

**Assessment of knowledge of Hypertension among Non-Teaching Staff of
College of Health Sciences, University of Ilorin**

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Abstract

Hypertension is considered a major global health issue, resulting in approximately 9.4 million deaths annually. Hypertension also known as a silent killer, it is often diagnosed incidentally. Untreated hypertension can lead to severe complications such as cardiovascular disease, kidney failure, and stroke resulting in disabilities. Awareness and knowledge of hypertension have been validated as effective method for the prevention and better management of the condition. This study aimed to assess the knowledge of hypertension amongst non-teaching staff of College of Health Sciences, University of Ilorin.

The study used a cross-sectional design and a purposeful sampling technique. A self-administered questionnaires were used to assess the perceived knowledge and awareness of Hypertension among the participants using Hypertension Evaluation of Lifestyle and Management Scale (HELM). Descriptive statistics were used to analysed the data using frequency and simple percentage presented in a bar chart.

A total of eighty-one (81) questionnaires were administered, 67 copies were appropriately filled and returned, corresponding to 82.7% response rate. Meanwhile 58.2%, 17.9% and 23.9% of the participants show high, moderate and low overall degree of knowledge of hypertension respectively. 85.0% of the participants declare high awareness of risk factors of hypertension, 74.6% showed high knowledge on methods of reducing hypertension and 61.2% showed high level of knowledge of complications of hypertension. Non-academic staff participants with the highest education qualification demonstrated highest degree of knowledge of hypertension.

In this survey, there was high knowledge and awareness of hypertension among non-academic staff of college of Health Sciences, University of Ilorin. Continuous workplace advocacy is essential with greater emphasis on ways of reducing hypertension and complications of hypertension.

Keywords: hypertension, prevention, knowledge, awareness, risk factors,

Introduction

The development of heart disease, stroke, renal failure, premature death, and disabilities are all influenced by hypertension, a global public health concern [1]. Cardiovascular diseases (CVDs) are the leading cause of death globally. An estimated 19.8 million people died from CVDs in 2022, representing approximately 32% of all global deaths. Of these deaths, 85% were due to heart attack and stroke. Over three quarters of CVD deaths take place in low- and middle-income countries [2]. In reaction to this danger, International and local organization have created and maintained an updating policy linked to hypertension management and strategies for promoting health in managing hypertension to lessen or avoid its potential from leading to additional disabilities [1]. These efforts have reduced the occurrence of hypertension in high income countries, while the prevalence have been increasing in middle and low-income countries [3].

The incidence and prevalence of hypertension keep rising around the world [4], the number of adults with hypertension has risen from 650 million in 1990 to 1.4 billion in 2024. Estimate suggest that the prevalence of hypertension among adults may rise between 1.5 billion to 1.56 billion by the year 2025 [5]. Currently, an estimate of 1.23 billion adults aged 30-79 years worldwide have hypertension, 46% were not aware that they had it [2]. In Nigeria, research indicates varying yet significant prevalence rates, such as 27.1% among employees in southwest Nigeria [6] and an overall age-standardized prevalence of 38.1% across different geopolitical zones [7]. Another study was conducted in Nigeria on the evaluation of knowledge risk factors for hypertension among staff of tertiary institution and it showed that most of the staff (62.1%) lacked awareness of their blood pressure status [8]. Unfortunately, despite the high prevalence of hypertension in Africa, there is limited number of scholarly research on understanding hypertension in Africa including Nigeria. This raised a serious apprehension to both the researchers and the academicians in the country.

Despite the high prevalence of hypertension, there remain significant gaps in awareness, treatment, and control on a global scale, with 50–75% of hypertensive individuals not receiving the necessary care [9, 10]. In certain contexts, such as the data from Iran in 2011, it was found that 43.2% of individuals were not aware of their condition, 34.8% were receiving treatment, and 38.6% had managed their hypertension, with variation across different regions. In Nigeria, a lack of awareness is particularly pronounced, as demonstrated by a study indicating that 62.1% of staff at tertiary institutions were ignorant of their blood pressure readings [11].

