

Original Research Article

A study on the prevalence and awareness of hypertension among women in the reproductive age group and the factors contributing to it in a rural area of Jorhat district, Assam

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Received: 23 July 2017

Accepted: 09 August 2017

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ABSTRACT

Background: Hypertension has been identified as one of the major causes of morbidity and mortality in both developed and developing nations. Prevalence is seen to be increasing in the rural areas, especially among the females in the reproductive age group. The prevalence of hypertension is found to be high in Assam, while the awareness is quite low thus necessitating a study in this regard.

Methods: A total of 400 women in the reproductive age group were selected from Bagchung block, Jorhat by Simple Random Sampling. They were interviewed and their blood pressure was measured along with some anthropometric variables. Classification of hypertension was done as per the US Seventh Joint National Committee (JNC 7) report on the prevention, evaluation and treatment of high BP.

Results: A total of 23.5% prevalence of hypertension was found among the study subjects. 44.5% of the total was in the pre hypertensive stage. 77% of them had heard of hypertension while only 20% were aware of its side effects. Extra salt intake, family history and underlying medical conditions were the major risk factors.

Conclusions: Knowledge, awareness on hypertension in women in this part of the district is poor and the prevalence is high and their life style practices are grossly contributing to it. Therefore, efforts should be geared towards improving the levels of awareness of the women regarding hypertension and the risk factors.

Keywords: Hypertension, Prevalence, Awareness, Rural, Women, Reproductive age group

INTRODUCTION

Hypertension is prevalent all over the world. It has been identified as a major cause of morbidity and mortality in both developed and developing nations.¹ But recent data suggests that the prevalence of hypertension has remained stable or has decreased in economically developed countries during the past decade, while it has increased in developing countries.¹ An alarming rise in hypertension projected by the Global Burden of Hypertension, 2005 study and the GBD, 2010 study

portrays a grim picture of the Indian population.² It is not only a major risk factor and a powerful predictor of cardiovascular morbidity and mortality, but has also been proven to be a major risk for cognitive impairment and dementia.³

Recent records suggest an increase in the trend in the urban areas whereas, little is known about the rural areas as because they suffer from lack of exposure, awareness and ignorance resulting in a decline in the total number of reported cases.⁴ This necessitates a study in the rural

areas of the nation. Earlier, the prevalence of hypertension in men was reported to be high and it was largely attributed to the nature of their jobs.⁵ But, with the passage of time, the trend seems to be changing. According to a report, more than 25% of the female adult world population is hypertensive.⁶ Time is witnessing an increasing trend in hypertension, especially in women, due to ignorance of the disease, poverty and non-compliance.⁷⁻⁹ This formed an important basis for the choice of subject group of this study.

Assam, a northeastern state of India has diverse ethnic groups with distinct cultures.¹⁰ In the past few decades, the traditional dietary pattern of the native people of Assam has changed and their level of physical activity has decreased. The prevalence of hypertension is found to be high while the level of awareness is quite low.¹¹ But this prevalence varies considerably from region to region. In 2012, Jorhat had the highest number of cases of hypertension, among all the districts of Assam, both urban and rural put together.¹² There are little epidemiological data to identify the factors responsible for cardiovascular disease in Jorhat district. Also there is no data present for hypertensive women in the rural areas.

Therefore, the study was conducted in the rural area to assess the prevalence and awareness of hypertension in women of the reproductive age group and to know the factors contributing to the occurrence of hypertension. This will help in the development of local as well as national level health policies for prevention and control of hypertension among the women of rural areas.

Objectives

To study the prevalence and awareness of hypertension among women in the reproductive age group and the factors contributing to it in a rural area of Jorhat district, Assam.

METHODS

The present study was a community based cross sectional study conducted over a period of two months from July, 2016 to August, 2016 among the women of reproductive age group in the Bagchung block of Jorhat district, Assam. A sample of 400 women in the reproductive age group was selected by simple random sampling.

The sample was selected using the formula $n=4pq/l^2$. As there was no study carried out on hypertension among women of reproductive age group in this area, we assume p to be 50% with allowable error 10%.

