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Prevalence of Hypertension and Perception of Patients Towards Hypertension Treatment Adherence, Follow-Up and Complications in Urban Slums and Rural Areas of Aurangabad District

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Abstract

Background: Hypertension is a condition with its own risk factors, such as Non-modifiable risk factors and Modifiable risk factors By using effective drug treatment and accurate steps for Modifiable risk factors, a person can attain better control of hypertension. One of the Important factors for poor control of hypertension is a lack of knowledge of hypertension and risk factors. Conversion of knowledge into Practice again are major problem in Rural population

Methods: This was a community-based observational study conducted in rural and urban working areas of a tertiary care hospital in Aurangabad district, Maharashtra. Search for the patients newly diagnosed taking treatment was done by MBBS students by house-to-house visit. Interview were done using pre structured pre-designed questionnaire.

Results: Total Prevalence of hypertension among screened population was found to be 6.34%. Overall Prevalence of hypertension in Male was 5.04% & in Female 7.87%. The total number of participants enrolled was 505. There were 217 (42.9%) Male and 288(57.1%) Female participants. Most of the percentage of participants from urban area (53.3%) showed good practice. A slightly higher proportion of poor practice was observed in rural participants (66.7%),

Conclusion: Patients with **better knowledge** tended to exhibit **better attitudes and practices** toward hypertension management, highlighting the importance of health education. Specifically, Female participants, Lower educational status, lower Socioeconomic Status, and Participants residing in rural areas show poor Knowledge Scores. The longer the duration of hypertension, the stronger the association with good practice score those with hypertension for >10 years had no poor scores.

Key words – Knowledge score, Practice score, hypertension

INTRODUCTION

Around 1.28 billion adults aged over 30 years globally suffer from hypertension, with the majority (two-thirds) residing in low- and middle-income countries. Approximately 46% of these adults are unaware they have the condition. Furthermore, less than half (42%) are diagnosed and treated. Only about 1 in 5 adults (21%) with hypertension manage to control it. Hypertension significantly contributes to premature mortality worldwide. A global objective for noncommunicable diseases aims to decrease the prevalence of hypertension by 33% from 2010 to 2030. [1]

Hypertension is a condition with its own risk factors, such as Non-modifiable risk factors (Age, Sex, Genetic factors, ethnicity) and Modifiable risk factors (Obesity, Salt Consumption, Saturated fat, Dietary fibre, Alcohol consumption, Physical Inactivity, Environmental Stress, and Others). By using effective drug treatment and accurate steps for Modifiable risk factors, a person can attain better control of hypertension.

One of the Important factors for poor control of hypertension is a lack of knowledge of hypertension and risk factors. There is a considerable body of information describing knowledge about hypertension in high-income countries. [2-4]. However, in low- to middle-income countries, where the largest burden of hypertension occurs [5], there are few data about knowledge of hypertension, particularly in rural populations. [6]

Medication adherence is defined as the extent to which a person's behaviour coincides with the agreed-upon medication regimen or health advice from a healthcare provider. [7]. There are multiple studies conducted in India, varying in different adherence rates to the medication for hypertensive medication and multiple factors such as lower SES, Health Literacy, asymptomatic nature of the Disease, forgetfulness, cost of medication, and duration of hypertension [7]. The adherence to medication for hypertension may vary from person to person. Hypertension is a disease that needs lifelong treatment. We observed that patients lack knowledge about hypertension, treatment, follow-up, and treatment adherence while working in different health centres.

So, we decided to study the perception of hypertensive patients towards adherence to treatment, follow-up, and complications in urban slums and rural areas of the Aurangabad district.

AIM

To study the prevalence of hypertension and perception towards adherence to treatment, follow-up, and complications in urban slums and rural areas of the Aurangabad district

OBJECTIVE

1. To evaluate the prevalence of hypertensive patients in urban slums and rural areas
2. To understand the factors affecting adherence to the treatment of hypertensive patients towards their treatment and follow-up routines.
3. To identify factors influencing the knowledge, attitudes, and practices of hypertensive patients regarding follow-up and complications.
4. To provide recommendations to improve patient education and awareness.

MATERIAL AND METHODS

Study design

This was a community-based observational study conducted in rural and urban working areas of a tertiary

care hospital in Aurangabad district, Maharashtra.