Africa, and Nigeria in particular, is confronted with a significant burden of hypertension; however, there is a scarcity of academic research addressing knowledge levels, which raises concerns among scholars and researchers. Hypertension was identified as a global health challenge by the WHO in 2023, contributing to 64 million disability-adjusted life years (DALYs) in both developed and developing nations [2]. This condition adversely affects productivity, results in workforce shortages, and leads to early retirements, thereby having economic repercussions [11, 2].

Existing empirical studies indicate a scarcity of research regarding hypertension awareness, particularly in Kwara State, Nigeria, which underscores a significant gap [12]. Consequently, the study intends to assess the understanding of hypertension among non-teaching personnel at the College of Health Sciences, University of Ilorin, Kwara State, Nigeria, to tackle this vital issue considering the concerning increases observed both globally and locally.

Consequently, the study is specifically sought to; determine the awareness and understanding of hypertension among non-teaching staff of College of Health Science, University of Ilorin, Kwara State, Nigeria.

Methodology

A cross-sectional study design was employed to evaluate awareness and knowledge of hypertension among non-teaching-staff of College of Health Sciences University of Ilorin. The study did not include any high-risk groups; thus, ethical approval was waived. Participants received clear and comprehensive information through informed consent that outlined the study's purpose and benefits. Confidentiality was strictly maintained by safeguarding personal information, and anonymity was prioritized to protect participants' privacy and encourage honest responses. Participants were free to leave the study at any time without facing any repercussions because voluntary participation was strictly enforced.

Participants

The study adopted a purposeful sampling technique and participant were approached physically and notified ahead of time through verbal word of mouth communication. Eligibility required participants to be non-teaching staff of College of Health Sciences University of Ilorin, who had obtained a minimum of O level certificate. Excluded from this investigation were academic staff members, as they were considered medical personnel who are already likely to possess adequate knowledge and awareness of hypertension.

Study Setting

The research was carried out between January and March of 2024, and participants were drawn from the college irrespective of the specialization and job role provided they are non-teaching staff of the college of health sciences, of the University. The University of Ilorin is situated in Ilorin town, State Capital of Kwara State, Nigeria. It was established in 1975. College of Health sciences is a section of University of Ilorin that handles medical courses it consists of three faculties with all most two dozen departments. The faculties include Faculty of Clinical Sciences, Faculty of Basic Clinical Sciences and Faculty of Basic Medical Sciences.

Data Collection Procedure

Self-administered questionnaires were utilised for data collection. The questionnaire was structured to assess participants perceived knowledge and awareness of Hypertension, lifestyle and management Skill among non-teaching staff across all the faculties in College of Health Sciences, University of Ilorin. The early section of the questionnaire covers questions on basic participant's demographics, while the other section covers questions to evaluate knowledge and awareness of hypertension. Questions were formulated based on the Hypertension Evaluation of Lifestyle and Management (HELM) scale. It is a validated 14-item instrument designed to assess a patient's knowledge of hypertension self-management. HELM addresses three main areas that assist patients in actively managing their condition: general knowledge of hypertension, lifestyle/medication, and treatment goals.

Data analysis

Data analysis was done with Microsoft excel version 2016 and Statistical Package for the Social Sciences (SPSS). The responses of the participants were analyzed with descriptive statistics (frequency and percentage). Standard deviations and means were used to display categorical data. Respondents were ranked according to their level

of knowledge on awareness of hypertension risk factor using the following parameters: high (above 50%), moderate (above 20%) and low (below 20%) awareness of risk factors for hypertension. Sociodemographic characteristics of the respondents were compiled using percentages and frequency counts. The relationship between sociodemographic characteristics, respondents' knowledge and awareness were examined using the chi square test. P value was set as 0.05, hence, p -value < 0.05 indicates a significant relationship.