Study instruments and data collection

All the women of reproductive age group belonging to the study area were enrolled for the study and then the required samples were selected randomly. Consent was obtained from all the participants after informing about

the study and its purpose. A predesigned, pretested, structured interview schedule was used to obtain data on socio-demographic profile like age, caste, occupation, marital status and literacy. Also, relevant questions regarding the knowledge of the subjects about hypertension and life style were made to find the predisposing factors for hypertension. Blood pressure was recorded by a sphygmomanometer and taken in sitting posture, as recommended by WHO. Classification of hypertension was done as per the US Seventh Joint National Committee (JNC 7) report on the prevention, evaluation, and treatment of high BP.¹³

Operational definitions

Hypertension

It was defined as: an average systolic BP ≥ 140 mmHg, an average diastolic BP ≥ 90 mmHg and/or self-reported current treatment for hypertension with antihypertensive medication.

Reproductive age group of women

As per World Health Organization (WHO), the reproductive age group of women was taken between 15 and 45 years.

Data analysis

The collected data were entered into Microsoft excel and analyzed using various tables, pie charts, bar diagrams etc.

Ethical clearance

The ethical clearance for the study was obtained from the institutional ethics committee.

RESULTS

In the present study, 23% of the respondents were in the age group 15-20 years and 51.5% belonged to the age group 21-30 years, 17% and 8.5% respectively in 31-40 and 41-45 years.

Regarding the education qualification, 26% were primary educated, 53% of the respondents had secondary level qualification or above, and only 10% were illiterates. Of the respondents 92% of them were non-working women which also included students and only 8% were engaged in some profession. Most (67.5%) of the respondents belong to the general category, 22.5% were OBC while 6% and 4% belonged to SC and ST respectively (Table 1).

The study showed that 32% of the study group was normotensive, 45.5% of them were pre-hypertensive, 10.5% and 4.5% of them were found to be in stage-I and stage-II hypertension respectively. Also, 8.5% women

reported of having hypertension and taking antihypertensive drugs (Figure 1). The study reveals that 97% of the women in the reproductive age group had the knowledge of normal blood pressure, while 77% knew about hypertension. 63.5% of them knew hypertension to be dangerous, while 53.5% of the women knew the signs and symptoms of hypertension. 55% of the respondents knew the methods of controlling hypertension while only 20% knew the side effects of hypertension (Figure 2).

Women with a positive family history had a prevalence of 21.27% and the consumption of extra salt in the diet was significantly (36.17%) related to the occurrence of hypertension. Underlying medical conditions and sedentary life style contributed 14.90% and 8.51% respectively. Alcohol intake, smoking, sedentary life style and weight were not found to be significant factors affecting hypertension. Direct relationship between increasing age and hypertension could not be found (Table 2).

Table 1: Socio demographic profile of the study population.

| Sociodemographic | Variables | Number | Percentage |
|------------------|----------------------------|--------|------------|
| | | N=400 | (%) |
| Age | 15-20 years | 92 | 23 |
| | 21-25 years | 104 | 26 |
| | 26-30 years | 102 | 25.5 |
| | 31-35 | 32 | 8 |
| | 36-40 | 36 | 9 |
| | 41-45 years | 34 | 8.5 |
| Literacy | Illiterates | 40 | 10 |
| | Upto primary school | 104 | 26 |
| | Upto secondary school | 212 | 53 |
| | Intermediate and above | 44 | 11 |
| Occupation | Non-working | 368 | 92 |
| | Working | 32 | 8 |
| Caste | General | 270 | 67.5 |
| | Other backward class (OBC) | 90 | 22.5 |
| | Scheduled caste (SC) | 16 | 4 |
| | Scheduled tribe (ST) | 24 | 6 |
| | Others | | |
| Marital status | Married | 356 | 89 |
| | Separated | 0 | |
| | Widowed | 2 | 0.5 |
| | Single | 42 | 10.5 |
| | Divorced | 0 | |