Study Duration: Dec 2024 to Feb 2025

Identification of Study area and population: Tertiary care hospital working areas 4 urban slums and 4 rural areas were selected randomly. Search for the patients newly diagnosed taking treatment was done by MBBS students by house to house visit. Interview were done using pre structured pre-designed questionnaire.

Inclusion Criteria

- Patients of both genders,
- Patients above 18 years of age
- Patients who were diagnosed with hypertension 6 months before
- Patients willing to participate in the study.

Exclusion Criteria

- Pregnant & lactating women
- Secondary hypertensive patients (chronic glomerulonephritis, Cushing's syndrome, pheochromocytoma, hyperthyroidism)

Sample size:

Sample size was calculated using "statistics and sample size calculator" considering P=0.25, Confidence level set at 0.95, Z value at 1.96, and Absolute precision considered to be 0.04. The Sample Size calculated was 451.

Sampling technique: Selecting villages and slum areas randomly. Searching for hypertensive patients by a house-to-house survey. Data analysis was done by SPSS. Permission from the Institutional Ethical Committee was duly taken. All rights to the privacy of the study participant will be preserved accord.

Statistical analysis Data was compiled in MS-EXCEL Sheet and for analysis of this data SPSS (Statistical package for social sciences) Version 20th was used. Standardization of Knowledge and Practice Score was done in a pilot study. A two-sided p value of less than 0.05 was considered to be statistically significant. Categorical Variables were presented as frequency (percentage [%]) & assessed using Pearson $\chi 2$.

RESULTS

Total Population screened in Urban (3349) & Rural (4606) area was 7955. Total Prevalence of hypertension among screened population was found to be 6.34%.

Overall Prevalence of hypertension in Male was 5.04% & in Female 7.87%

Prevalence of Hypertension in Rural area 5.2% i.e.(Male 3.6%, Females 7.59%) Prevalence of hypertension in Urban area 7.79% (Male 7.34%, Females 8.23%)

Table no. 1 Socio-Demographic Distribution of Participants According to gender

		Gender of the Patient		
		Male (217)	**Female (288)**	**Total (505)**
Age Group	**Early-Onset Hypertension (age <35 yrs)**	6 (2.8%)	13 (4.5%)	19 (3.8%)
	Middle-Aged Hypertension (age 36 to 59 yrs)	96 (44.2%)	119 (41.3%)	215 (42.6%)

	Old age Hypertension (age >60 yrs)	115 (53.0%)	156 (54.2%)	271 (53.7%)
Religion of the Patient	**Christian**	1 (0.5%)	0	1 (0.2%)
	Hindu	183 (84.3%)	237 (82.3%)	420 (83.2%)
	Muslim	31 (14.3%)	48 (16.7%)	79 (15.6%)
	Other	2 (0.9%)	3 (1.0%)	5 (1.0%)
Residence of Patient	**Rural area**	96 (44.2%)	148 (51.4%)	244 (48.3%)
	Urban area	121 (55.8%)	140 (48.6%)	261 (51.7%)
Education of the Patient				
	Illiterate	29 (13.4%)	117 (40.6%)	146 (28.9%)
	Primary School	34 (15.7%)	62 (21.5)	96 (19.0%)
	Middle School	38 (17.5%)	45 (15.6%)	83 (16.4%)
	Highschool	49 (22.6%)	38 (13.2%)	87 (17.2%)
	Diploma	10 (4.6%)	7 (2.4%)	17 (3.4%)
	Graduate	40 (18.4%)	14 (4.9%)	54 (10.7%)
	Post graduate	17 (7.8%)	5 (1.7%)	22 (4.4%)
Socio-economic status of the Patient	**I**	37 (17.1%)	43 (14.9%)	80 (15.8%)
	II	82 (37.8%)	78 (27.1%)	160 (31.7%)
	III	64 (29.5%)	96 (33.3%)	160 (31.7%)
	IV	26 (12.0%)	59 (20.5%)	85 (16.8%)
	V	8 (3.7%)	12 (4.2%)	20 (4.0%)
Duration of Hypertension	**6 months to <1 year**	32 (14.7%)	47 (16.3%)	79 (15.6%)
	1-5 years	80 (36.9%)	111 (38.5%)	191 (37.8%)
	5-9 years	42 (19.4%)	63 (21.9%)	105 (20.8%)
	>10 years	63 (29.0%)	67 (23.3%)	130 (25.7%)