Results

Sociodemographic characteristics of participants

In total, eighty-one (81) copies of questionnaires were administered, 67 copies were appropriately filled and returned. Table 1 displays the participants' sociodemographic characteristics, 12 (17.91%) were between the ages of 18-24 years, 35 (52.24%) were between the ages 25-34 years, 16 (23.88%) were between the age of 35-44 years, and 4 (5.97%) were between the ages 45 and older. The age distribution indicates that majority of the participants fall within the ages of 25-34 years. A total of 67 respondents that participated in the study, comprising 24 (32.82%) male and 43 (64.18%) female. Additionally, out of the study's participants, 67 (100.00%) are married and 0 (0.00%) are single. There are 0 (0.00%) widows and 0 (0.00%) divorced people. Furthermore, majority of respondents 50 (74.63%) had university education, 12 respondents (17.91%) had secondary education, and 5 respondents (7.46%) had only primary education. Lastly, Table 1 below also shows, 5 (7.46%) of respondents were junior technicians, 13 (19.40%) senior technicians, 22 (32.84%) junior non-technicians, while 27 (40.30%) were senior non-technicians.

Figure 1 display the overall respondents' knowledge of hypertension, 58.2% and 23.9% of the participants showed the highest and lowest level of knowledge of hypertension, respectively.

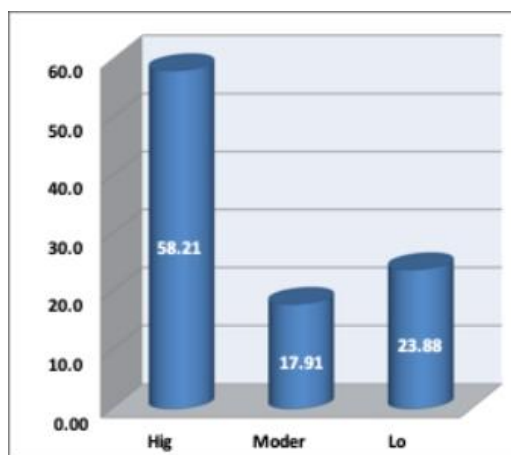


Figure 1. Overall level of knowledge of hypertension among the respondents

Furthermore, Table 1 present the relationship between sociodemographic characteristics of the respondents and their awareness of hypertension. The result shows that there is significant relationship between socio-demographic variables and participants' awareness of hypertension. The results are as follows Age, gender, marital status, educational background and working categories of the respondents/participants, <0.0001, 0.0203, <0.0001 and <0.0001, were all significant at alpha level 0.05.

Table 1. The relationship between Socio-Demographic Characteristics and the Knowledge of Hypertension

Variables	Frequency (n)	Percentage (%)	df	Chi square χ^2	P-value
Age group (year)			3	30.97	<0.0001
18-24	12	17.91			
25-34	35	52.24			
35-44	16	23.88			
45 and above	4	5.97			
Gender			1	5.39	0.0203
Male	24	35.82			
Female	43	64.18			
Marital status			2	201.0	<0.0001
Single	-	0.00			
Married	67	100			
Divorced	-	0.00			
Academic qualification			3	92.343	<0.0001
No formal education	-	0.00			
Primary	5	7.48			
Secondary	12	17.91			
Tertiary	50	74.63			
Working categories			3	17.00	<0.0007
Junior Technicians	5	7.46			
Senior Technicians	13	19.4			
Junior non-Technicians	22	32.8			
Senior non-Technicians	27	40.3			

