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ORIGINAL ARTICLE

Hypertension: Contributing Risk Factors and Lifestyle Modification among Hypertensive Clients

Uma J. Deaver*, Kanika, Ramneek***, Asir John Samuel******

*Associate professor, Department of Community Health Nursing, **Assistant Professor, Department of Medical Surgical Nursing, Maharishi Markandeshwar College of Nursing, Maharishi Markandeshwar University, Ambala, Haryana, India. ***Nursing Tutor, Maharishi Markandeshwar School of Nursing, ****Assistant Professor, Department of Pediatric Physiotherapy, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, Maharishi Markandeshwar University, Haryana. India.

Abstract

Background: Fast moving lifestyles, unearthly hours at work, addiction to alcohol and unhealthy meals are making more and more Indians fall prey to high blood pressure at a very young age. Hypertension is an ice berg disease. It is estimated that one quarter of all the adults in the world have hypertension. *Objective:* The objectives of the study was to assess the contributing risk factors and lifestyle modification of hypertensive clients residing in rural and urban area, and to determine their association between level of contributing risk factors and lifestyle modification with selected sample characteristics. *Methods:* 100 clients with hypertension were selected through purposive sampling technique. In view of the nature of the problem and to accomplish the objectives of the study, structured interview schedule assessment tool was prepared to assess the contributing risk factors and lifestyle modification of hypertensive clients. Validity was ensured in the field of Nursing and medical departments. Reliability of the tools was tested using cronbach alpha, which was 0.89. Both descriptive and inferential statistics were used. *Results:* Out of 100 HTN clients in rural 25 (50%) were in the age group of (45-55years) where as in urban 20 (40%) were in the age group of (35-45 years). Most of them were male i.e. is 44 (88%) in both the areas, education wise rural hypertensive clients 15(30%) were non literate. While among urban hypertensive clients 15 (30%) were literate. Majority of the hypertensive clients were in stage-II, among them, 22 (44%) in rural and 14 (28%) in urban. Most of the hypertensive clients in rural had co-morbidity with chronic kidney disease 24(48%) while 25 (50%) in urban had no co-morbid diseases. *Conclusion:* Hypertension affects more among males than females. Literacy plays an important role in keeping the clients from getting affected with hypertension. Hence every community health nurses working among the non-literate population must prepare health education handouts using simple legible and understandable language.

Keywords: Drinking; Hypertension; Lifestyle Modifications; Risk Factors; Smoking.

Introduction

Hypertension has become a major cause of morbidity and mortality worldwide and is now ranked third as a cause of disability-adjusted life years [1, 2]. The World Health Report states that worldwide, elevated blood pressure alone contributes to about 50% of cardiovascular disease (CVD). Furthermore, the risk for CVD starts even at upper limits of normal levels of blood pressure. Therefore it must be desirable to achieve optimal or normal BP (below 130/80mmHg) in the young and middle-aged. Hypertension is an iceberg disease. It is estimated that one quarter of all the adults in the world have hypertension. Hypertension is a major risk factor for cardiovascular diseases such as stroke and

Reprint Request: Asir John Samuel, Department of Pediatric physiotherapy, Assistant Professor, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, Maharishi Markandeshwar University, Mullana-133207, Ambala District, Haryana. India.
E-mail: asirjohnsamuel@mmumullana.org

myocardial infarction. Cardiovascular causes account for around 20% of mortality worldwide and that 50% of deaths occur in the developed countries [3]. The prevalence of raised blood pressure was highest in Africa, where it was 46% for both sexes combined. The lowest prevalence of raised blood pressure was in the WHO Region of the Americas at 35% for both sexes [4]. According to the World Health Statistics 2012 report, India has low rates of hypertension compared to world figures. In India, 23.10 per cent men and 22.60 per cent women above 25 years suffer from hypertension. India also fares better than the global average of 29.20 in men and 24.80 in women respectively [5].

Since India, the world's largest democracy is not only undergoing a rapid economic growth, but is also accompanied by demographic, lifestyle and cultural changes which has a large impact on the health profile of India's citizens and placed a significant strain on the country's healthcare system.

