patients of all aged group with hypertension who were willing to participate and could speak and hear properly without any diagnosed mental disorder.

The tool used for data collection in the study was semi-structured questionnaire along with Hypertension Self-Care Activity Level Effects (H-SCALE). Semi-structured questionnaire consisted of socio-demographic profile and health related information of the respondents. H-SCALE was used to assess self-care behavior among hypertensive patients. H-SCALE is a 31-item scale prepared by Findlow. The H-scale examines the level of self-care by asking about the number of days per week on which an individual performs a self-care activity. It contains 31 items for the assessment of hypertension self-care activities with the following breakdown: medication adherence (3 items), physical activity (2 items), low-salt diet (11 items), smoking (2 items), alcohol (2 items) and weight management (11 items). Studies have shown excellent internal consistency of H-SCALE where Cronbach alphas were as follows: medication adherence (α=0.91), eating a low salt diet (α=0.72), physical activity (α=0.96), smoking (α=0.91) and weight management (α=0.85). Formal permission was taken to use the scale for our study.

H-SCALE was translated in Nepali language. For its reliability, pretesting was done in a similar community and its Cronbach’s alpha was calculated i.e. 0.78.

After data collection, all the data were entered and analyzed using SPSS version 16.0. Based on the distribution and variance, appropriate statistical tests were used for analysis. The data analysis was done by univariate and bivariate. Univariate analysis was done and presented using frequency and percentage while bivariate study was done by using the chi-square test in which p≤ 0.05 was considered for association between dependent and independent variable.

**RESULTS**

Out of 68 patients, there were 48 patients taking medication and among 48 patients only 12 (25%) patients were adherent to their drug regimen. Among 68, none of the participants showed adherence to weight management and to eating low salt diet. Also only 8.8% of participants with hypertension was involved in physical activity, 51.5% were adherent to non-smoking and 51.5% showed adherence to alcohol abstinence.

In table 2, there was no any significant association seen in socio-demographic characteristics with medication adherence, physical activities and alcohol abstinence. However, non-smoking was associated with marital status (0.005), educational status (0.003) and monthly income of household (0.003). There were more self-care behaviors of all types in individual between the
age group of 45–69 years compared to other ages.

Table 3 shows that half of the respondents had family history of hypertension. Only 23.5% of the respondents did regular blood pressure check-up. Most of the respondents had suffered from Asthma i.e. 29.7% as history of other diseases. Majority of the respondents (73.7%) had normal Body Mass Index (BMI) and only 16.2% were overweight and 10.3% were obese. Physical activity was significantly associated with Body mass index (0.001), where participants with normal BMI were more likely to adhere physical activity.

Table 2. Association between socio-demographic characteristics and self-care behaviors

| Characteristics (n=68) | Medication Adherence (n=48) | Physical activity (n=68) | Non-Smoking (n=68) | Alcohol abstinence (n=68) |
|------------------------|----------------------------|--------------------------|-------------------|--------------------------|
|                        | Adherent                  | Non-Adherent             | Adherent          | Non-Adherent             |
|                        | Adherent                  | Non-Adherent             | Adherent          | Non-Adherent             |
|                        | Adherent                  | Non-Adherent             | Adherent          | Non-Adherent             |
|                        | Adherent                  | Non-Adherent             | Adherent          | Non-Adherent             |
| Age groups              |                            |                          |                   |                          |
| 30-44                  | 16 (23.5)                 | 0 (0.0%)                 | 5 (100%)          | 3 (18.8%)                |
|                         |                            |                          | 13 (81.2%)        | 0.262                    |
| 45-69                  | 35 (51.5)                 | 6 (21.3%)                | 20 (76.9%)        | 1 (2.9%)                 |
|                         |                            |                          | 34 (97.1%)        | 0.098                    |
| 70 and above           | 17 (25.0)                 | 6 (35.3%)                | 11 (64.7%)        | 2 (11.8%)                |
|                         |                            |                          | 15 (88.2%)        | 0.051                    |
| Gender                 |                            |                          |                   |                          |
| Male                   | 28 (41.2)                 | 6 (30.0%)                | 14 (70.0%)        | 2 (7.1%)                 |
|                         |                            |                          | 26 (92.9%)        | 0.499                    |
| Female                 | 40 (58.8)                 | 6 (21.4%)                | 22 (78.6%)        | 4 (10.0%)                |
|                         |                            |                          | 36 (90.0%)        | 1.000                    |
| Marital status         |                            |                          |                   |                          |
| Married                | 42 (61.8)                 | 8 (29.6%)                | 19 (70.4%)        | 8 (9.5%)                 |
|                         |                            |                          | 38 (90.5%)        | 0.510                    |
| Single                 | 26 (38.2)                 | 4 (21.9%)                | 17 (81.0%)        | 7 (7.7%)                 |
|                         |                            |                          | 24 (92.3%)        | 1.000                    |
| Education status       |                            |                          |                   |                          |
| Illiterate             | 41 (60.3)                 | 7 (19.4%)                | 29 (80.6%)        | 3 (7.3%)                 |
|                         |                            |                          | 38 (92.7%)        | 0.124                    |
| Literate               | 27 (39.7)                 | 5 (41.7%)                | 7 (58.3%)         | 3 (11.1%)                |
|                         |                            |                          | 24 (88.9%)        | 0.675                    |
| Monthly HH Income (NRs) |                            |                          |                   |                          |
| Less than NRs 10,000   | 22 (32.4)                 | 5 (25.0%)                | 15 (75.0%)        | 2 (9.1%)                 |
|                         |                            |                          | 20 (90.9%)        | 1.000                    |
| More than NRs 10,000   | 46 (67.6)                 | 7 (25.0%)                | 21 (75.0%)        | 4 (8.7%)                 |
|                         |                            |                          | 42 (91.3%)        | 0.003                    |
| Occupation             |                            |                          |                   |                          |
| Agriculture            | 24 (35.3)                 | 9 (33.3%)                | 18 (66.7%)        | 5 (11.4%)                |
|                         |                            |                          | 39 (88.6%)        | 0.185                    |
| Others                 | 44 (64.7)                 | 3 (14.3%)                | 18 (85.7%)        | 1 (4.2%)                 |
|                         |                            |                          | 23 (95.8%)        | 0.413                    |
|                         |                            |                          | 14 (58.3%)        | 1.000                    |
|                         |                            |                          | 24 (54.5%)        | 0.613                    |