Knowledge and awareness of hypertension risk factors

As shown in Figure 2, participants' degree of understanding of risk factors indicates that majority (82%) of the respondents' demonstrated adequate knowledge while only 13.5% exhibited low level of knowledge. Regarding the responses of the participants on knowledge of risk factors for hypertension, 53 respondents (79.10%) reported that excessive salt intake can lead to high blood pressure, 2 respondents (2.99%) agreed that excessive salt consumption causes blood pressure to fall, 1 respondent (1.49%) thought that excessive salt intake causes blood pressure to stay the same, and 11 respondents (16.42%) were unsure. Additionally, it was found that 62 respondents (92.54%) agreed that tension is one of the risk factors for hypertension, 1 respondent (1.49%) disagreed that tension is not a risk factor for hypertension, and 4 respondents (5.97%) were unsure. Additionally, 59 respondents (88.06%) agreed that excessive intake of fat can lead to hypertension, 2 respondents (2.96%) disagreed, and 6 respondents (8.98%) were unsure. Table 2 shows the summary of overall level of awareness of risk factors for hypertension among participants.

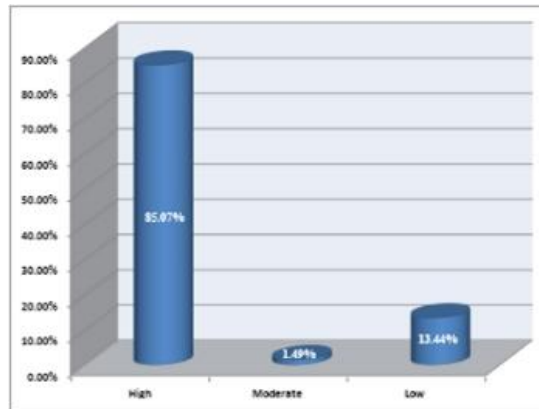


Figure 2. Overall level of awareness of risk factors of hypertension among the respondents

Table 2. Level of Knowledge of Hypertension among Respondents

S/N	Level of knowledge of hypertension among non-teaching staff	Responses n(%)			
1.	How often do you check your blood pressure	Daily 0(0.0%)	Weekly 11(16.42%)	Monthly 45(67.16%)	Not at all 11(16.42%)
2.	If someone's blood pressure is 115/75, it is...?	High 8(11.98%)	Low 12(17.91%)	Normal 32(47.76%)	Do not know 15(22.39%)
3.	If someone's blood pressure is 160/100, it is...?	High 46(68.66%)	Low 2(2.99%)	Normal 9(13.43%)	Do not know 10(14.92%)
4.	Once someone has high blood pressure, it usually lasts for ?	A few years	5-10 years 1(1.49%)	The rest of their life 36 (53.73%)	Do not know 22(32.84%)
5	High blood pressure cannot be cured	Yes 17(25.37%)	No	Don't know 5(7.47%)	

Knowledge of the Respondents on methods of Controlling Hypertension

Participants' knowledge on various methods of controlling hypertension is presented in Figure 3. Results of response to knowledge of controlling hypertension, show that 54 respondents (80.60%) agreed that individuals with elevated blood pressure should take their medication daily, 6 respondents (8.96%) agreed that they should take their medication at least a few times a week, 0 respondents (0.00%) agreed that individuals with high blood pressure should only take their prescription when they are unwell, and 7 respondents (10.44%) did not know the precise time that individual with elevated blood pressure should take their medication. Seven respondents (10.45%) indicated that losing weight typically causes blood pressure to rise, forty respondents (59.70%) thought that blood pressure typically decreases, six respondents (8.96%) reported that blood pressure typically remains unchanged, and fourteen respondents (20.89%) did not know or have idea about it. Additionally, 51 respondents (76.12%) acknowledged that moderate to vigorous exercise for 30 minutes a day, three to five times a week, lowers blood pressure, 2 respondents (2.99%) agreed, and 14 respondents (20.89%) were unsure. Additionally, 26 respondents (38.81%) stated that motivational interviewing methods are ineffective in changing patients lifestyles, 29

respondents (43.28%) disagreed, and 12 respondents (17.91%) had no idea at all. Additionally, in this study, 56 respondents (83.58%) reported that a hypertensive person should aim for a normal blood pressure of 120/80, 1 respondent (1.49%) disagreed, and 10 respondents (14.93%) didn't know about the question. Additionally, 56 respondents (83.58%) stated that persons with elevated blood pressure should consume less fat, 2 respondents (2.99%) disagreed, and 9 respondents (13.43%) were unsure. Additionally, 64 respondents (95.52%) indicated that persons with elevated blood pressure should consume more fruits and vegetables, whereas 3 respondents (4.48%) were unsure.