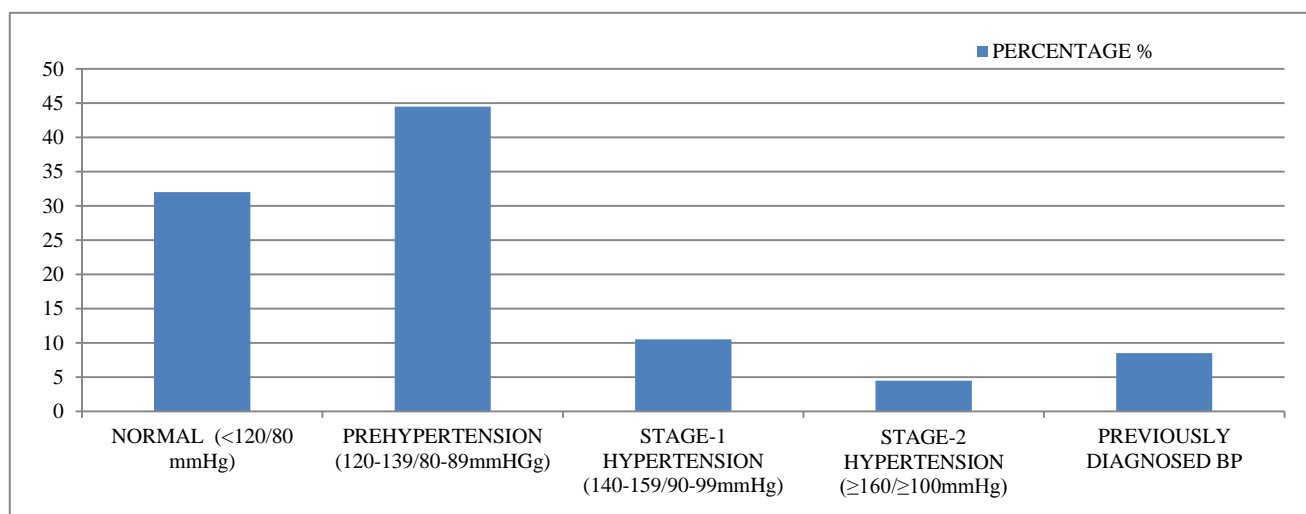


Figure 1: Classification of respondents based on blood pressure.

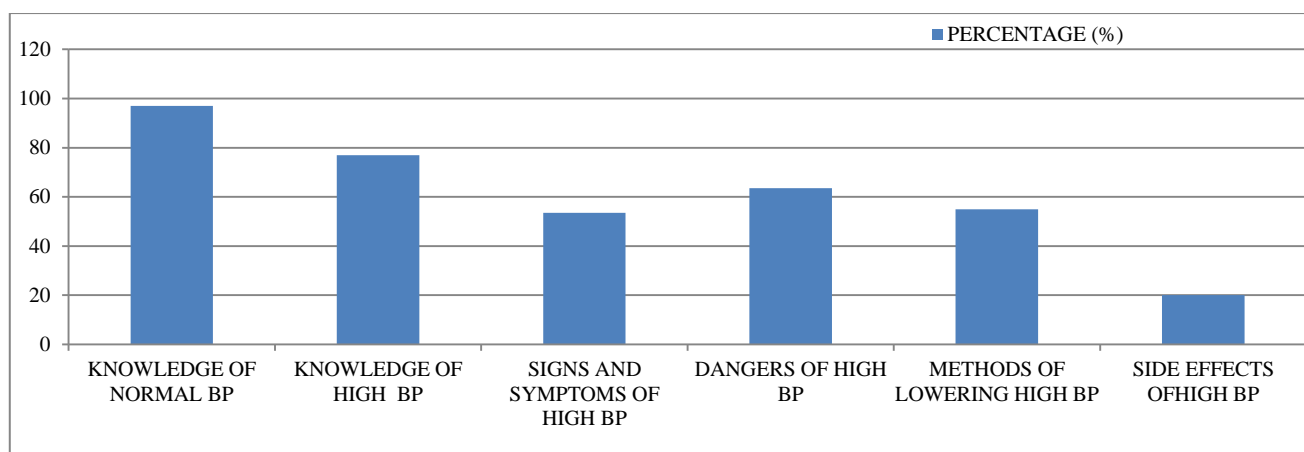


Figure 2: Awareness of respondents regarding hypertension.

Table 2: Factors contributing to the prevalence of hypertension.

| Variables(n=94) | No. of hypertensives | Percentage (%) | |
|-----------------------------------|----------------------|----------------|-------|
| Age | 15-20 | 16 | 17.02 |
| | 21-30 | 54 | 57.45 |
| | 31-40 | 16 | 17.02 |
| | 41-45 | 8 | 8.51 |
| Smoking | 2 | 2.12 | |
| Drinking alcohol | 4 | 4.25 | |
| Underlying medical condition | 14 | 14.90 | |
| Family history | 20 | 21.27 | |
| Sedentary life style | 8 | 8.51 | |
| Consumption of extra salt in diet | 34 | 36.17 | |

DISCUSSION

The study reveals that that greater number of those studied, fall within the age range of 21-30 years (51.5%) followed by 15-20 years (23%). 89% of them were married and 92% (was non-working which included the students) (Table 1).

