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Adherence to Anti- Hypertensive Medications among Patients in Selected Health Facilities of Nepal

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ABSTRACT

Background: Hypertension is a non-communicable disease and one of the most prominent modifiable risk factors for cardiovascular diseases. 7.6 million premature deaths are attributed to high blood pressure around the world. Better adherence with antihypertensive medications improves quality and length of life. This research focuses on the extent of adherence towards prescribed antihypertensive treatment, and identify factors influencing non-adherence.

Methods: Descriptive cross-sectional study design was undertaken in various health care centers (2 primary health care center and 3 hospitals) of Nepal. A total of 348 individuals (age above 30) who suffered from hypertension visiting health institutes were included in the study. Adherence was calculated using Morisky Medication Adherence scale.

Results: Adherence level to the antihypertensive medication as per the morisky adherence scale, 38.8% had medium level of adherence, 37.4% had a low adherence level, and 23.9% had a high adherence level among 348 participants. From the total participants, 89 admitted to be irregular in medication use. 56% of them claimed to do so because of forgetfulness, 12.4 % because of consistent exercise and low-salt diet, 10.1% due to the lack of affordability.

Conclusions: Our study had concluded that the majority of participants had medium to low levels of adherence to anti-hypertensive drugs. Forgetfulness was major cause for irregular medication. Patient education and counseling, family support also seem to be important for proper adherence to drugs. Thus, health care providers should allocate ample time in educating, counseling clients and family.

Keywords: Adherence; hypertension; medication; patients

INTRODUCTION

Hypertension is a non-communicable disease and a major global public health problem that is estimated to affect almost one fourth of the adult population worldwide.[1] In Nepal, the prevalence of Hypertension, including those on medication is 26%.[2] According to WHO 2018, Hypertension deaths in Nepal is 1.24% of total deaths.[3] Estimates suggest that 31.1% of adults(1.39 billion) Worldwide population had hypertension in 2010.[4] 7.6 million premature deaths are attributed to hypertension around the world.[5] Better adherence with antihypertensive medications improves quality and length of life. It can prevent 89,000 premature deaths in US per year.[6]

Adherence to a medication regimen is generally described as the extent to which patients take medications as prescribed by their health care providers.[7] Non-adherence can be intentional and unintentional medicine taking behavior.[8]

In Nepal, although one quarter of the population have hypertension, 90% of the diagnosed population is currently not under medication.[2] This study was aimed to explore the adherence towards prescribed antihypertensive treatment, and identify factors influencing non-adherence.

METHODS

This was descriptive cross-sectional study conducted at Kakani PHCC, Nuwakot, Sundarbazar Hospital, Lamjung, Sulichaur PHC, Rolpa, Grande Hospital, Kathmandu and Patan Hospital, Lalitpur. After the ethical approval was obtained from IRB. Taking Z value of 1.96 at 96% for

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confidence interval and marginal error of 5%, sample calculated as 341. Thus, our study included 348 patients from the above mentioned five medical institutions from June 2017 to September 2017.Convinence sampling technique was utilized for collecting data from various centers.

In order to ensure diversity and competence, both male and female patients above or equal to 30 years who suffer from hypertension were selected. These patients were also required to either be taking the anti-hypertensive medication regularly, or taking the medications irregularly, or not taking the medications at all despite being diagnosed with hypertension. Even a single day of discontinuation (missed medication) was included as non-adherence in this study. Adherence calculation was done with Morisky adherence scale. Exclusion criteria included patients with secondary hypertension.

Data was collected through in-person interviews using a predesigned questionnaire. Each participant answered a demographic questionnaire that recorded their location, gender, marital status, and education.

The collected data was then entered in EpiData and exported to Statistical Package for Social Sciences (SPSS) version 20 for data analysis and descriptive analyses were performed.

RESULTS

Out of 348 patients who were taking anti-hypertensive medication, 183(52.6%) were male and 165(47.4%) were female. About 52.6% of the 348 patients were male and 47.4% were female. Among the participants majority of them were informally educated (39.1%), followed by secondary level education (16.7%), higher secondary (12.9%), graduate (10.1%), and postgraduate (8.6%) level of education.

Table 1. District wise distribution of participants.

District name	Frequency(n)	Percent(%)
Kathmandu(Grande hospital)	100	28.7
Lamjung(Sundarbazaar hospital)	50	14.4
Nuwakot(kakaniPhcc)	50	14.4
Rolpa(Sulichaurphcc)	50	14.4
Lalitpur(Patan Hospital)	98	28.2
Total	348	100

Table 1 showed most of the participants were from Kathmandu district (28.7%) followed by Lalitpur (28.2%), Lamjung (14.4%), Nuwakot (14.4%) and Rolpa (14.4%) respectively. In terms of the adherence level as per the morisky adherence scale, 38.8% of the participants had medium level of adherence to anti-hypertensive medication, 37.4% had a low adherence level, and 23.9% had a high adherence level.

Most of the male participants had medium levels of adherence (39.9%), followed by low levels of adherence (35.00%), and high levels of adherence (25.1%) respectively. Similarly, among the female participants, 40.00% had low levels of adherence, followed by medium levels of adherence (37.60%) and high adherence levels (22.4%) respectively. (Table-3). Similarly, among the informally educated participants (46.3%) had low levels of adherence, followed by medium levels of adherence (31.6%), and high levels of adherence (22.1%). Similarly, among the pre-primary educated participants, 52.6% had medium level of adherence whereas 26.30% had low levels of adherence. Additionally, among the graduate students 37.1% had medium levels of adherence.