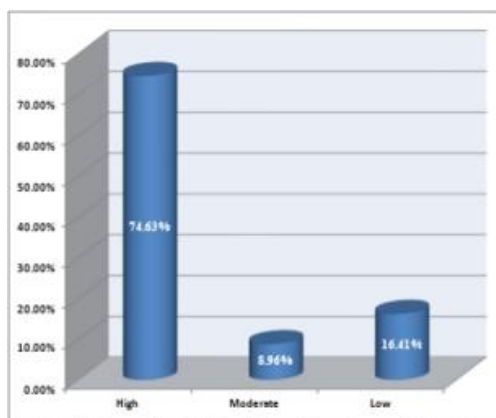


Figure 3. Overall level of knowledge of respondents on ways of reducing hypertension

Knowledge of Hypertension's Complication among the Respondents

Response regarding knowledge of complications related to hypertension is presented in Figure 4. Regarding heart attack, 60 respondents (89.55%) agreed that hypertension can result to heart attacks, whereas 7 respondents (10.45%) were unsure. Additionally, 18 respondents (26.87%) agreed that hypertension can cause heart cancer, 11 respondents (16.41%) agreed that hypertension cannot cause heart cancer, and 38 respondents (56.72%) were unsure. Regarding hypertension and renal problem, 30 respondents (44.78%) agreed that hypertension can lead to renal problems, 10 respondents (14.93%) disagreed, and 27 respondents (40.29%) had no idea. For diabetes, 41 respondents (61.19%) agreed that hypertension may lead to diabetes, 8 respondents (11.94%) disagreed, and 18 respondents (26.87%) were unsure. As for stroke, 60 respondents (89.55%) agreed that stroke can result from hypertension, whilst 7 respondents (10.45%) were unsure.

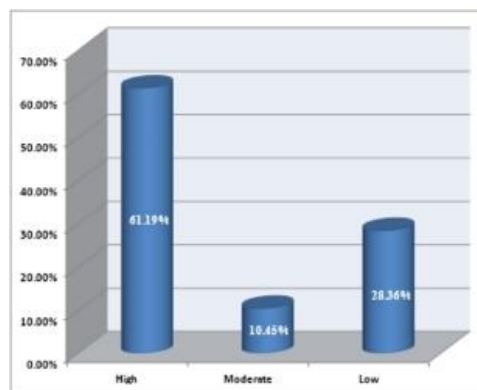


Figure 4. Overall level of knowledge of respondents on hypertension's complication

Discussion

This study assessed participants' knowledge and awareness of risk factors associated with hypertension, complications and methods of controlling it. The findings of this study indicate that the participants have reasonable high knowledge of the hypertension. This, indicates that a substantial level of awareness about hypertension exist among professionals of this category within the sample population. This finding may be linked to the educational qualification of the participants as majority (74.63%) of the participants had a tertiary/university degree. This is comparable to the results of a study that reported knowledge and awareness of hypertension to increase with educational qualification of participants [13]. On the contrary, another study found that knowledge and awareness of hypertension and its consequences were inadequate despite it being a significant health problem [14]. Another possible reason for the high-level of participants' knowledge and awareness could be ascribed to their domiciliation in the college. Of health sciences where a large proportion of them may have participated in the organizing of seminars, lectures or conferences and research on hypertension and related subjects. This might have improved their understanding and awareness thereby influencing result of the study.