97% of the subjects had heard of normal blood pressure while only 34% could define it while 3% had no information at all. Similarly, only 16% could define hypertension while 61% had only heard of it and 33% women had no information at all which is similar to the study of Azubuike et al.¹⁴ This suggests that some people or places within the locality are yet to have basic exposure to information on hypertension (Figure 2).

Exposure to knowledge on hypertension was significantly related with family history. Those with family history of hypertension paid more attention to information on hypertension. 53.5% of the subjects knew the signs and symptoms of hypertension and 63.5% of them thought it to be extremely dangerous. There was no knowledge on the asymptomatic presentations of hypertension. 55% of them knew the methods of lowering hypertension but only 20% could tell the side effects or complications of it unlike the study of Azubuike et al, where 55.6% of the

respondents knew the complications of hypertension.¹⁴ This could be due to the difference in location and study population. This also reflects the poor level of education in the area (Table 1) knowledge of complications of hypertension could facilitate positive attitude towards compliance to treatment and early detection. 36% of the hypertensives knew about their condition.

Various studies have shown the prevalence of hypertension among women to be between 20-40% (Figure 1) In a study conducted by Yadav et al, prevalence of hypertension among women was 32.2%.¹⁵ Also, in a study conducted by Bharati et al, the prevalence of hypertension was found to be 28%.¹⁶ But, in our study the prevalence was found to be 23.5%. The reason for this prevalence is the age group considered for the study, as all other cited studies were conducted among women above 30 years of age group and included the elderly women also in whom prevalence was more. But in our study, the age group considered was 15-45 years. Also, studies by Chandrashekhar et al and Naidu et al, the prevalence was found to be 8.6% and 16.3% respectively.^{17,18} This could be attributed to the fact that these studies did not include women who were pregnant and those with underlying medical conditions and ailments, whereas in our case, 55.3% of hypertensives were pregnant and 14.9% had underlying medical

conditions as diabetes, thyroid anomalies, cardiovascular diseases and respiratory problems. The study highlights that prevalence of hypertension in the region is not negligible and it cannot be ignored. Prevalence was found to be high in the 21-30 age group, attributable to the fact that, 51.5% of the study population which belonged to this age group included 13% of the total study population, which was pregnant. This highlights the problem of pregnancy induced hypertension in the area. Studies by Thawornchiasit et al and Chandrasekhar et al, found a higher prevalence of hypertension with increasing age but, in our study, 17.39% of the respondents belonging to 15-20 years were hypertensive.^{17,19} The prevalence was 26.3% for 21-30 years and 23.5% for both 31-40 years and 41-45% age group. As clear from this data, no direct relationship between increasing age and hypertension could be established. There was no difference in the prevalence of hypertension among women with respect to literacy, as in both the prevalence was equally found. But in a study conducted by Sidhu et al, hypertension was more among literates as compared to illiterates.²⁰ This could be due to the fact that both the literates and illiterates lived in the same rural setting and shared a common way of living.

Extra salt intake had the highest (36.1%) influence among the risk factors followed by family history (21.27%) and underlying medical conditions (14.9%). Alcohol intake, smoking, sedentary lifestyle and weight were not found to be significant factors affecting hypertension. Direct relationship between increasing age and hypertension could not be found (Table 2).

Besides other factors, consumption of extra salt in diet (as a side dish, a habit among the rural people of this area) was significantly high i.e. 36.1% related to hypertension. This is similar to the study of Hazarika et al, where extra salt intake was significantly associated with hypertension.²¹ Also, factors like family history and underlying ailments (diabetes, thyroid problems, respiratory disorders and cardiovascular diseases) were closely related to hypertension. Sedentary life style, consumption of alcohol, smoking were not significant factors. This could be attributed to the way of life of the rural women as the number of alcoholics and smokers was found to be very low. Hypertension was not related to obesity in the population as more than 90% of them were underweight, similar to the studies, where high prevalence was seen among the underweight people.²²

CONCLUSION

Hypertension is a disease, not just restricted to old age, it is a growing problem even among the women of reproductive age group. Extra salt intake, family history and underlying medical conditions were the major risk factors. The study suggests that knowledge, awareness on hypertension in women in this part of the district is poor and the prevalence is high with around half of the study population (44.5%) being in the prehypertensive phase

and their life style practices are grossly contributing to it. Therefore, efforts should be geared towards improving the levels of awareness of the women in general, hypertensive patients in particular through adequate education, information and communication.