Worldwide, raised blood pressure is estimated to cause 7.5 million deaths, about 12.8% of the total of all deaths and 57 million disability adjusted life years (DALYS) or 3.7% of total DALYS. In India, cardiovascular diseases (CVDs) are estimated to be responsible for 1.5 million deaths annually and it is estimated that by 2020, CVDs will be the largest cause of mortality and morbidity. According to Mayo Clinic staff, High blood pressure has many risk factors, which includes, Age. The risk of high blood pressure increases as age increases. Through early middle age, high blood pressure is more common in men. Women are more likely to develop high blood pressure after menopause. High blood pressure is particularly common among blacks, often developing at an earlier age than it does in whites. Serious complications, such as stroke and heart attack, also are more common in blacks. High blood pressure tends to run in families. Lack of physical activity also increases the risk of being overweight. Tobacco uses in form of smoking or chewing immediately raise your blood pressure temporarily, but the chemicals in tobacco can damage the lining of your artery walls. This can cause your arteries to narrow, increasing your blood pressure. Too much sodium or too little potassium in your diet can cause your body to retain fluid, which increases blood pressure. It's uncertain if having too little vitamin D in your diet can lead to high blood pressure. Vitamin D may affect an enzyme produced by your kidneys that affects your blood pressure. Chronic conditions also may increase your risk of high blood pressure, includes high cholesterol, diabetes, kidney disease and sleep apnea [6].

Inter-stroke and inter-heart study teams identified risk factors for hypertension in Indians as higher body mass index (BMI), abdominal obesity, greater age, greater alcohol consumption, sedentary lifestyle and stress [7]. As rural India continues to undergo demographic transition, the contribution of such risk factors to hypertension in India is likely to change. Studying these changes may give greater insight into how best to allocate resources to reduce the burden of hypertension on India's heath care system [8]. Therefore our aim of the study is to assess the contributing risk factors and lifestyle modification of hypertension among hypertensive clients residing in rural and urban area of Ambala district, Haryana, India.

Materials and Methods

A non-experimental approach and descriptive design were used. 100 hypertension clients (50 from rural area and 50 from urban area) selected through purposive sampling technique were assessed for contributing risk factors and lifestyle modification using structured interview schedule assessment tool. Reliability of the tools was tested by Croncbach's alpha, which was 0.89.

Structured interview schedule was used to assess the contributing risk factors and lifestyle modification among rural and urban hypertensive clients. The tool was divided into 5 parts with 41 items.

Part (A) - Dietary habit (5 items)

Part (B) - Cigarette / Tobacco (6 items)

Part (C) - Physical activity (7 items)

Part (D) - Stress (15 items)

Part (E) - Diet (8 items)

For analysis, descriptive and inferential statistics were used.

Data Collection Procedure

Formal administrative approval was obtained from the Urban Municipal Commissioner and village Sarpanch to conduct the study. Data were collected in the month of December, 2013. Self introduction and introduction to the nature of the study were given to rural and urban hypertensive clients. To obtain a true response, the purpose of the study was explained and the subjects were assured about the confidentiality of their responses. The clients gave their consent to participate in the study. The structured interview schedule was conducted individually for 30 minutes for assessing the contributing risk factors and lifestyle modification of hypertensive clients.

Data analysis

All the collected raw data was analysed using the statistical package for social sciences (SPSS, version 17.0 Inc., Chicago, IL) for windows 8 Pro editions. Result reporting was done by the descriptive statistics. Mean, standard deviation (SD), median and proportions were used to express them.

Results

Out of 100 HTN clients in rural 25 (50%) were in the age group of (45-55years) whereas in urban 20 (40%) were in the age group of (35-45 years). Most of them were male i.e. is 44(88%) in both the areas, education wise rural hypertensive clients 15 (30%) were non literate. While among urban hypertensive clients 15 (30%) were literate. All the clients in rural and urban area were married 50 (100%) majority 30 (60%) were belonged to Hindu religion in both areas. According to the type of family in rural 45 (90%) lived as nuclear family and in urban area 39(78%) lived as joint family. Both the areas 20 (40%) as per occupational status were home maker.

Health related data assessment findings shows that 19 (38%) rural hypertensive clients were diagnosed with hypertension since 4-6 years whereas in urban 24 (48%) diagnosed with hypertension from 4-6 years. Majority of the hypertensive clients were in stage-II, i.e. 22 (44%) in rural and 14 (28%) urban.

Maximum number of hypertensive clients 23 (46%) in rural area and 21 (42%) in urban had BMI (23-24). Most of the hypertensive clients in rural had co morbidity with chronic kidney disease 24 (48%) while 25 (50%) in urban had no co-morbid diseases.

Table 1 depicts that the mean percentage (%) of the contributing risk factors among rural clients were in the physical activity (80.86%), stress (80.50%) and smoking (75.9%), while for the urban hypertensive clients it was smoking (84.76%) and stress (78.47%).