(*P-value is <0.05 and C.I. is 95%, which means they have a significant association)
Table 3. Association between health-related information and self-care behaviors of respondents

| Characteristics | n=68 | Medication Adherence (n=48) | Physical activity (n=68) | Non-Smoking(n=68) | Alcohol abstinence (n=68) |
|-----------------|------|-----------------------------|-------------------------|------------------|--------------------------|
|                 |      | Non-adherent | Adherent | P-value | Non-adherent | Adherent | P-value | Non-adherent | Adherent | P-value |
| Family history of Hypertension |      |             |           |         |             |           |         |             |           |         |         |
| Yes             | 34 (50.0) | 19 (76.0%) | 6 (24.0%) | 0.868 | 5 (14.7%) | 29 (85.3%) | 0.197 | 17 (50.0%) | 17 (50.0%) | 0.808 | 17 (50.0%) | 17 (50.0%) | 0.808 |
| No              | 34 (50.0) | 17 (73.9%) | 6 (26.1%) | 0.868 | 1 (2.9%) | 33 (97.1%) | 0.197 | 18 (52.9%) | 16 (47.1%) | 0.808 | 18 (52.9%) | 16 (47.1%) | 0.808 |
| Duration since diagnosis (years) |      |             |           |         |             |           |         |             |           |         |         |
| Less than 5 years | 37 (54.4) | 14 (77.8%) | 4 (22.2%) | 1.000 | 3 (8.1%) | 34 (91.9%) | 0.197 | 16 (43.2%) | 21 (56.8%) | 0.138 | 21 (56.8%) | 17 (43.2%) | 0.341 |
| More than 5 years | 31 (45.6) | 22 (73.3%) | 8 (26.7%) | 0.197 | 3 (9.7%) | 28 (90.3%) | 0.197 | 19 (61.3%) | 12 (38.7%) | 0.138 | 14 (45.2%) | 17 (54.8%) | 0.341 |
| Regular BP check-up |      |             |           |         |             |           |         |             |           |         |         |
| Yes             | 16 (23.5) | 9 (69.2%) | 4 (30.8%) | 0.710 | 2 (12.5%) | 14 (87.5%) | 0.620 | 9 (56.2%) | 7 (43.8%) | 0.662 | 11 (68.8%) | 5 (31.2%) | 0.114 |
| No              | 52 (76.5) | 27 (77.1%) | 8 (22.9%) | 0.710 | 4 (7.7%) | 48 (92.3%) | 0.620 | 26 (50.0%) | 26 (50.0%) | 0.662 | 24 (46.2%) | 28 (53.8%) | 0.114 |
| Body Mass Index (BMI) |      |             |           |         |             |           |         |             |           |         |         |
| Normal          | 50 (73.5) | 28 (77.8%) | 8 (22.2%) | 0.418 | 1 (2.0%) | 49 (98.0%) | 0.001* | 26 (50.2%) | 24 (49.8%) | 0.379 | 25 (50.0%) | 25 (50.0%) | 1.000 |
| Overweight      | 11 (16.2) | 5 (83.3%) | 1 (16.7%) | 0.418 | 1 (9.1%) | 10 (90.0%) | 0.001* | 4 (36.4%) | 7 (63.6%) | 0.379 | 6 (54.5%) | 5 (45.5%) | 0.100 |
| Obese           | 7 (10.3) | 3 (50.0%) | 3 (50.0%) | 0.418 | 4 (57.1%) | 3 (42.9%) | 0.001* | 5 (71.4%) | 2 (28.6%) | 0.379 | 4 (57.1%) | 3 (42.9%) | 0.100 |

(*P-value is <0.05 and C.I. is 95%, which means they have a significant association)

**DISCUSSION**

The H-Scale survey instrument exhibited great face reliability and validity for the 6 self-care activity areas for hypertension. The aim of this study was to determine the prevalence of self-care behaviors among patients with hypertension residing in a rural area of Nepal. These behaviors were low in terms of medication adherence and physical activity (less than 50%) and no adherent in terms of weight management and healthful diet (0%) and were moderate regarding smoking and alcohol (more than 50%).