ACKNOWLEDGEMENTS

We would like to thank Mrs. Anuradha Hazarika Medhi for her help and support. We also acknowledge the support received from ICMR under STS program for carrying out this research work.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Kearney PM, Whelton M, Reynolds K, He J. Worldwide prevalence of hypertension: a systematic review. *J Hypertension*. 2004;22(1):11-9.
2. World Health Organizations, "Global brief on hypertension", 2013. Available at: <http://apps.who.int/bitstream/10665/79059/1/WHO-DCO-WHD-2013,2-eng.pdf?ua=1>. Accessed on 3 May 2017.
3. Rigaud AS, Seux ML, Staessan JA, Birkenhager WH, Forette F. Cerebral complications of hypertension. *J Hum Hypertens*. 2000;14:606-16.
4. Gupta R, al-Odat NA, Gupta VP. Hypertension epidemiology in India: meta-analysis of prevalence, awareness and control of Hypertension". *J Hypertens*. 2014;32:1170-7.
5. Ezzati M, Zhou B, Riley L, Stevens GA, Hajifathalian K, Danaei G on behalf of the NCD Risk Factor Collaboration. Challenges of monitoring global diabetes prevalence. *Lancet Diabetes & Endocrinol*. 2017;5:162.
6. Kearney PM, Whelton M, Reynolds K, Muntner P, Whelton PK, He J. Global Burden of worldwide data, *Lancet*. 2005;365:217-23.
7. Alwan. A Global status Report on non-communicable disease. 2010. Geneva: World Health Organization, 2011.
8. Wang PS, Bohn RL, Knight E. Non-Compliance with antihypertensive medications: The impact of depressive symptoms and psychosocial factors. *J Gen Intern Med*. 2002;17:504-11.
9. Oke DA, Bandele EO. Misconceptions of hypertension. *J Natl Med Assoc*. 2004;96:1221-4.
10. Sen S. Tribes and castes of Assam. Guwahati: Gyan Publishing House; 1999: 121-171.
11. Mishra PJ, Mini GK, Thankappan KR. Risk factor profile for non-communicable diseases among Mishing tribes in Assam, India: Results from a WHO STEPs survey. *Indian J Med Res*, 2014;140:370-8.

12. Annual Health Survey Report, Assam factsheet. 2011-12: 54-55.
13. Joint National Committee on prevention, detection, evaluation and treatment of high blood pressure. The Seventh report of the joint national committee on the prevention, detection, evaluation and treatment of high blood pressure. JNC-VII.2004.
14. Samuel AO, Rahab K. Awareness, Practices, and prevalence of hypertension among rural Nigerian women. *Arch Med Health Sci*. 2014;2(1):23-8.
15. Yadav S, Boddula S, Genitta G, Bhatia V, Bansal B, Kongara S. Prevalence and risk factors of pre-hypertension and hypertension in affluent north Indian population. *Indian J Med Res*. 2008;128:712-20.
16. Bharati DR, Nandi P, Yamuna TV, Lokeshmaran A, Agarwal L, Singh JB, et al. Prevalence and covarieties of undiagnosed hypertension in the adult population of puducherry, South India. *Nepal J Epidemiol*. 2012;2(2):191-9.
17. Chandrasekhar R, Basagoudar S. Study of Hypertension and its risk factors among women of reproductive age group. *Int J Cur Res Rev*. 2013;5(22):27-32.
18. Naidu SA, Nayak MSDP, Sadi N. Prevalence of hypertension among reproductive age group tribal women in Vishakhapatnam district, Andhra Pradesh, India. *Int J Res Med Sci*. 2016;4(4):1224-8.
19. Thawornchiasit P, Looze F, Reid CM, Seubsmann S, Sleigh AC. Health risk factors and the incidence of hypertension. 4-year prospective findings from a national cohort of 60569 Thai Open University students. *BMJ Open*. 2013: 1-10.
20. Sidhu S, Kumari K, Prabhjot. Sociodemographic variables of hypertension among adult Punjabi females. *J Hum Ecol*. 2005;17(3):211-5.
21. Hazarika NC, Narain K, Biswas D, Kalita HC, Mahanta J. Hypertension in the native rural population of Assam. *National Med J India*, 2004;17(6):300-4.
22. Hazarika NC, Biwas D, Narain K, Kalita HC, Mahanta J. Hypertension and its risk factors in tea garden workers of Assam. *National Med J India*. 2002;15(2):63-8.

Cite this article as: Singh N, Rahman SJ. A study on the prevalence and awareness of hypertension among women in the reproductive age group and the factors contributing to it in a rural area of Jorhat district, Assam. *Int J Community Med Public Health* 2017;4:3473-8.