The total number of participants enrolled was 505. The age was further divided into three categories: early onset hypertension (<35 yrs), Middle age hypertension (age between 36-59 yrs), and Old age hypertension (> 60 yrs). There were 217 (42.9%) Male and 288(57.1%) Female participants. Among all the participants, the maximum number of participants belonged to the old age hypertension (271, 53.7%) as compared to Middle age hypertension (215, 42.6%) and early onset hypertension (19,3.8%). As per the residence of the participants, the maximum number of participants belonged to the urban Area (261, 51.7 %) as compared to the rural area (244, 48.3%). Most of the illiterate participants were residents of Rural areas (104, 71.2%) as compared to urban areas (42, 28.8%). The average monthly income of the participants was 31669 INR. The maximum number of participants belonged to the Upper Middle and Lower Middle Class (160, 31.7 % each), the Upper Lower class (58, 16.8%), the Upper class (80, 15.8%), and the lower class (20, 4.0%) as per the revised modified Kuppuswamy classification for Jan 2025. The duration of hypertension of participants was classified into 4 subcategories: 6 months to <1 year, 1-5 years, 5-9 years, and more than 10 years.

Table no.2 Various sociodemographic variables according to Hypertension Knowledge Score

		Knowledge Score				Chi-Square Tests
		Good (11-15) 97	Average (6-10) 158	Poor (0-5) 250	Total 505	
Age Group	Early-Onset Hypertension (age <35 yrs)	2 (2.1%)	8 (5.1%)	9 (3.6%)	19 (3.8%)	0.307 (NS)
	Middle-Aged Hypertension (age 36 to 59 yrs)	44 (45.4%)	74 (46.8%)	97 (38.8%)	215 (42.6%)	
	Old age Hypertension (age >60 yrs)	51 (52.6%)	76 (48.1%)	144 (57.6%)	271 (53.7%)	
Gender of the Patient	Female	45 (46.4%)	73 (46.2%)	170 (68.0%)	288 (57.0%)	0.000 (VHS)
	Male	52 (53.6%)	85 (53.8%)	80 (32.0%)	217 (43.0%)	
Education of the Patient	Illiterate	10 (10.3%)	25 (15.8%)	111 (44.4%)	146 (28.9%)	0.000 (VHS)
	Primary School	19 (19.6%)	25 (15.8%)	52 (20.8%)	96 (19.0%)	
	Middle School	13 (13.4%)	35 (22.2%)	35 (14.0%)	83 (16.4%)	
	Highschool	16 (16.5%)	36 (22.8%)	35 (14.0%)	87 (17.2%)	
	Diploma	5 (5.2%)	9 (5.7%)	3 (1.2%)	17 (3.4%)	
	Graduate	24 (24.7%)	20 (12.7%)	10 (4.0%)	54 (10.7%)	
	Post graduate	10 (10.3%	8 (5.1%)	4 (1.6%)	22 (4.4%)	
Residence of Patient	Rural area	25 (25.8%)	57 (36.1%)	162 (64.8%)	244 (48.3%)	0.000 (VHS)
	Urban area	72 (74.2%)	101 (63.9%)	88 (35.2%)	261 (51.7%)	
Socio-economic status of the Patient	I	18 (18.6%)	20 (12.7%)	42 (16.8%)	80 (15.8%)	0.002 (HS)
	II	37 (38.1%)	51 (32.3%)	72 (28.8%)	160 (31.7%)	
	III	29	61	70	160	

		(29.9%)	(38.6%)	(28.0%)	(31.7%)	
	IV	7 (7.2%)	26 (16.5%)	52 (20.8%)	85 (16.8%)	
	V	6 (6.2%)	0	14 (5.6%)	20 (4.0%)	
Duration of Hypertension	**6 months to <1 year**	13 (13.4%)	23 (14.6%)	43 (17.2%)	79 (15.6%)	**0.056 (S)**
	1-5 years	29 (29.9%)	66 (41.8%)	96 (38.4%)	191 (37.8%)	
	5-9 years	17 (17.5%)	35 (22.2%)	53 (21.2%)	105 (20.8%)	
	>10 years	38 (39.2%)	34 (21.5%)	58 (23.2%)	130 (25.7%)	

