Original Research Article

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20183009

Awareness regarding raised blood pressure among adult population of an urban area of Puducherry

Murugan N.¹, Amit Kumar Mishra¹*, Ramesh Chand Chauhan², Manikandan M.¹, Velavan A.¹

Received: 01 June 2018 Revised: 16 July 2018 Accepted: 17 July 2018

*Correspondence: Dr. Amit Kumar Mishra,

E-mail: dramitvss@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Many people with high blood pressure in developing countries are not aware of their blood pressure status. This study was done to assess the awareness regarding hypertension among urban residents of Puducherry.

Methods: This community based cross-sectional study was conducted in an urban area of Puducherry. All selected household were visited and the available subjects at that time were interviewed. Blood pressure was measured by using OMRON digital automatic blood pressure monitor. Descriptive statistics used to characteristic the distribution of the study respondents.

Results: Among a total of 569 participants, 25.3% were hypertensive. The prevalence of hypertension was almost equal among male (26.4%) and female (24.1%). Among 144 study participants with hypertension, 74 (51.4%) were aware of their raised blood pressure whereas 70 (48.6%) were identified first time as hypertensive during the study. Majority (87.3%) of study participants responded that they were aware of a condition known as raised blood pressure, although 27.6% participants reported that their blood pressure was never measured by a doctor.

Conclusions: Almost one-fourth of study population was hypertensive and the awareness regarding the same was not satisfactory.

Keywords: Raised blood pressure, Awareness, Stress, Hypertension

INTRODUCTION

Hypertension, also known as high or raised blood pressure, is a global public health issue. Raised blood pressure is estimated to have caused 9.4 million deaths and 7% of disease burden in a year. Different studies show that for every known case of hypertension there are two persons with either pre hypertension or undiagnosed hypertension. If left uncontrolled, hypertension causes stroke, myocardial infarction, cardiac failure, dementia, renal failure and blindness. The global prevalence of raised blood pressure (defined as systolic and/or diastolic blood pressure equal to or above 140/90 mmHg) in adults aged 18 years and over was around 22% in 2014. As per

Global health statistics report 2013 in India, 23.1% men and 22.6% women over 25 years suffer from hypertension. Studies in different regions of India showed that the prevalence of hypertension ranges from 20 to 40% among urban adults and 12 to 17% among rural adults and the number of persons with hypertension is projected to increase from 118 million in 2000 to 214 million in 2025.

Many people with high blood pressure in developing countries are not aware of their disease, and do not have access to treatments that could control their blood pressure and significantly reduce their risk of death and disability from heart disease and stroke. The objective of

¹Department of Community Medicine, Pondicherry Institute of Medical Sciences, Kalapet, Pondicherry, India

²Department of Community and Family Medicine, AIIMS, Bhopal, Madhya Pradesh, India

the present study was to assess the awareness regarding raised blood pressure among adult population of an urban area of Puducherry.

METHODS

This community based cross-sectional study was conducted in an urban area of Puducherry. The study area with an approximate population of twelve thousand is the field practice area of Department of Community Medicine, of a teaching medical institute in Puducherry. After providing participant information sheet (in local language) and explaining about the study purpose and procedures, informed written consent was obtained from all subjects.

Sample size calculation

The sample size for the study was calculated by using the formula, $n=4q/e^2p$, Where p=prevalence of hypertension, q=(1-p), and e=0-precision. Considering the prevalence of hypertension among adults of an urban area as 33.6% as reported by Chethana et al in their study in South India with 95% level of significance and precision (e) of 12%, the sample size calculated was 549.

Sampling technique

A particular area of the field practice area of Urban Health Centre, Department of Community Medicine was selected randomly. Universal sampling method was adopted to include all the adults permanently residing at the selected area. All the households of the selected area were visited and the available subjects at that time were interviewed. If nobody was present in the household during the first visit, the students revisited the households to include all individuals for maximum coverage.