About 89% of the study participants were married out of which 39.7% had medium adherence to anti-hypertensive medication, 37.4% had low adherence and 22.9% had high adherence (Table 5).

From the total participants, 89 admitted to be irregular in medication use. 56% of them claimed to do so because of forgetfulness, 12.4 % because of consistent exercise and low-salt diet, 10.1% due to the lack of affordability, 6.7% for fear of addiction to medication, whereas only 1.12 % were irregular in medication use because of lack of awareness about complications regarding hypertension.

Table 2. Magnitude of adherence level of anti-hypertensive drugs.

Level of adherence	Frequency(n)	Percent (%)
High adherence	83	23.9
Medium adherence	135	38.8
low adherence	130	37.4
Total	348	100.0

Above table shows that the majority participants had medium levels (37.4%) of adherence to anti-hypertensive drugs.

Table 3. Sex-wise distribution of adherence level.

Sex	high adherence	medium adherence	low adherence	Total
male	46(25.1)	73(39.9)	64(35)	183
female	37(22.4)	62(37.6)	66(40)	165
Total	83(23.9)	135(38.8)	130(37.4)	348

Table 4. Educational level wise distribution of adherence level.

Educational level	high adherence	medium adherence	low adherence	Total
Informal education	30(22.1)	43(31.6)	63(46.3)	136
Pre-primary	4(21.1)	10(52.6)	5(26.3)	19
Primary	3(12)	14(56)	8(32)	25
Secondary	13(22.4)	27(46.6)	18(31)	58
Higher secondary	15(33.3)	13(28.9)	17(37.8)	45
Graduate	11(31.4)	13(37.1)	11(31.4)	35
Postgraduate	7(23.3)	15(50)	8(26.7)	30
Total	83(23.9)	135(38.8)	130(37.4)	348

**Multiple responses*

Table 5. Marital status distribution of adherence level.

Marital status	high adherence	medium adherence	low adherence	Total
Unmarried	1(12.5)	3(37.5)	4(50)	8
married	71(22.9)	123(39.7)	116(37.4)	310
separated	0	0	1(100)	1
Widow	11(37.9)	9(31)	9(31)	29
Total	83(23.9)	135(38.8)	130(37.4)	348

Table 6. Reasons for non- adherence to medication.

Reasons for non-adherence	Frequency (n)	Percent (%)
Expensive medication	9	10.1
Forget fulness	50	56.1
Use of Ayurveda and other forms of medicine	7	7.8
Regular exercise and low salt diet	11	12.4
Fear of addiction to medicine	6	6.7
No information regarding complications	1	1.12
Difficulty for regular follow-up	5	5.6
Total	89	100

DISCUSSION

Consistent control of blood pressure is extremely crucial in the patients affected by Hypertension. Even if patients show asymptotic behavior and have no visible effects, patients should follow regular medication and proper dietary regimens. Adherence to the antihypertensive medication can result in the controlled blood pressure and reduction in adverse effects. However, it has been found that despite clear and consistent communication from the clinician about the benefits of antihypertensive therapy, it is difficult to make the patients adhere to the medication. [9]

As hypertension needs long term adherence to treatment, this study was carried out to evaluate the adherence of the anti-hypertensive drugs in a few hilly districts of Nepal where standard level of 120/80 SBP and 90/60 DBP blood pressure is not achieved.

We used the Morisky adherence scale with the eight questions as an initial tool to screen patients with different levels of adherence in order to differentiate patients with the risk of uncontrolled blood pressure.[10] Different socio-economic factors such as educational level, age, sex, employment status were considered that could affect the adherence to the medication.

The study concluded that in regards to the magnitude of adherence to the anti-hypertensive therapy, 23.9% of the sample population (348) had high adherence and 37.4% had low adherence. Whereas, in the study conducted by Hashmi et al[11] in Pakistan among 438 patients, 77% of cases were adherent and 23% of cases were non-adherent to the antihypertensive therapy.

Further, the study shows that the education level affects the adherence of anti-hypertensive drugs. According to the above data, informally educated participants 46.30% had low levels of adherence and graduates had medium levels of adherence 7.10%. Whereas according to the study done by Okello et al[12] in Uganda, drug adhesion was relatively high in uneducated (55.9%) than patient who are educated above tertiary level(6.3%.) The differences in these datas might be due to the difference and inequalities in access to treatments, limited supply of medications, limited capacity to conduct clinical investigation in Uganda.[12]

In the systemic review and meta-analysis of the adherence to antihypertensive drugs in 2017 done by Abegaz et al[13] the percentage of non-adherence to antihypertensive medications was higher in females: 53.9% than males: 46.2%, whereas in this study adherence to antihypertensive medications was found to be low in females: 22.40% and higher in males (25.1%). These values obtained in this study might be relatively low as the site of our data collection is Nepal, an underdeveloped country with higher literacy rate as opposed to developed countries where the systemic review was conducted.

While considering the marital status of patient, people with strong family support (married) have high adherence to the drug in our study which is similar to the study done by the Donald E in 2008 UCLA school of

public health.[10]

CONCLUSIONS

Majority of clients have medium to low levels of adherence to anti-hypertensive drugs. 38.8% had medium levels of adherence, 37.4% had low levels, and 23.9% had high levels of adherence. Clients who were irregular on medication admitted forgetfulness to be the major cause. Sex, education level, marital status had strong impacts on level of adherence to anti-hypertensive medications. Client education and counseling, family support also seem to be important for proper adherence to drugs. Thus, health care providers should allocate ample time in educating, counseling clients and family.

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