The result of this study shows that participants demonstrated high knowledge of risk factors for hypertension. Therefore knowledge of hypertension risk factors has a significant effect on its prevention, management, and control by enabling individuals to adopt healthy lifestyle changes, improving adherence to treatment, and ultimately leading to better blood pressure outcomes [10,15]. Better knowledge and awareness encourage positive behaviours like healthy diet, exercise, and blood pressure monitoring, while poor knowledge may be associated with lack of high blood pressure control, highlighting the necessity of education and awareness[16]

Findings of this study reveals that, participants showed good degree of understanding towards the management and control of hypertension. Knowledge plays an important role in the management of hypertension as it helps prevent severe life-threatening complications such as stroke, renal problems, and diabetics [17]. Knowledge of methods of controlling hypertension also encourages consistent monitoring, lifestyle modification, adherence to medication and helps reduce the disease's burden and improve health outcome [18,19].

Most of the participants demonstrate high awareness of hypertension. This result is contrary to the finding of a study that found awareness and knowledge about hypertension and its consequences were inadequate despite being a serious health problem [13]. Also, the result does not align with the findings of a study that reported knowledge of hypertension among patients, was low [14].

Majority of non-teaching staff of College of Health Science, declared high knowledge of risk factor associated with hypertension. This finding is similar a study [17] that reported over 75% of Americans are aware of the risk factors linked to hypertension. However, the result is contrary to the finding of a study which reported that the knowledge of patients on the risk factor linked to high blood pressure were low [14]. Large percentage of the non-teaching staff of College of Health Science have high knowledge of methods of reducing hypertension. This result is contrary to the findings of a study that reported inadequate knowledge of hypertension, its complications and management among hypertensive patients [19].

Majority of the participants demonstrated a high level of Knowledge regarding complication of hypertension. This is similar to the finding of a study [12], who reported high level of knowledge about complications related to hypertension. Also, the result is similar to the findings of a study that revealed a greater awareness of major risk factors and complications, but unaware of minor clinical consequence 20, 20].

Conclusion

This study aimed to improve the overall health and burden of hypertension among the study population and by extension contribute to reducing global burden of the disease through efforts aimed at lowering its prevalence. It focuses on the relevance of knowledge and awareness of risk factors, complication and control measures of hypertension. It is essential to implement strategies aimed at further improve the population's knowledge and awareness of hypertension. Majority of non-teaching staff of the college have adequate awareness of risk factors, complication and control measures of hypertension. However, continuous awareness and knowledge will considerably reduce the prevalence and burden of the disease.

REFERENCES

- Whelton, P. K., Carey, R. M., Aronow, W. S., Casey, D. E., Jr., Collins, K. J., Dennison Himmelfarb, C., Depalma, S. M., Gidding, S., Jamerson, K. A., Jones, D. W., MacLaughlin, E. J., Muntner, P., Ovbiagele, B, Smith, S. C., Jr., Spencer, C. C., Stafford, R. S., Taler, S. J., Thomas, R. J., Williams, K. A., Sr., Williamson, J. D. & Wright, J. T., Jr. (2018). A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Hypertension*, 71, e13-e115.
- WHO global status report on hypertension (2023). World Health Organization. Available at <https://www.who.int/news-room/factsheets/detail/hypertension>. Retrieved on 7th Jan 2024 at 1.00am.
- Mills, K. T., Bundy, J. D., Kelly, T. N., Reed, J. E., Kearney, P. M., Reynolds, K., Chen, J. & He, J. (2016). Global Disparities of Hypertension Prevalence and Control: A Systematic Analysis of Population-Based Studies from 90 Countries. *Circulation*, 134, 441-450.
- The incidence and prevalence of hypertension continue to increase around the world (Besworth et al., 2017)
- World Health Organization (WHO). Hypertension September 2025 <https://www.who.int/news-room/fact-detail>.
- Oghagbon EK, Okesina AB, Biliaminu SA. (2016). Prevalence of hypertension and associated variables in paid workers in Ilorin, Nigeria. *Niger J ClinPract*; 11(4):342-6.
- Augustine N, Odili Email BS, Benjamin D. (2017). Prevalence, Awareness, Treatment and Control of Hypertension in Nigeria. Retrieved from <https://globalheartjournal.com/articles/10.5334/gh.848>
- Nwoga, H. O. (2023). Assessment of risk factors for hypertension amongst the staff of a tertiary institution in Nigeria. *European Journal of Medical and Health Sciences*, 5(5), 75-80.
- Ghorbani, Z., Shamshirgaran, S. M., Ghaffari, S., Sarbakhsh, P., Najafipour, F., & Aminisani, N. (2018). Hypertension prevalence, awareness, treatment and its correlates among people 35 years and older: Result from pilot phase of the Azar cohort study. *Journal of education and health promotion*, 7(1), 45.
- 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. *Epidemiol Health*40: e2018020. <https://doi.org/https://doi.org/10.4178/epi h.e2018020>.
- Farag YM, Mittal BV, Keithi-Reddy SR, et al. Burden and predictors of hypertension in India: results of SEEK (Screening and Early Evaluation of Kidney Disease)