Data collection

During Re-Orientation of Medical Education (ROME) posting in the month of February 2013, 6th semester MBBS students, with support, guidance and supervision of interns, postgraduate students and faculty from Department of Community Medicine collected the data. All the students were given training for data collection including taking informed consent, administering questionnaire, interview techniques, and proper physical measurements. Each selected household was visited and the available subjects at that time were interviewed. If nobody was present in the household during the first visit, the student revisited it. For quality assurance of collected data, random checks for 10% of the collected data were done by postgraduate students and faculty. Blood pressure was measured by using OMRON digital automatic blood pressure monitor. The average of the three readings taken 5 min apart was used for analysis.

Operational definitions

Raised blood pressure or hypertension was defined as systolic blood pressure (SBP) of \geq 140 mmHg or diastolic blood pressure (DBP) \geq 90 mmHg. Any participant diagnosed with hypertension in the past (with raised blood pressure or systolic blood pressure of <140 mmHg or diastolic blood pressure <90 mmHg and on antihypertensive medication during the study) was considered as a known case of hypertension. Study participants diagnosed with raised blood pressure for the first time during the study period were considered as newly diagnosed hypertensive cases.

Statistical analysis

Data was entered in the Microsoft excel 2010 and data analysis was carried out by SPSS version 20. Descriptive statistics was used to present the results of the study participants.

RESULTS

Among a total of 569 participants, 25.3% were hypertensive. The prevalence of hypertension was almost equal among male (26.4%) and female (24.1%). Among 144 study participants with hypertension, 74 (51.4%) were aware of their raised blood pressure whereas 70 (48.6%) were identified first time as hypertensive during the study (Table 1). Among 74 participants with known hypertension; 10, 25, 20 and 19 participants were diagnosed during past one year, 1-4 years, 5-9 years and ≥10 years respectively.

Table 1: Description of raised blood pressure among study participants (n=569).

Raised blood pressure	Female n (%)	Male n (%)	Total n (%)
Known case of hypertension	39 (14.2)	35 (11.9)	74 (13)
Newly diagnosed cases	27 (9.9)	43 (14.5)	70 (12.3)
No	208 (75.9)	217 (73.6)	425 (74.7)
Total	274	295	569

Knowledge about raised blood pressure (n=569): Majority (87.3%) of study participants responded that they were aware of a condition known as raised blood pressure, although 27.6% participants reported that their blood pressure was never measured by doctor. Among 412 participants, whose blood pressure was ever measured, only 30% reported to have their blood pressure measured during last one year.

Adherence to antihypertensive medications (n=74): Among 74 participants with known hypertension, 69 (93.2%) reported to take one or other treatment advised by the doctor whereas 5 (6.8%) participants were not taking any treatment currently. Among known hypertensive taking treatment, majority (97.1%) reported

to take allopathic treatment, 16 (23.2%) were following dietary modification, 3 (4.4%) were practicing traditional therapy include Yoga, Ayurveda, Unani, Homeopathy, Tibetan and Naturopathy etc. and 10 (14.5%) were doing the physical exercise. At the time of diagnosis, 10 (13.5%) of the known hypertensive were smokers; and following advice from the doctor, 3 participants stopped smoking.

Among 67 participants reported to take medicines as treatment, 54 (80.6%) were taking regular treatment, 3 (4.5%) missed medicine occasionally, 5 (7.5%) takes medicine when they feel that their blood pressure is high and 5 (7.5%) discontinued the treatment for more than 1 month on one or more occasions. Among 5 participants, who stopped the antihypertensive medicines for more

than month, 3 stopped due to lack of money to buy the medications or paying fees to the doctor whereas 2 reported that they go for work at the same time when they are supposed to visit the doctor.

Among the 74 individuals with raised blood pressure, majority (68.9%) felt that there blood pressure is under control whereas 23 (31.1%) felt that there blood pressure in not in control. Further, 31 (41.9%) were informed by the doctor that there blood pressure is not in control. Regarding last visit to the doctor, 40 (54.1%) reported to visited the doctor during past one month whereas 14 (18.9%) reported that they have visited the doctor during past 6 months. Further, 30 (40.5%) of participants were having the prescription at the time of interview.

