



THE PREVALENCE AND RISK FACTORS OF HYPERTENSION AMONG ADULT POPULATION IN RANGEILUNDA BLOCK OF ODISHA

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Abstract: This study investigates the prevalence of hypertension across various age groups in Rangeilunda block of Ganjam district, Odisha. For this study 120 respondents suffering from hypertension from various age groups were selected. The findings reveals that a progressive increase in hypertension incidence with advancing age, highlighting a notably higher prevalence in the 60 and above age group compared to younger cohorts. The analysis underscores the critical need for age-specific prevention and management strategies to mitigate the growing burden of hypertension. Ultimately, this study aims to contribute to the broader goal of reducing the global burden of hypertension and improving cardiovascular health outcomes.

Keywords: Hypertension, Investigate, Prevalence, Cardiovascular health, Management strategy,

INTRODUCTION

Hypertension, commonly known as high blood pressure, is a prevalent chronic condition that significantly increases the risk of cardiovascular diseases, including heart attack, stroke, and heart failure. It is a major global health concern, affecting millions of individuals and posing substantial burdens on healthcare systems worldwide. The World Health Organization (WHO) reports that hypertension is responsible for approximately 12.8% of all deaths globally, underscoring the critical need for effective management and prevention strategies. The etiology of hypertension is multifaceted, involving a combination of genetic, environmental, and lifestyle factors. Among these, age has been consistently identified as a primary risk factor. As individuals age, the elasticity of their blood vessels decreases, leading to higher blood pressure levels. Consequently, older adults are more susceptible to developing hypertension and its associated complications. This age-related increase in hypertension prevalence necessitates targeted interventions that address the specific needs of different age groups.

Despite the well-documented relationship between age and hypertension, there is a need for more granular data to understand the nuances of this relationship across various age brackets. Existing literature often categorizes age broadly, potentially overlooking significant variations within narrower age ranges. By examining hypertension prevalence across more specific age groups, healthcare providers and policymakers can better identify at-risk populations and develop more precise, effective intervention strategies.

LITERATURE REVIEW

Hypertension, often referred to as high blood pressure, is a prevalent chronic condition that significantly impacts global health. The WHO's (2013) Global Action Plan for the Prevention and Control of Noncommunicable Diseases aims to reduce the prevalence of hypertension by promoting healthier lifestyles and improving healthcare access. According to WHO's (2015) hypertension affects approximately 1.13 billion people worldwide, contributing to the development of heart disease, stroke, and kidney failure. The burden of hypertension is growing, particularly in low- and middle-income countries where healthcare systems may struggle to manage chronic diseases effectively. Ghadieh S. Alexandra and Saab Basem(2015) had done research work on "Evidence for exercise training in the management of hypertension in adults"with the goal of offering recommendations on exercise training as part of the management of adult hypertension. They concluded that moderate intensity aerobic exercise has been shown to help prevent hypertension and to help manage stage 1 hypertension. Survey conducted by the National Health and Nutrition Examination Survey (NHANES) in the United States found that hypertension prevalence increases significantly with age. Centers for disease control and prevention (CDC, 2017) has done research and concluded with the findings the prevalence was 7.3% among individuals aged 18-39, 32.4% among those aged 40-59, and 65.0% in individuals aged 60 and older. These findings underscore the importance of age-specific strategies in hypertension management and prevention. Eghbali et al (2018) has conducted a study and the results revealed that hypertension was highly prevalent in men, middle aged and older adults and factors like age,BMI, having diabetes, hyperlipidemia and positive family history.

Tymejczyk et al (2018). They have done research and ended with the findings that the prevalence of hypertension is more in men than women, it is also found that women are more obese than men, smoking is common in men than women are the risk factors of prevalence of hypertension. Mills et al (2020) concluded that the prevalence of hypertension varies significantly with high sodium intake, low potassium intake, obesity, alcohol consumption, physical inactivity, and unhealthy diets. Mamdouh et al (2022) has done a study and concluded that hypertension prevalence increases with age and is generally higher in men compared to women and pre-hypertension was high in women than men.They also found that higher socioeconomic status, obesity, and low physical activity, high BMI, and unhealthy dietary patterns are significant predictors of hypertension.

The literature consistently demonstrates that hypertension prevalence increases with age, influenced by a combination of physiological, gender-related, socioeconomic, and lifestyle factors.

METHODOLOGY

Study Design

The data was collected from 120 respondents suffering from hypertension from Rangeilunda block of Odisha. Participants were categorized into three distinct age groups for analysis i.e. as 20-40 years, 40-60 years, and 60 and above years of age. These age groups were chosen to capture the progression of hypertension risk from young adulthood through middle age to older age.

