Lifestyle Modification after Diagnosis of Hypertension in Patients Visiting Lumbini Medical College Teaching Hospital

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ABSTRACT:

Introduction: Lifestyle modifications is an important aspect of hypertension therapy. However, studies on this non-pharmacological approach of hypertension management and its impact is very limited in a developing country like Nepal. The objective of the present study was to determine the life style of patients after diagnosis of hypertension. **Methods**: A descriptive cross sectional study design was conducted in Lumbini Medical College Teaching Hospital (LMCTH). A total of 63 patients attending Medical outpatient clinic of Lumbini Medical College who were diagnosed as hypertensive at least two months before the interview were included. Data were collected from 22nd February 2015 to 21st March 2015 by interview method using a questionnaire consisting of a combination of structured and semi-structured questions. **Results**: This study revealed that non-vegetarian decreased from 95.2% to 74.6% after diagnosis. Lifestyle modification criteria like amount of salt intake, smoking, and alcohol consumption were significantly reduced whereas physical exercise and stress reduction activity were significant increased. **Conclusion**: Majority of respondents has changed their lifestyle after diagnosis of hypertension.

Keywords: healthy diet • healthy lifestyle • hypertension • lifestyle • sedentary lifestyle

INTRODUCTION:

Hypertension is defined as a systolic blood pressure (SBP) greater than 140 mm Hg and diastolic pressure greater (DBP) than 90 mm Hg based on average of two or more accurate blood pressure measurements taken during two or more contacts with a health care provider.[1]

The World Health Organization (WHO) estimates that more than one billion population worldwide is affected by high blood pressure with prevalence of hypertension in one in every three adults. Overall 26.4% adult world population was estimated to have hypertension in the year 2000, a number that was projected to increase to 29.2% by 2025.[2]

Globally cardiovascular disease accounts for approximately 17 million deaths a year, nearly one third of the total deaths. Of these, complications of hypertension account for 9.4 million deaths worldwide every year.[3] Hypertension is responsible for at least 45% of deaths due to heart disease (total ischemic heart disease) and 51% of deaths due to stroke.[4]

Overweight, sedentary behavior, excessive alcohol intake, higher social class, additional salt intake, diabetes mellitus, and smoking are risk factors for hypertension in most of the countries of Asia.[5] Lifestyle modification, previously termed nonpharmacologic therapy, has important roles in hypertensive as well as non-hypertensive individuals.[6,7] In hypertensive individuals, lifestyle modifications can serve as initial treatment before the start of drug therapy and as an adjunct to medication in persons already on drug therapy. In hypertensive

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individuals with medication-controlled blood pressure (BP), these therapies can facilitate drug step-down and drug withdrawal in highly motivated individuals who achieve and sustain lifestyle changes. Even an apparently small reduction in BP, if applied to an entire population, could have an enormous beneficial effect on cardiovascular events. For instance, a three mm Hg reduction in systolic BP should lead to an eight percent reduction in stroke mortality and a five percent reduction in mortality from coronary heart disease.[7]

The Dietary Approaches to Stop Hypertension (DASH) diet is a diet rich in fish, lean meat, low-fat dairy, fruits, vegetables, whole grains, legumes, nuts, and seeds. DASH diet lowered SBP for hypertensive patients by an average of 11 mm Hg and DBP by an average of 5.5 mm Hg compared with the control group.[8] Reduction of three g/d in salt intake would lower blood pressure by 2.5/1.4 mm Hg, which would reduce strokes by 12 to 14% and ischemic heart disease by nine percent to 10%.[5] Regular aerobic physical activity has been demonstrated to be beneficial both for prevention and treatment of hypertension.[9]

There are meager studies related to the change in pattern of lifestyle after diagnosis of hypertension in our part of world. Thereby, this study was carried out to explore whether lifestyle modifications were implemented after the diagnosis of hypertension and to find out the relationships, if existed, between them.

METHODS:

A descriptive cross sectional study was conducted in medical outpatient clinic of Lumbini Medical College Teaching Hospital. A total of 63 hypertensive patients who were diagnosed more than two months back were included in the study. The study was done from 22nd of January 2015 to 21st of March 2015. Data were collected by face to face interview technique. Special care was taken for maintaining ethical issue during the time of data collection and anonymity of all participants was maintained. Data were analyzed with SPSS 17. Various tests such as frequency distribution, Chi-square test were applied.

RESULTS:

Socio-demographic profile of patient included in the study is shown in Table 1. It shows that the majority (46%) of the respondents were above 60 years of age. Both genders were almost equally affected. Most (66.7%) of respondents were educated. Table 2 shows frequency distribution of participants according to hypertension related variables. It depicts that majority (60.3%) of the respondents were suffering from hypertension for more than two years. Fifty four percent of respondents had the habit of visiting hospital once in a month.

Before diagnosis, there were fewer vegetarian individuals (4.8%), but after they were diagnosed to have hypertension, the number of vegetarian rose to 74.6%. This difference was significant, $X2$ (N=63, df=1) = 10.47, p = 0.001.