The grade of knowledge was considered good, average, and poor if the participants scored 11-15, 6-10, and 0-5, respectively. As the age of the participants increases, the knowledge related to hypertension increases i.e., old age hypertension >60 yrs of age had the highest percentage (52.6%) of good knowledge as compared to the other age groups. There was no statistically significant association between age group and knowledge scores (p = 0.307). This suggests that knowledge about hypertension is not strongly influenced by age. While comparing the gender with knowledge of hypertension, males had a higher percentage in the good knowledge score (53.6%). A statistically significant association was observed between gender and knowledge score (p = 0.000). When the religion of the patient is considered, no significant relationship was found between religion and knowledge score (p = 0.222), As the Education of the participants increases Knowledge score is also increases. Most of the participants score good in knowledge score were educated up to graduate (24.7%) and post graduate (10.3%). A highly significant association was found between educational status and knowledge score (p = 0.000). Participants with higher educational attainment (graduate and postgraduate) had better knowledge, while the majority of illiterate participants (44.4%) had poor knowledge. This emphasizes the role of education in health awareness and literacy. The urban place of residence showed the better knowledge (good- 74.2%) were as rural residence of participants show the poor (64.8 %) knowledge. The place of residence showed a strong association with knowledge level (p = 0.000). This reflects the urban–rural divide in access to health information and awareness. A statistically significant association was found between SES and knowledge scores (p = 0.002). There was a trend suggesting that participants with a longer duration of hypertension (>10 years) had slightly better knowledge. This may imply that prolonged exposure to the disease increases opportunities for education and awareness

Table 3: Various sociodemographic variables according to Hypertension Practice Score

		Good (11-16) 400	**Average (6-10) 99**	**Poor (0-5) 6**	**Total 505**	
Age Group	**Early-Onset Hypertension (age <35 yrs)**	12 (3.0%)	7 (7.1%)	0	19 (3.8%)	**.085 (NS)**

	Middle-Aged Hypertension (age 36 to 59 yrs)	167 (41.8%)	43 (43.4%)	5 . (83.3%)	215 (42.6%)	
	Old age Hypertension (age >60 yrs)	221 (55.3%)	49 (49.5%)	1 (16.7%)	271 (53.7%)	
Gender of the Patient	**Female**	230 (57.5%)	55 (55.6%)	3 (50.0%)	288 (57.0%)	**.885 (NS)**
	Male	170 (42.5%)	44 (44.4%)	3 (50.0%)	217 (43.0%)	
Religion of the Patient	**Christian**	1 (0.3%)	0	0	1 (0.2%)	**.003 (HS)**
	Hindu	339 (84.8%)	77 (77.8%)	4 (66.7%)	420 (83.2%)	
	Muslim	58 (14.5%)	20 (20.2%)	1 (16.7%)	79 (15.6%)	
	Other	2 (0.5%)	2 (2.0%)	1 (16.7%)	5 (1.0%)	
Residence of Patient	**Rural area**	187 (46.8%)	53 (53.5%)	4 (66.7%)	244 (48.3%)	**.320 (NS)**
	Urban area	213 (53.3%)	46 (46.5%)	2 (33.3%)	261 (51.7%)	
Duration of Hypertension	**6 months to <1 year**	51 (12.8%)	25 (25.3%)	3 (50.0%)	79 (15.6%)	**.003 (HS)**
	1-5 years	157 (39.3%)	31 (31.3%)	3 (50.0%)	191 (37.8%)	
	5-9 years	81 (20.3%)	24 (24.2%)	0	105 (20.8%)	
	>10 years	111 (27.8%)	19 (19.2%)	0	130 (25.7%	

Socioeconomic status and Education were non significant with respect to Practice score.