Data Collection

The data obtained by administration of questionnaire on hypertension patients that included self-reported information. Participants were selected from various age group to ensure a diverse sample. The final sample has been chosen to include a cross section of the population basing on age,gender, occupation using economic status and area.

Data Analysis

The collected data were analyzed using percentage method. Comparative analysis was done through bar charts across the different age groups.

Ethical Considerations

Informed consent was obtained from all participants prior to their inclusion in the survey.

Limitations

While the cross-sectional design allows for the assessment of hypertension prevalence at a specific point in time, it does not provide information on the incidence or causal factors. Self-reported data may be subject to

recall bias, and the reliance on clinical measurements requires consideration of potential measurement errors. Due to constraint of time and money constraint total population was not included.

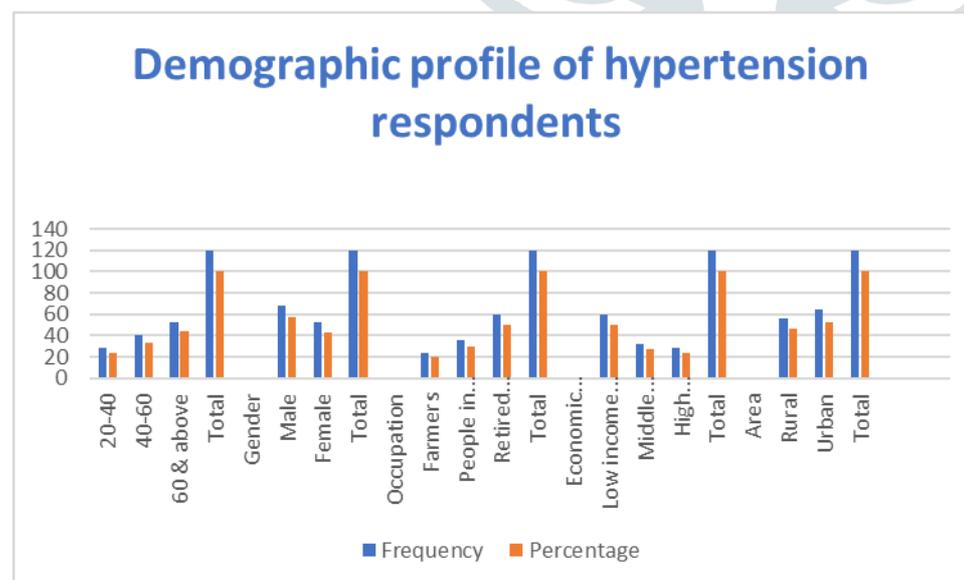
RESULTS AND DISCUSSION

Analysis of Hypertension respondents basing on Socio-economic status

Table 1: Demographic profile of hypertension respondents:

Category	Category	Frequency(N=120)	Percentage
Age in years	20-40	28	23
	40-60	40	33
	60 and above	52	44
	Total	120	100
Gender	Male	68	57
	Female	52	43
	Total	120	100
Occupation	Farmers	24	20
	People in service	36	30
	Retired person	60	50
	Total	120	100
Economic Status	Low-income group	60	50
	Middle-income group	32	27
	High-income group	28	23
	Total	120	100
Area	Rural	56	47
	Urban	64	53
	Total	120	100

Fig. 1



The table-1 (figure-1) shows that majority of the hypertension respondents (44 per cent) represent 60 and above years age group followed by 40 to 60 years age group of respondents, which contribute 33 per cent and rest belong to 20-40 years of age group. Out of an aggregate sample of 120, 57 per cent of respondents are

male and rest 43 per cent are female respondents. It reveals that major chunk of the respondents (50 per cent) are retired person followed by 30 per cent who are continuing in service and the rest are farmers. A bulk of the total sample (50 per cent) belong to the lower income group, distantly followed by middle income group (27 per cent) and high income group (23 per cent) people. 53 per cent sample belong to urban area and 47 per cent live in rural area.

