

Knowledge and Awareness of Hypertension amongst Medical Students of Rokhan University

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Abstract

Background: Hypertension is one of the leading non-communicable diseases worldwide and a major risk factor for cardiovascular diseases, stroke, kidney disease, and premature death. Improving knowledge and awareness among university students is essential for promoting early prevention and healthy lifestyle practices.

Objective: This study aimed to assess the knowledge, awareness, preventive practices, and attitudes regarding hypertension among students of Rokhan University.

Methods: A descriptive cross-sectional study is conducted among 89 students of Rokhan University. Primary data are collected using a structured questionnaire administered through Google Forms. The collected data are analyzed using descriptive statistics to evaluate participants' knowledge, awareness, preventive behaviors, and attitudes toward hypertension.

Results: Most participants are aged 21–25 years (77.5%), are third-year students (50.6%), and all respondents are male. The majority (83.1%) had heard about hypertension, while 96.6% correctly identified it as high blood pressure and 97.8% knew the normal blood pressure value. Smoking is the most frequently identified risk factor (57.3%). Most students believed hypertension could be prevented (86.5%) and recognized its serious health consequences (94.4%). However, 52.8% reported that they did not regularly monitor their blood pressure. Positive attitudes are observed, with 95.5% considering hypertension a serious health problem and 92.1% supporting regular exercise for prevention.

Conclusion: Rokhan University students demonstrated good knowledge and awareness of hypertension but showed inadequate preventive practices, particularly regular blood pressure monitoring. Continuous health education and healthy lifestyle promotion are recommended to strengthen hypertension prevention among university students.

Keywords: Hypertension, Knowledge, Awareness, University Students, Blood Pressure.

Introduction:

Hypertension, commonly known as high blood pressure, is a major public health concern and one of the leading causes of cardiovascular morbidity and mortality worldwide. It is often called a “silent killer” because many individuals remain asymptomatic for years while progressive damage occurs to vital organs, including the heart, kidneys, brain, and blood vessels. Uncontrolled hypertension significantly increases the risk of complications such as heart disease, stroke, and chronic kidney disease.

The increasing burden of hypertension is associated with changes in lifestyle patterns, including unhealthy dietary habits, high salt intake, physical inactivity, obesity, smoking, and increased stress levels. Although hypertension is more common among older adults, unhealthy behaviors developed during young adulthood may contribute to the future development of high blood pressure. Therefore, improving awareness and promoting preventive behaviors among university students are important strategies for reducing the future burden of hypertension.

University students represent an important population group because their knowledge, attitudes, and lifestyle choices can influence their long-term health outcomes. Adequate knowledge about hypertension, including its risk factors, complications, prevention methods, and the importance of regular blood pressure monitoring, can encourage individuals to adopt healthier behaviors.

In Afghanistan, non-communicable diseases such as hypertension are becoming increasingly important health challenges. However, limited studies have evaluated the level of hypertension awareness and preventive practices among university students. Understanding students’ knowledge and attitudes can help educational institutions develop effective health promotion programs.

This study is conducted at Rokhan University to assess the knowledge and awareness of hypertension among students. The findings of this research may provide valuable information regarding students’ understanding of hypertension and identify areas requiring further health education and awareness interventions.

Literature Review:

According to Shaikh, R. B., Mathew, E., Sreedharan, J., Muttappallymyalil, J., Al Sharbatti, S., & Basha, S. A. (2011). Which state that A study involving 110 participants found that awareness of modifiable cardiovascular disease (CVD) risk factors is generally higher than awareness of non-modifiable factors. Most participants correctly identified stress, high cholesterol, obesity, smoking, high salt intake, and high-calorie diets as important CVD risk factors. However, knowledge of non-modifiable risks such as family history, older age, and male gender is limited, with many participants failing to recognize their importance. Although nationality, course of study, raised blood pressure, and diabetes history are associated with better knowledge in unadjusted analyses, these associations are not significant after adjustment.

Based on Grad, I., Mastalerz-Migas, A., & Kiliś-Pstrusińska, K. (2015) which state that A study involving 250 secondary school adolescents reported that knowledge of hypertension is generally poor, with only 13.2% demonstrating a moderate level of awareness. Better knowledge is observed among urban students and those who had previously undergone blood pressure measurement. The study concluded that school-based education should place greater emphasis on hypertension symptoms, blood pressure screening, and family history to improve awareness.

According to Amponsem-Boateng, C., Oppong, T. B., Zhang, W., Boakye-Yiadom, J., Wang, L., Acheampong, K., & Opolot, G. (2022). That A cross-sectional study of 3,165 Ghanaian students aged 12–22 years found a hypertension prevalence of 19.9% and a prehypertension prevalence of 26.1%. Hypertension is significantly associated with weight, body mass index, waist circumference, physical

inactivity, and unhealthy dietary habits. The findings highlight the need for early screening and preventive interventions to reduce the future burden of hypertension among young adults.

Reported by Rashid, S. A., Awan, S. B., Ullah, H., Haroon, M., Latif, M. S., & Mehmood, S. (2017). Which stated that A cross-sectional study among 464 university students in Pakistan found that 72.4% had good knowledge of hypertension, while 27.6% had poor knowledge. Academic learning is the primary source of information, followed by newspapers and the internet. The study concluded that university students generally had good awareness of hypertension, highlighting the importance of educational institutions in promoting health knowledge.