Table No. 4 shows Association of Practice Score with the sociodemographic profile of participants.
The grade of knowledge was considered good, average, and poor if the participants scored 11-16, 6-10, and 0-5, respectively.
While considering the age group, old age hypertension shows the maximum proportion with good practice score (55.3%) as compared to other groups. All participants with poor scores were middle-aged and older, indicating that younger patients may be more adaptable or less represented. Age Group was found to be not statistically significant($p = 0.085$). The maximum percentage of females showed good practice (57.3%), although their knowledge was poor. Both males and females are similarly distributed across the good, average, and poor categories. When the p value was calculated ($p = 0.885$), no significant association between gender and practice score was obtained. A significant association exists between religion and

practice score (p = 0.003).Hindu participants had the highest good scores (84.8%) but were also spread across other categories.They were having higher number of participants also.

No statistically significant, but a clear trend is observed (p = 0.078) in the education of participants with practice. Higher education correlates with better practice score .0% of graduates/postgraduates scored poorly.66.7% of those with poor scores were illiterate.

Socio-Economic Status in relation to practice score was also not significant.

Most of the percentage of participants from urban area (53.3%) showed good practice. A slightly higher proportion of poor practice was observed in rural participants (66.7%), suggesting geographical disparities may exist, but are not conclusive. Not significant (p = 0.320).

The longer the duration of hypertension, the stronger the association with good practice score those with hypertension for >10 years had no poor scores. Poor scores were more common in newly diagnosed individuals (<1 year).This suggests health behaviour improves with disease experience and repeated medical exposure.

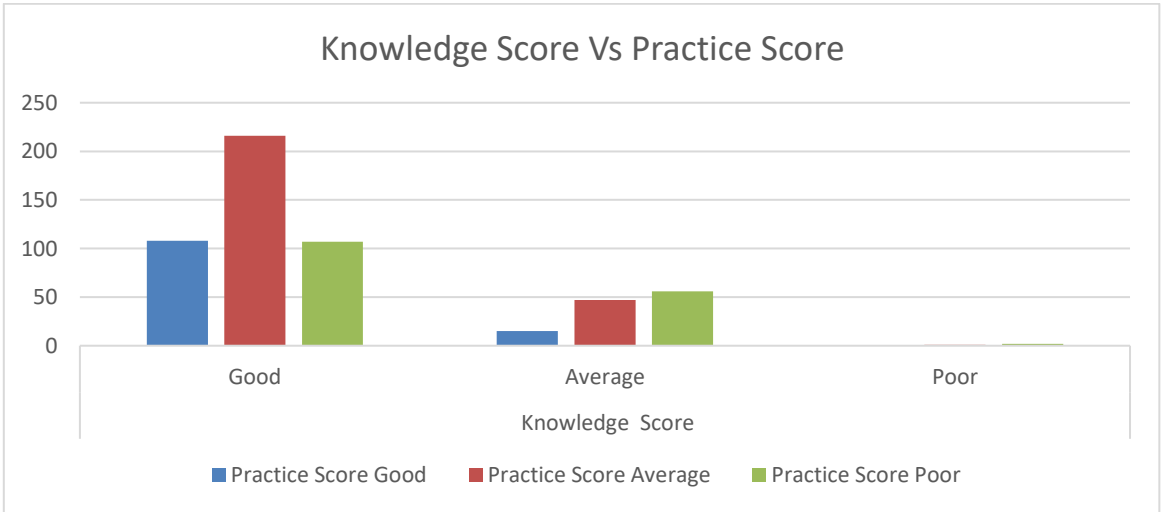
Table 4: Association between Hypertension Knowledge score & Hypertension Practice Score

	Practice Score								
Knowledge Score	**Poor**	182	45.5	63	63.6	5	83.3	250	49.5	**.005 (HS)**
	Average	131	32.8	26	26.3	1	16.7	158	31.3	
	Good	87	21.8	10	10.1	0	0.0	97	19.2	
	Total	400	100.0	99	100.0	6	100.0	505	100.0	

Pearson Correlation Coefficient between Knowledge & Practice score was 0.272 which was statistically very significant (p=0.000)

When the Knowledge Grade was compared with practice score, it was found that statistically significant (p = 0.005). A strong correlation was found between knowledge and attitude/practice.83.3% of those with poor knowledge also had poor attitude/practice. Only 0% of those with good knowledge had poor practice. This confirms that knowledge significantly influences behaviour, and improving awareness is crucial in managing hypertension effectively.