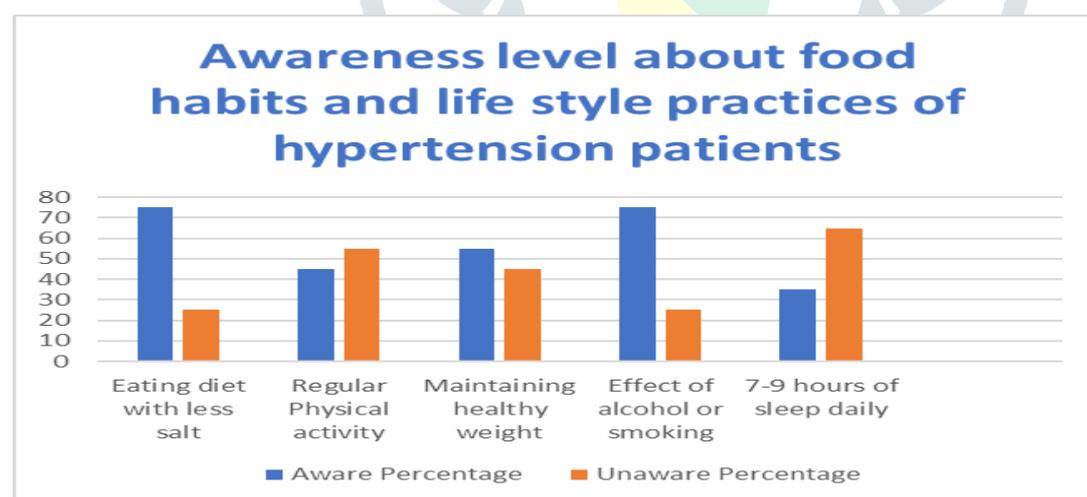
Awareness level among hypertension patients:

Awareness level among hypertension patients were assessed considering the following factors such as: eating a diet with less salt, regular physical activities, maintaining a healthy weight, effect of alcohol or smoking and getting 7 to 9 hours of sleep daily.

Table -2 Awareness level among hypertension patients considering food habits and life style practices

Factors of awareness	Aware respondents in number & %		Unaware respondents in number & %		Total number of respondents in number
	Number	%	Number	%	
Eating diet with less salt	90	75	30	25	120
Regular physical exercise & activities	54	45	66	55	120
Maintaining a healthy weight	66	55	54	45	120
Effect of alcohol/smoking	90	75	30	25	120
7 to 9 hours sleep per day	42	35	78	65	120

Fig. 2



The table-2(fig.-2) reveals that 75 per cent of respondents are taking diet with less salt, conforming to the statement that they are aware about it. About 55 per cent respondents are not aware about doing regular physical exercise and activities can help in reducing blood pressure level against 45 per cent who are aware about it. Hence the unaware man need to be aware so that hypertension can be managed without medication to a safer extent. About 55 per cent of respondents are well aware regarding maintaining healthy weight against 45 per cent who are unaware. About 75 per cent of respondents are aware and knew the effect of alcohol consumption and smoking has negative effect on blood pressure level. About 65 per cent of respondents are not aware regarding daily sleep of 7 to 9 hours per day is good for health, indirectly responsible for controlling hypertension.

Recommendations

- Targeted Education Programs: Focus on increasing awareness of regular physical activity and the importance of adequate sleep among hypertension patients.
- Health Campaigns: Implement health campaigns that emphasize the benefits of maintaining a healthy weight and reducing alcohol and smoking consumption.
- Support Systems: Establish support systems to help patients adopt and maintain healthier lifestyles.

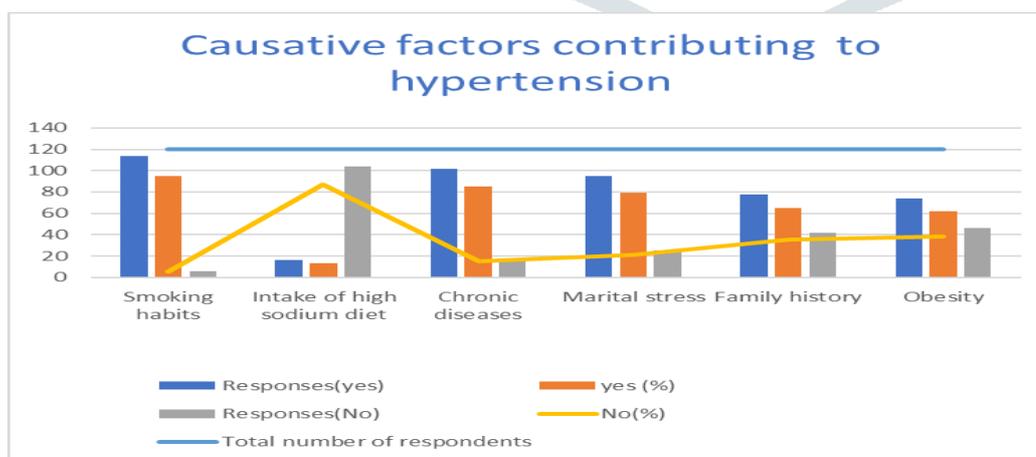
Causative factors contributing to hypertension:

Causative factors contributing to hypertension were analyzed and represented in Table-3

Table-3 Causative factors contributing to hypertension

Causative Factors	Responses		Responses		Total Responses
	Number	(%)	Number	(%)	
Smoking habits	114	95	06	5	120
Intake of high sodium diet	16	13	104	87	120
Chronic Disease	102	85	18	15	120
Marital stress	95	79	25	21	120
Family History	78	65	42	35	120
Obesity	74	62	46	38	120

Fig. 3.