- study. *BMC Nephrol.* 2014;15:42. Published 2014 Mar 6. doi:10.1186/1471-2369-15-42
- Olanrewaju, T. O., Aderibigbe, A., Popoola, A., Buhari, M. O., Adedoyin, O. T., Kuranga, S. A., ... & Obajolowo, O. (2023). Prevalence of Hypertension and Relationship with Anthropometric Indices in Urban Dwellers in Kwara State, Nigeria: Prevalence and Predictors of hypertension in Kwara State. *Tropical Journal of Medical Research*, 22(1), 17-25.
- Kusuma, Y. S., Gupta, S. K., & Pandav, C. S. (2009). Knowledge and perceptions about hypertension among neo-and settled-migrants in Delhi, India. *CVD Prevention and Control*, 4(2), 119-129.
- Wolde, M., Azale, T., Debalkie Demissie, G., & Addis, B. (2022). Knowledge about hypertension and associated factors among patients with hypertension in public health facilities of Gondar city, Northwest Ethiopia: Ordinal logistic regression analysis. *PLoS One*, 17(6), e0270030.
- Sambou, M. L., Bafei, S. E. C., & Bass, P. (2024). Factors associated with knowledge of hypertension risk factors and symptoms among Gambian women: A cross-sectional study based on the Gambia Demographic and Health Survey. *Preventive Medicine Reports*, 42, 102754..
- Gaffari-Fam S, Babazadeh T, Oliaei S, Behboodi L, Daemi A (2020) Adherence to a health literacy and healthy lifestyle with improved blood pressure control in Iran. *Patient Prefer Adherence* 14: 499-506.
- Vierhapper H., Wagner O., Nowotny P, Waldhäusl W (2010). *Effect of endothelin-1 in man Circulation* 81: 1415-1418
- Kisokanth, G., Ilankoon, I. M. P. S., Arulanandem, K., Goonewardena, C. S. E., Sundaresan, K. T., & Joseph, J. (2016). Assessment of Knowledge on Hypertension, its consequences and management practices among hypertensive patients-A descriptive study. *Journal of the Postgraduate Institute of Medicine*, 3.
- Ali A.A and Jimoh A. (2011), Knowledge of hypertension among the staff of University of Ibadan, Nigeria. *Journal of Public Health and Epidemiology*, Vol. 3(5), pp. 204-209
- AG, N., Meenakshi, K., Porchelvan, S., Nair, H., Akshaya, S., & RoshiniPriya, V. (2020). Knowledge and Awareness on Complications of Hypertension among General Population; *International Journal of Research in Pharmaceutical Sciences*.