Figure 1: Knowledge Score Vs Practice Score



DISCUSSION

In this study, Knowledge and practice scores were calculated with help of various questions along with importance of knowing & practicing those, they were divided in Good, Average, and Poor if the participants scored 11-16, 6-10, and 0-5, respectively.

165(32.7%) of study participants were not knowing the risk factors of the hypertension where as even in people who were aware of their hypertension, one-third (30%) were unaware of any of the modifiable risk factors for hypertension and most (88%) did not know that treating hypertension prevents other diseases as mentioned by Doreen Busingye & rajan J .[8,10,11)]

Present study noted, significant difference between knowledge of Rural & Urban participants. Along with that Males were having better knowledge than Females. But practices to manage hypertension was not significantly different in both Urban/rural and Male/female participants. The other KAP scoring studies elicited that study patients had poor knowledge with regard to the symptoms and complications of hypertension as found by Rajan J. and other authors from Northern India.[12,13]

Duration of Hypertension made significant difference in Knowledge and Practice Score. Only 14.25% of participants has tried other forms of treatment like Ayurveda,Homopathy. Unani. In spite of National programme for noncommunicable diseases, Availability of free medication in Govt hospitals 75.5% of participants have medicine through private hospitals. 37 participants out of 505 don't take medicines at all The reason for not taking drugs regularly was mainly due to forgetfulness (40%) followed by denial of illness (30%) similar to another study.[10]

73% of participants are taking medicine regularly and are confident about managing the disease A profound perception and positive attitude towards hypertension were noted in this study, which was higher in females. This finding goes in line with the studies done by Roopa KS et al [17]

149 (29.50%) of participants follow the strict guidelines given for dietary management of hypertension where as 76% patient's opinion was that salt restriction can improve the condition Rajan Jain 9, which was in contrast to a study done by Bhattacharya S et al, where 64% revealed that lowering salt in diet is not important at all . Authors also observed that 91% of the patients did not practice regular physical activity. There was poor practice of salt restriction, dietary habits and physical activity as observed by Bhatia S et al.13,14 This was in contrast with study done by Shah AJ et al,[15]

The practice of regular BP measurement and follow up was significantly higher in females when compared to males and 57% patients measured once a month similar to another study. Only 18% participants don't regularly go for follow-up visits. [9,14]

217 (47.9%) of participants were using Angiotensin Receptor blockers followed by calcium channel blockers 64(12.6%) & combined drug regime 54 (10.6%).

Conclusion

This Study reveals that there is a significant association between some sociodemographic factors and the Knowledge level of participants regarding hypertension. Among them, Gender, education, place of residence, and Socioeconomic status were found to be statistically significant with the Knowledge scores ($p < 0.05$). Specifically, Female participants, Lower educational status, lower Socioeconomic Status, and Participants residing in rural areas show poor Knowledge Scores. Other factors such as age, religion, and duration of hypertension did not show statistical significance ($p > 0.05$).

On the other hand, Knowledge Score and duration of hypertension were found statistically significant with practice ($p < 0.05$). Patients with **better knowledge** tended to exhibit **better attitudes and practices**

toward hypertension management, highlighting the importance of health education. Other factors such as gender, age, place of residence, education, and socioeconomic status did not show statistical significance practice score ($p>0.05$). However**, religion** showed a statistically significant association ($p = 0.003$); it may be limited due to the small number of participants in minority groups. The longer the duration of hypertension, the stronger the association with good practice score those with hypertension for >10 years had no poor scores. Poor scores were more common in newly diagnosed individuals (<1 year).
These findings highlight the necessity of Targeted health education Interventions focusing on vulnerable subgroups such as females, rural areas, and low educational status for boosting knowledge and efficient management of hypertension. This can lead to enhanced attitudes and self-care practices among hypertensive patients, regardless of their background.

Limitations of the study

The present study has some limitations

- The data was collected from a catering area of Urban & Rural area of Medical college during working hours which may limit the generalizability of the findings.
- The instrument is self-reported and can present a range of biases, such as data credibility.
- A limited number of participants in some subgroups (e.g., minority religions) may have affected the statistical power of certain analyses.