The table-3 (Fig-3) clearly depicts that maximum respondents (95 per cent) have regular smoking habits even though they are well aware about its detrimental effect on health. Intake of high sodium diet is found only in 13 per cent of respondents. Its a good to observe that 87 per cent of respondents are taking low sodium diet as they know well that it is a causative factors of hypertension. Majority (85 per cent) of respondents have history of chronic diseases that laid to hypertension. In maximum (79 per cent) of cases

of hypertension found in person due to marital stress arising due to conflict between spouse and in-laws, work and financial pressure and adjustment problems etc. Nearly (65 per cent) of respondents opined that they have family history of having the hypertension. Nearly 62 per cent of respondents have obesity which ultimately leads to hypertension.

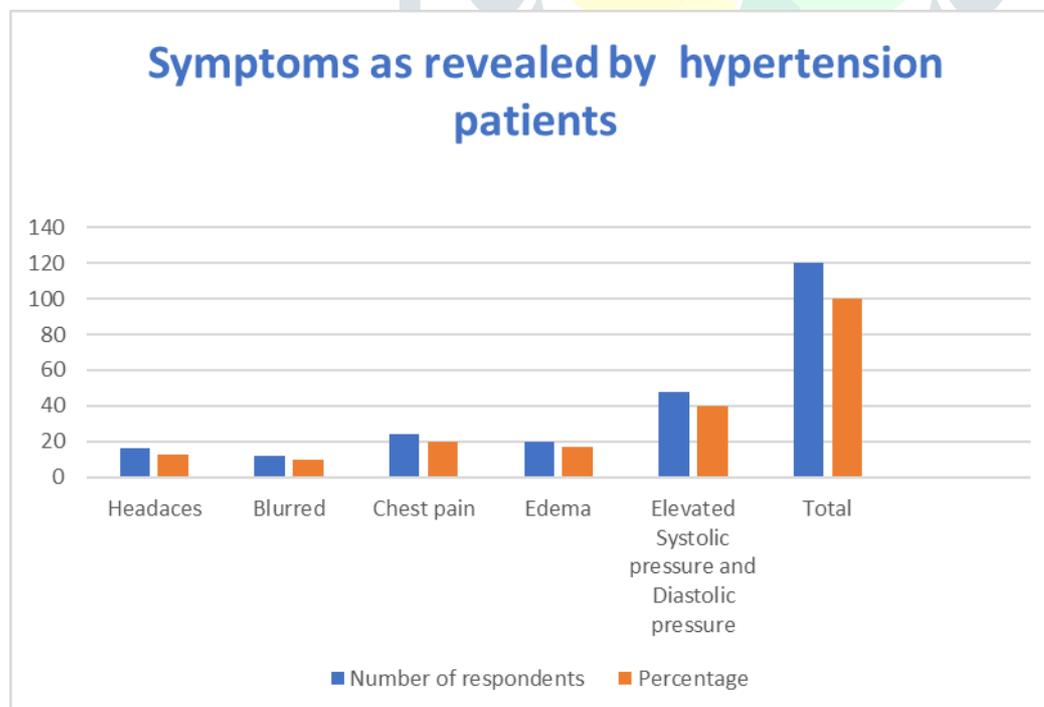
Recommendations

- Smoking Cessation Programs: Implement and promote programs to help individuals quit smoking.
- Dietary Interventions: Encourage and educate individuals about reducing sodium intake.
- Chronic Disease Management: Focus on managing chronic diseases through medical interventions and lifestyle changes.
- Holistic Health Approaches: Consider the impact of marital status and family history in comprehensive hypertension management strategies.

Table 4 Symptoms as revealed by hypertension patients

Symptoms in Hypertension Patients	Number of Respondents	Percentage
Headaches	16	13
Blurred Vision	12	10
Chest Pain	24	20
Edema	20	17
Elevated Systolic Pressure and Diastolic Pressure	48	40
Total	120	100

Fig. 4



The table-4(Fig-4) shows the clinical symptoms as revealed by hypertension patients. Elevated systolic and Diastolic pressure experienced by 40 per cent of respondents. Chest pain, edema, headache and blurred vision is experienced by 20 per cent, 17 percent, 13 per cent & 10 per cent respondents respectively. Figure-

4 provides a clear visual comparison of the prevalence of each symptom, making it easy to identify which clinical symptoms are most and least common among the sample population.