Table 1: Mean, median, mean %, SD of contributing risk factors of rural and urban hypertensive client **N=100**

Contributing Risk factors	Mean	Median	Mean %	SD
Drinking				
Rural (n=50)	10.40	11	52.00%	3.753
Urban (n=50)	13.02	13	65.10%	1.708
Smoking				
Rural 1 (n=50)	3.64	15	75.78%	3.757
Urban (n=50)	15.26	16	84.78%	2.018
Phy/act				
Rural (n=50)	11.32	14	80.86%	5.137
Urban n=50)	10.90	14	77.86%	5.304
Stress				
Rural (n=50)	24.22	26	80.73%	3.553
Urban (n=50)	23.54	24.5	78.47%	3.284
Diet				
Rural (n=50)	16.44	17	68.50%	3.918
Urban	17.98	18	74.92%	2.938

Table 2 depicts the mean percentage (%) in the lifestyle modifications done after being diagnosed as hypertension. The rural clients showed highest lifestyle modification in the physical activity and stress while in the urban clients lifestyle modification was seen more in the smoking and stress.

Table 2: Mean, median, mean %, SD of life style modification of rural and urban hypertensive clients

Lifestyle Modification	Mean	Median	Mean %	SD
Drinking				
Rural (n=50)	10.02	10	50.10%	2.360

	Urban (n=50)	11.74	12	58.70%	1.998
Smoking					
	Rural (n=50)	13.96	15	77.56%	3.232
	Urban (n=50)	14.34	15	79.67%	2.932
Phy/act					
	Rural (n=50)	.ȣȢ	14	80.86%	5.137
	Urban (n=50)	11.02	13	78.71%	5.016
Stress					
	Rural (n=50)	26.16	26	80.53%	3.484
	Urban (n=50)	23.72	25	79.07%	3.201
Diet					
	Rural (n=50)	16.44	17	68.50%	3.918
	Urban	18.36	19	76.50%	3.630

Discussion

The findings of present study reveal that majority of clients (50%) were in the age group of (45-55) yrs and males are more suffering with hypertension in rural and urban area. And the above findings are similar to those reported previously by Gulati S (2004) showed that majority of the males were suffering with hypertension as compared to females.

Findings related to contributing risk factors suggested that physical activity (80.86%) and stress (80.73%) was the main contributing risk factor of hypertension in rural area where as in urban drinking habit (65.10%), smoking (84.78%) and diet (68.50%) was the main contributing risk factor of hypertension. These findings are similar to the other study done by Goel and Sharma (2004) findings revealed that 22% and 11% hypertensive clients in rural and urban population respectively. It was found that in urban community increasing age, drinking habit, smoking and diet were highly associated with hypertension and in rural increasing age and poor physical activity were highly associated with hypertension.

The present study findings shows that drinking is the highly contributing risk factor of developing hypertension i.e., (52%) in rural and (65%) in urban people are hypertensive due to alcohol specially in men, these findings are similar to the study done by Zilkens in 2005. The study finding revealed that people who drank more than 15 alcoholic units a week at a high risk of developing hypertension.

In the present study 95% hypertensive clients take regular antihypertensive drugs to maintain their normal blood pressure level. These findings are same in another study done by Kaplan, Lieberman and Neal. They reported that hypertensive drugs are useful and effective in treating hypertension and preventing its complications.

In the present study that people with high BMI level is more than (25.0%) and who are obese they were at high risk of developing hypertension than people with normal BMI level, same findings shows in the another study by Pascatello in (2000) (77%) obese people were at high risk of hypertension. Aerobic exercises and low fat diet helps the people with hypertension in maintaining the normal level of blood pressure.

In summary, lifestyle modifications including weight control, exercise, reducing salt and fat intake and reducing alcohol intake all contribute to lower blood pressure and serum lipids. The relationship between reducing smoking and lowering blood pressure is controversial. Although reduction in smoking does not seem to be related to lower blood pressure, smoking does contribute to narrowing of the blood vessels. Patients with hypertension are prone to develop cardiovascular disease by smoking.

Conclusion

On the basis of the findings of the study following conclusion can be drawn:

- ✓ Hypertension is more common in males as compared to females and in the age group of 45-55 years.

- ✓ Hypertension is more common in married clients and in Hindu religion.
- ✓ Hypertension is more common in non literates.
- ✓ Hypertension is more common in the overweight / obese clients.
- ✓ Rural hypertensive clients have slightly different dietary pattern as compared to urban hypertensive clients.
- ✓ Hypertension is more common in middle class families.
- ✓ Hypertension is the main cause of CKD.
- ✓ All the rural and urban hypertensive clients regularly take antihypertensive medication.
- ✓ The main cause of hypertension in middle age is lack of physical activity, smoking and high saturated diet.
- ✓ Rural hypertensive clients take more alcohol than the urban hypertensive clients.
- ✓ All the rural and urban hypertensive clients modify their lifestyle at good level.

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