Recommendations

Based on the findings, the following recommendations are proposed:

1. Targeted health education interventions should be done by healthcare professionals, especially for women, individuals living in rural areas, and those with lower educational and socioeconomic backgrounds, at the community level as well as at the hospital level to create more awareness and increase Knowledge of patients to improve long-term patient outcomes.
2. For future research, consider a more diverse sample population and possibly a longitudinal research design for better statistical significance and to study the long-term management of Hypertension.

REFERENCES

1. World Health Organization. Hypertension [Internet]. Geneva: World Health Organization; 2023 [cited 2025 May 12]
2. Slark, J., Khan, M., Bentley, P. et al. Knowledge of blood pressure in a UK general public population. J Hum Hypertens **28**, 500–503 (2014)
3. Sanne S, Muntner P, Kawasaki L, Hyre A, DeSalvo KB. Hypertension knowledge among patients from an urban clinic. Ethn Dis. 2008 Winter;18(1):42-7
4. Volpe M, Dedhiya SD. Physicians, patients, and public knowledge and perception regarding hypertension and stroke: a review of survey studies. Curr Med Res Opin. 2006 Jul;22(7):1319-30.
5. Kearney PM, Whelton M, Reynolds K, Muntner P, Whelton PK, He J. Global burden of hypertension: analysis of worldwide data. Lancet. 2005 Jan 15-21;365(9455):217-23.
6. Aubert L, Bovet P, Gervasoni JP, Rwebogora A, Waeber B, Paccaud F. Knowledge, attitudes, and practices on hypertension in a country in epidemiological transition. Hypertension. 1998 May;31(5):1136-45.

7. Krishnamoorthy Y, Rajaa S, Rehman T, Thulasingam M. Patient and provider's perspective on barriers and facilitators for medication adherence among adult patients with cardiovascular diseases and diabetes mellitus in India: a qualitative evidence
8. Doreen Busingye, 1 Simin Arabshahi,1 Roger G Evans,2 Michaela A Riddell et al Knowledge of risk factors for hypertension in a rural Indian population. Heart Asia 2019;11, 1-8.
9. Rajan J., Sakthibalan M., Gerard Marshall Raj, Mangaiarkkarasi A. Knowledge, attitude and practice of hypertension among hypertensive patients in a tertiary care teaching hospital. International Journal of Basic & Clinical Pharmacology | May 2019 | Vol 8 | Issue 5 1013 – 18
10. Durai V, Muthuthandavan AR. Knowledge and practice on drug compliance among males with hypertension. Int J Comm Med Pub Heal. 2017;3(6):1424-30.
11. Shrestha S, Adhikari B, Poudel RS, Thapaliya K, Kharal T, Bastakoti M, et al. Knowledge, attitude and practice on hypertension among antihypertensive medication users. J Nepal Med Assoc. 2016;55(204):86.
12. Mahajan H, Kazi Y, Sharma B, Velhal GD. Assessment of KAP, risk factors and associated comorbidities in hypertensive patients. IOSRJDMS. 2012;1(2):06-14
13. Bhatia S, Khanka BS, Singh D, Shankar P, Tutu S, Lakhani P. Study of knowledge, attitude and practice of general population of Lucknow towards hypertension. WIPPS. 2015;4:10.
14. Bhat B, Shenoy J, Dutt A, Kumar S, Kalpana B, Bhat S, et al. Influence of dietary habits on blood pressure in preadolescent boys of Coastal Karnataka. National J Physiol Pharm Pharmacol. 2013;3(1):9.
15. Shah AJ, Singh V, Patil SP, Gadkari MR, Ramchandani V, Doshi KJ. Factors affecting compliance to antihypertensive treatment among adults in a tertiary care hospital in Mumbai. Indian journal of community medicine: official publication of Ind Assoc Prev Social Med. 2018;43(1):53.
16. Ahmad S, Ahmad T. Assessment of knowledge, attitude and practice among hypertensive patients attending a health care facility in North India. Int J Res Med. 2015;4(2):122-7.
17. Roopa KS, Rama Devi G. Impact of intervention programme on knowledge, attitude, practices in the management of hypertension among elderly. Studies Home Comm Sci. 2014;8(1):11-6