Recommendations

- Symptom Management: Focus on managing severe symptoms like headaches and chest pain through appropriate medical interventions.
- Monitoring: Regular monitoring of blood pressure to manage low systolic and diastolic pressure.
- Patient Education: Educate patients about the signs and symptoms of hypertension to ensure early detection and management.
- Holistic Care: Address all clinical presentations comprehensively to improve the overall quality of life for hypertension patients.

CONCLUSION

The findings highlight a clear trend of increasing hypertension cases with advancing age, emphasizing the significant burden of this condition among older adults. The highest prevalence was observed in the 60 and above age group, emphasizing the need for targeted interventions to prevent hypertension effectively. The results indicate that older people along with their physiological changes easily become victim of hypertension. Though many people are aware about the symptoms, causative factors of hypertension, still they do not practice it seriously in real life. By addressing the age-specific needs of populations at risk, we can improve cardiovascular health outcomes and reduce the global burden of hypertension.

REFERENCES

1. Ghadie S. Alexandra and Saab Basem (2015). Evidence for exercise training in the management of hypertension in adults. *Canadian family physical, march 2015; 61(3)233-239*.
2. Centers for Disease Control and Prevention (CDC). (2017). *Hypertension prevalence and control among adults: United States, 2015-2016*. National Center for Health Statistics Data Brief, No. 289. Retrieved from [CDC](<https://www.cdc.gov/nchs/products/databriefs/db289.htm>)
3. World Health Organization (WHO). (2013). *A global brief on hypertension: Silent killer, global public health crisis*. World Health Organization. Retrieved from [WHO](<https://www.who.int/publications/i/item/a-global-brief-on-hypertension-silent-killer-global-public-health-crisis>)
4. Booth, J., Li, J., Zhang, L., Chen, L., Muntner, P., & Egan, B. (2017). Trends in Prehypertension and Hypertension Risk Factors in US Adults: 1999–2012. *Hypertension*, 70, 275–284. <https://doi.org/10.1161/HYPERTENSIONAHA.116.09004>.
5. Chuka, A., Gutema, B., Ayele, G., Megersa, N., Melkisedik, Z., & Zewdie, T. (2020). Prevalence of hypertension and associated factors among adult residents in Arba Minch Health and Demographic Surveillance Site, Southern Ethiopia. *PLoS ONE*, 15. <https://doi.org/10.1371/journal.pone.0237333>.
6. Eghbali, M., Khosravi, A., Feizi, A., Mansouri, A., Mahaki, B., & Sarrafzadegan, N. (2018). Prevalence, awareness, treatment, control, and risk factors of hypertension among adults: a cross-sectional study in Iran. *Epidemiology and Health*, 40. <https://doi.org/10.4178/epih.e2018020>.
7. Mamdouh, H., Alnakhi, W., Hussain, H., Ibrahim, G., Hussein, A., Mahmoud, I., Sulaiman, N., Alawadi, F., Hassanein, M., Abdullatif, M., Alabady, K., & Farooq, S. (2022). Prevalence and associated risk factors of hypertension and pre-hypertension among the adult population: findings from the Dubai household survey, 2019. *Journal of Hypertension*, 40 Suppl 1, e229. <https://doi.org/10.1097/01.hjh.0000837816.80236.53>.
8. Mills, K., Stefanescu, A., & He, J. (2020). The global epidemiology of hypertension. *Nature Reviews Nephrology*, 16, 223-237. <https://doi.org/10.1038/s41581-019-0244-2>.
9. Tymejczyk, O., McNairy, M., Petion, J., Rivera, V., Dorélien, A., Peck, M., Seo, G., Walsh, K., Fitzgerald, D., Peck, R., Joshi, A., Pape, J., & Nash, D. (2018). Hypertension prevalence and risk factors among residents of four slum communities: population-representative findings from Port-au-Prince, Haiti. *Journal of Hypertension*. <https://doi.org/10.1097/HJH.0000000000001966>.
10. Zare, M., Okati-Aliabad, H., Ansari-Moghaddam, A., Mohammadi, M., & Shahraki-Sanavi, F. (2023). Prevalence and risk factors of pre-hypertension and hypertension among adults in Southeastern Iran: Findings from the baseline survey of the Zahedan adult cohort study. *PLOS ONE*, 18. <https://doi.org/10.1371/journal.pone.0295270>