Table 2: Awareness about raised blood pressure/hypertension and its risk factors.

Characteristics			Response	
			%	
Aware of a condition called high blood	Yes	497	87.3	
pressure	No	72	12.7	
Blood pressure ever measured by the doctor	Yes	412	72.4	
	No	157	27.6	
Told by a doctor or other health worker in the last 12 months that you have raised blood pressure or hypertension		112	19.7	
Causes of High BP (Multiple response question)	Decreased physical Activities	15	2.6	
	Tobacco consumption	16	1.8	
	Alcohol consumption	21	3.6	
	Stress	188	33.0	
	Unhealthy food	39	6.8	
	Religious reason	0	0	
	Genetic/family history	06	1.5	
	Obesity	25	4.3	
Sedentary life and blood pressure	Decrease risk	74	13.0	
	Increase risk	241	42.4	
	No Influence	71	12.5	
	None of the above	183	32.2	
High fiber diet is good for blood pressure, diabetes and high cholesterol?	Yes	258	51.9	
	No	67	13.4	
	Maybe	172	34.6	
Aware of relationship between dietary salt and high blood pressure	Yes	348	70.0	
	No	62	12.4	
	Maybe	87	17.6	
Taking tobacco lead to	Maintain BP	46	9.3	
	Increase BP level	303	61.0	
	None of the above	148	29.7	
Alcohol lead to	Increase BP level	260	52.4	
	Decrease HBP	49	9.8	
	No effect HBP	188	37.8	
Yoga, Pranayama, non-yoga exercise or	Yes	331	66.7	
sports and high BP have any relations?	No	166	33.3	

KAP on hypertension

In among 569 participants, majority (87.3%) of the participants were aware of condition called raised blood

pressure whereas another 12.7% of the participants reported to be unaware of the same. Almost one-fourth, (27.6%) of the participants reported that their blood pressure was never measured in past. One-fifth (19.7%)

of the participants reported that they were told by a doctor or other health worker in the last 12 months to have raised blood pressure or hypertension. Seventy four (13%) participants reported to have raised blood pressure during the survey.

Knowledge regarding the risk factors of hypertension: Regarding the causes of raised blood pressure, 33% responded that stress is the common risk factor for high blood pressure, followed by unhealthy diet (6.8%). Majority of the participants (57.6%) were not aware that sedentary life style leads to increase in the blood pressure. Majority (51.9%) were aware that high fibre diet is good for BP, diabetes and high cholesterol. Majority (70%) of them were aware that dietary salt and high blood pressure have relationship and (61%) of them were aware of tobacco leads to increase the blood pressure level. More than half (52.4%) were aware about alcohol leads to increase in the BP levels and (66.7%) of them responded that yoga, pranayama, non-yoga exercises or sports and high blood pressure having relationship.

DISCUSSION

The present study was conducted in the urban field practice area of Department of Community Medicine of a Medical College in Puducherry. In the current study the prevalence of hypertension/raised blood pressure is found to be 25.3%, which is almost equally distributed among males (24.1%) and females (26.4%). The prevalence is lower than the prevalence reported by another studies in India. 9-13 In contrast to the equal distribution hypertension among males and females in the current study¹⁰, a study in South India reported higher prevalence of hypertension among males than females. Among 569 participants, 87.3% reported to be aware of condition called raised blood pressure. The findings are similar to study conducted in Mongolia.¹⁴ In the current study 27.6% participants said that their blood pressure was never measured in past. Only one-fifth (19.7%) of the participants reported that they were informed by the doctor sometimes within the last 12 months about their blood pressure and a total of 74 (51.4%) participants reported to have raised blood pressure at the time study. During the study 70 (48.6%) persons were newly diagnosed with hypertension, the findings are close to the proportion reported in a study by Chethana et al. In the present study, 19.7% of the study participants were aware of their blood pressure. Similar awareness was observed in a study conducted in Bengal where 17% of the participants were aware of their blood pressure levels/ status. 15 In the present study, 19.4% participants were not compliant to treatment, and this is similar to the compliance observed in other studies.¹⁶

CONCLUSION

Hypertension is emerging as a major public health problem in many developing countries undergoing epidemiological transition including India; it is essential to gather both epidemiological and KAP data on hypertension as crucial steps in the design of sound prevention and control programs.