Distribution of respondents according to type of meat consumed and frequency of consumption before and after the diagnosis of hypertension is shown in Table 3. It shows that consumers of mutton, chicken, fish, and eggs all decreased after the diagnosis of hypertension. Table 4 shows the distribution of respondents according to type of fats consumption before and after the diagnosis of hypertension. It shows that the users of ghee (saturated fat) were decreased. There was also a decrease in daily users of mustard oil, but there was increase in the uses of sunflower oil. Amount

Table 1: Socio-demographic profile of the participants

Variables	n	%
Age		
30-40 Years	5	7.9
40-50 years	11	17.5
50-60 years	18	28.6
Above 60	29	46
Gender		
Male	32	50.8
Female	31	49.2
Educational status		
Illiterate	21	33.3
Literate	42	66.7
Among literate		
Primary	14	22.2
Secondary	18	28.6
Higher secondary	3	4.8
Informal education	7	11.1
Ethnicity		
Brahmin	20	31.7
Chhetri	12	19
Janajati	21	33.3
Dalit	10	15.9

of salt taken before and after the diagnosis of hypertension is shown in Table 5. It shows that there was decrease in the amount of salt consumed. Table 6 shows the distribution of study population with lifestyle risk factors before and after the diagnosis of hypertension. There was significant reduction in frequency of smoking and alcohol consumption; whereas, there was significant increase in physical activities and stress reduction activities.

DISCUSSION:

The results of this study showed most of the respondents (95.2%) were non-vegetarian and 4.8% were vegetarian before diagnosis, whereas after the diagnosis of hypertension vegetarian were found to have increased from 4.8 % to 25.4%. This finding is supported by the study done by Acharya R. et al. in Kathmandu, which also showed 90% were non-vegetarian and only 10% were vegetarian before diagnosis but after diagnosis the vegetarian increased from 10% to 20%.[9]

The consumption habit of non-vegetarian items such as mutton, buff, pork, chicken, fish and

Table 2: Frequency Distribution of participants according to hypertension related variables

Variables	n	%
Duration of hypertension		
2 month-1 year	11	17.5
1 year- 2 years	14	22.2
More than 2 years	38	60.3
Duration of hospital visit		
Once in a month	34	54
Once in a three month	8	12.7
According to doctors instruction	13	20.6
While facing problem	8	12.7

Table 3: Distribution of respondents according to type of meat consumed and frequency of consumption before and after diagnosis of hypertension

Type of meat/egg	Daily n (%)	Weekly n (%)	Monthly n (%)	Occasionally n (%)
Mutton				
Before	1(1.6)	25(39.7)	10(15.9)	22(34.9)
After	0	6(9.5)	3(4.8)	25(39.7)
Pork				
Before	1(1.6)	7(11.1)	4(6.3)	11(17.5)
After	1(1.6)	0	2(3.2)	10(15.9)
Chicken				
Before	5(7.9)	15(23.8)	7(11.1)	23(36.5)
After	0	8(12.7)	3(4.8)	29(46)
Fish				
Before	0	2(3.2)	5(7.9)	37(58.7)
After	0	0	3(4.8)	28(44.4)
Egg				
Before	18(28.6)	5(7.9)	1(1.6	19(30.2)
After	1(1.6)	4(6.3)	1(1.6)	27(42.9)

Table 4: distribution of respondents according to type of fats consumption before and after diagnosis of hypertension

Type of Ghee/Oil	Frequency of consumption n(%)				
	Daily	Weekly	Monthly	Occasionally	Non-user
Ghee					
Before	26(41.3)	5(7.9)	0	28(44.4)	4(6.3)
After	2(3.2)	2(3.2)	0	16(25.4)	43(68.3)
Mustard Oil					
Before	56(88.9)	1(1.6)	1(1.6)	5(7.9)	0
After	33(52.4)	0	0	27(42.9)	3(4.8)
Soybean Oil					
Before	4(6.3)	1(1.6)	2(3.2)	45(71.4)	11(17.5)
After	7(11.1)	0	1(1.6)	43(68.3)	12(19)
Sunflower Oil					
Before	0	0	0	43(68.3)	20(31.7)
After	21(33.3)	1(1.6)	1(1.6)	29(46)	11(17.5)

Table 5: Amount of salt taken before and after the diagnosis of hypertension

	Low	Normal	Additional
Before	5(7.9)	42(66.7)	16(25.4)
After	54(85.7)	9(14.3)	0

Table 6: Lifestyle risk factors before and after the diagnosis of hypertension

Alterations in lifestyle risk factors			
	Before n(%)	After n(%)	
Smoking	24 (38.1)	8 (12.7)	$X^2=8, p=.005$
Alcohol consumption	29(46)	8 (12.7)	$X^2=11.9, p<.001$
Physical Activity	9 (14.3)	29 (46)	$X^2=10.53, p=.001$
Stress reduction activity	13 (20.6)	41 (65.1)	$X^2=14.5, p<.001$

eggs were taken into account while collecting the data in this study. This study showed that there was a reduction in the consumption of meat items after diagnosis of hypertension. There was decline in consumption of items like mutton, chicken, and eggs. This finding was supported by a similar study by Acharya R. et al. in which there was also statistically significant decline in consumption of those items.[2]

Finding of this study revealed that the number of respondents involved in smoking and drinking alcohol decreased significantly after diagnosis of hypertension which is consistent with other studies.[9,10] Physical workout has been taken as one of the associated factors for the hypertension. After the diagnosis of hypertension, the number of respondents doing physical exercise increased significantly from 14.3% to 46% which is supported by study done by WHO in 2006. That study revealed that very few respondents (14%) had gone through stress reduction activities before diagnosis but after that number increased to 39%.[11]

Similarly, salt restriction, regular exercise, stress reduction, unsaturated oil reduction, alcohol moderation strategies has been adopted to control blood pressure by different hypertensive patients in different counties.[9,11,12]

CONCLUSION:

Lifestyle modification strategies have been implemented by majority of the respondents after diagnosis of hypertension which is good sign of hypertension management. Proper counseling by healthcare professionals regarding lifestyle modification is of utmost necessity to assure long normal life of the hypertensive patients.

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