Our study area was Tsum-Nubri Rural municipality, Gorkha district. Tsum-Nubri Rural municipality is located in the upper northern region of Gorkha district of Gandaki Province 04, close to the Tibetan border. The rural municipality covers an area of 1,649 km² (CBSN) It has a total population of about 7,417 with male population 3,555 and female population of 3,862. (Census 2011) It has total of 7 wards. The seven wards are inhabited by poor and vulnerable communities and none have access to motor road, and proper health care facilities. The only modes for transportation is walking, mules and helicopters. Due to cold temperature many people drink alcohol and Tibetan butter tea to keep their body warm. Also fruits and vegetables are hardly grown due to cold temperature and heavy snowfalls. People in this area have very poor self-care regimens towards chronic illnesses particularly among the old population. Self-care activities for hypertension was affected by factors such as poor knowledge,
cultural beliefs and practices, socio-economic factors and physical geography of the area.

In light with study findings there was an absence of a healthful diet i.e., low-salt diet, including the avoidance of salt while both cooking and eating as well as in increased fruit and vegetable consumption in all of the participants. In a study on African-American participants, Warren-Findlow et al. found that 22% of patients had tried to low-salt diet.\(^7\) Hu conducted a study of high blood pressure among Chinese patients and showed that 81% of them did not avoid salt consumption.\(^8\) WHO proposes that each grown-up ought to expend under 5 grams (2000 mg) of sodium every day. However, daily average consumption of salt per person is between 9-12 grams in most of the countries. The food consumption with high salt and fat including insufficient consumption of fresh fruits and vegetables are compelling factors that lead to high blood pressure and hypertension.\(^9\) Due to extreme cold temperature no fruits and very less vegetables grew in ward 04 and 01 of Tsum-Nubri Rural municipality, people had insufficient consumption of fruits and vegetables. Also due to close border with Tibet, people trade and eat more of non-iodized salt and drink salt-tea frequently to adjust the cold temperature.

The research indicated that few participants adhered to their medication protocols. Although 70.5% of the participants had been prescribed medication, only 25% of them were adherent, which is lower than reported in the studies of Warren-Findlow et al. i.e., 59.8%\(^7\) and Hu et al. i.e.,51.9%\(^8\). It seems that taking medications and adhering to them is of less importance to patients with high blood pressure.

Only 8.8% of the respondents took part in physical activity at least 30 minutes almost every day. This rate is much lower than what has been suggested and also what has been reported by other studies. WHO has suggested 30 minutes of physical activity five days a week to prevent and control high blood pressure.\(^10\) As the majority of respondents were involved in farming, they were physical active for at least 30 minutes because of their occupation. Still there was poor adherence to physical activity in our study because the respondents were only involved in specific exercise activity like walking, jogging and running other than household works unless they found themselves obese.

In our study, majority of the respondents were illiterate so they couldn't read food labels while grocery shopping and did not modify their recipes while cooking which are two other major questions for better scoring for good weight management.

As the age increases, people often become obese and gain weight, thus older people are more subjected to hypertension. We found a higher rate of smoking in men than in women. 51.5% of them were adherence to non-smoking in our study, whereas in the study of Warren-Findlow et al. and Hu et al., 85.3% and 86.7% were non-smokers.\(^7,8\)

The studies showed 51.5% abstained from alcohol whereas a cross-sectional study conducted in TUTH showed 84% were non-alcoholic.\(^11\) Overall, there were more self-care behaviors of all types in individual between the age group of 45-69 years compared to other ages. Marital status, education level and monthly household income were associated with non-smoking. Physical activity was significantly associated with Body mass index, where participants with normal BMI were more likely to adhere physical activity. Also, majority of people had normal BMI. People were involved in physical activities only if they were obese and were sensitive to disease. There was no any person adherent towards weight management. Thus, there was lack of assessing the activities undertaken to manage weight through dietary practices such as reducing portion size and making food substitutions as well as exercising to lose weight.

**CONCLUSIONS**

The study findings illustrate that hypertensive patients of all aged group from ward no. 1 and 4 of Tsum-Nubri Rural Municipality in Gorkha district had poor adherence to self-care practices in terms of medication adherence, physical activity, low-salt diet and weight management (less than 50%) and moderate adherence.
regarding non-smoking and alcohol abstinence (more than 50%). Marital status, education level and monthly household income were associated with non-smoking. Similarly, Body Mass Index was associated with physical activity. Lifestyle modification and regular monitoring must be considered. Individuals favor way of life change simply after stoutness and disease, rather it ought to be done as a preventive viewpoint.

**CONFLICT OF INTEREST:** None

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