ACKNOWLEDGEMENTS

The authors would like to thank the medical students for their contribution for collecting the data during the ROME posting and study participant for their valuable time.

Funding: No funding sources Conflict of interest: None declared

Ethical approval: The study was approved by the

Institutional Ethics Committee

REFERENCES

- 1. Lim SS, Vos T, Flaxman AD, Danaei G, Shibuya K, Adair-Rohani H, et al. A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet (London, England). 2012;380(9859):2224–60.
- Joshi SR, Saboo B, Vadivale M, Dani SI, Mithal A, Kaul U, et al. Prevalence of diagnosed and undiagnosed diabetes and hypertension in India-Results from the Screening India's Twin Epidemic (SITE) study. Diabetes Technol Ther. 2012;14:8-15.
- 3. A global brief on hypertension. Silent killer, global public health crisis. Geneva: World Health Organization. 2013.
- 4. World health statistics report. New data highlight increases in hypertension, diabetes incidence. Geneva: World Health Organization; 2012.
- 5. World Health Organization. Raised blood pressure. Geneva: World Health Organization; 2012.
- WHO. Global status report on non-communicable diseases 2014. World Health. 2014: 176.
- 7. World Health Organization. World health statistics report. Geneva: World Health Organization; 2013.
- 8. Reddy KS. Regional case studies--India. Nestle Nutr Workshop Ser Pediatr Program. 2009;63:15-24.
- 9. Chethana KV, Anusha T, Mane A, Prasad VM, Sunkad VM. Prevalence of hypertension and its risk factors among adults in urban field practice area NMC, Raichur, Karnataka, India. Int J Community Med Public Health 2017;4:45-50.
- Paul PJ, Samson R, William A, Akila B, Purty AJ, Bazroy J. Prevalence and factors associated with hypertension: a community based cross-sectional study among adults in an urban area of Puducherry, South India. Int J Community Med Public Health 2017;4:1620-6.
- 11. Gupta R. Trends in hypertension epidemiology in India. J Human Hypertension. 2004;18:73-8.
- Vimala A, Ranji SA, Jyosna MT, Chandran V, Mathews SR, Pappachan JM. The Prevalence, Risk

- Factors and Awareness of Hypertension in an Urban Population of Kerala (South India). Saudi J Kidney Dis Transpl. 2009;20(4):685-9.
- Bharati DR, Nandi P, Yamuna TV, Lokeshmaran A, Agarwal L, Singh JB, et al. Prevalence and Covariates of Undiagnosed Hypertension in the Adult Population of Puducherry, South India. Nepal J Epidemiol. 2012;2(2):191-9.
- 14. Demaio AR, Otgontuya D, de Courten M, Bygbjerg IC, Enkhtuya P, Meyrowitsch DW, et al. Hypertension and hypertension-related disease in mongolia; findings of a national knowledge, attitudes and practices study. BMC Public Health. 2013;13(1):194.
- 15. Sadhukhan SK, Khan S. Blood Pressure Awareness among General Population: a Rural West Bengal Experience With Logistic Regression. Natl J Med Res. 2012;2(1):55–8.
- 16. Babiker FA, Elkhalifa LA, Moukhyer ME. Awareness of hypertension and factors associated with uncontrolled hypertension in Sudanese adults. Cardiovasc J Afr. 2013;24(6):208–12.

Cite this article as: Murugan N, Mishra AK, Chauhan RC, Manikandan M, Velavan A. Awareness regarding raised blood pressure among adult population of an urban area of Puducherry. Int J Community Med Public Health 2018;5:3321-5.