According to Koçak, A., & Karataş, M. (2025). which stated that A cross-sectional study of 546 university students found that medical students had significantly better awareness of hypertension risk factors, diagnosis, and blood pressure monitoring than non-medical students. Female students demonstrated healthier lifestyle behaviors and more frequent blood pressure monitoring. The study emphasized the need for targeted health education, particularly among non-medical students, to improve hypertension awareness and reduce future cardiovascular risk.

Based on Devaraj, N. K., Rashid, A. A., Jamari, M. S., Sharif, N. F., & Paramesvaran, R. (2023). A cross-sectional study among 427 students and staff at Universiti Putra Malaysia found that most participants had good knowledge, attitudes, practices, and awareness regarding hypertension. Ethnicity is significantly associated with awareness among students, while age and professional field influenced hypertension-related practices among staff. The study concluded that the overall level of hypertension awareness is encouraging among current and future healthcare professionals.

According to Familoni, B. O., Ogun, S. A., & Aina, A. O. (2004). Which state that A study among 254 hypertensive patients in Nigeria revealed inadequate knowledge and awareness regarding hypertension and its complications. Many participants lacked awareness about asymptomatic hypertension, renal complications, and the need for lifelong treatment. The study emphasized the importance of structured health education programs to improve hypertension knowledge and self-management among patients.

As reported by Oliveria, S. A., Chen, R. S., McCarthy, B. D., Davis, C. C., & Hill, M. N. (2005). which state that A study among 826 hypertensive patients found that although general awareness of hypertension is high, detailed knowledge of blood pressure measurements and systolic blood pressure importance is limited. Only 30% of participants correctly identified both systolic and diastolic blood pressure values. The study highlighted the need for targeted patient education to improve understanding of blood pressure control and cardiovascular risk.

According to Yahia, N., Brown, C., Rapley, M., & Chung, M. (2014). Which states that A study among 243 university students assessed awareness of metabolic syndrome-related conditions and found that most students had good knowledge of hypertension, diabetes, stroke, and cardiovascular complications. Knowledge levels are higher among health science students, females, and senior students. The study emphasized the need for further awareness programs to improve understanding of metabolic syndrome and promote healthy behaviors among young adults.

As reported by Anyanti, J., Akuiyibo, S. M., Fajemisin, O., Idogho, O., & Amoo, B. (2021) which state that A cross-sectional study among 824 adults in Nigeria found high awareness of hypertension (94.4%) and diabetes (90.5%), but only 41.9% demonstrated good hypertension knowledge. Regular blood pressure and glucose screening practices are inadequate despite high awareness levels. The study highlighted the need for improved health education and interventions promoting healthy lifestyles and routine screening.

According to Getliffe, K. A., Crouch, R., Ms, H. G., Lake, F., & Wilson, S. L. (2000). Which states that A study among 653 university staff and students found that 68% of participants with elevated blood pressure are previously unaware of possible hypertension. Knowledge of hypertension and stroke is associated with healthy behaviors, previous screening, and personal experience of stroke. The study emphasized the need for improved awareness, regular blood pressure screening, and better hypertension management in university settings.

Based on Gong, D., Yuan, H., Zhang, Y., Li, H., Zhang, D., Liu, X., ... & Li, C. (2020). Which states

that A cross-sectional study among 611 community-dwellers at risk for hypertension in Shanghai found that over 75% had accurate knowledge of hypertension prevention, but healthy practices such as proper diet, physical activity, and weight control are inadequate. Knowledge and behaviors varied according to age, gender, and socioeconomic factors. The study highlighted the need for continued health education and preventive interventions to improve hypertension-related behaviors.

According to Devaraj, N. K., Rashid, A. A., Jamari, M. S., Sharif, N. F., & Paramesvaran, R. (2023). study conducted among students and staff at Universiti Putra Malaysia show their knowledge, attitude, practice, and awareness of hypertension. The study found that most participants had a good level of knowledge and awareness about hypertension. It also showed that some factors like age, gender, and education are not strongly related to knowledge levels among students. The researchers advice increasing awareness programs, campaigns, and educational activities to improve understanding of hypertension among university communities.

Based on Chinyere, O. I., Mwuese, U. P., & Ara, B. I. (2015). study has performed in a tertiary institution in Sub-Saharan Africa to assess the awareness and control of hypertension. The study found that many students had a low level of awareness about hypertension compared with developed countries. It also showed that poor knowledge about risk factors can increase the risk of hypertension. The researchers mentioned that health education is important to improve awareness among students and the community. They also suggested increasing information about lifestyle factors such as obesity and high salt intake.

According to Parekh, R. (2021). To Check the Knowledge of Hypertension amongst Undergraduate Physiotherapy Students Researchers assessed the knowledge about hypertension among undergraduate physiotherapy students. The research included 125 students from different years of study. Most students had good knowledge about normal and high blood pressure levels. The majority of students also knew that people with hypertension should take their medicines regularly and that high blood pressure can lead to heart disease and stroke. The findings showed that university students had a good understanding of hypertension and its health effects.

Based on Durai, V., & Muthuthandavan, A. R. (2015). Researchers assessed the knowledge and dietary practices among people with hypertension. The study found that many hypertensive patients had poor knowledge about reducing salt and fried food intake and increasing fruits and vegetables in their diet. The researchers highlighted the need for health education programs to encourage healthy eating habits among people with hypertension. They also suggested promoting awareness about low-fat and low-salt food choices to help control hypertension.

According to Adel, M. I., Hall, M. A., & Karawia, I. (2026). The researchers checked the knowledge of university students about heart diseases. The study found that students from engineering, applied sciences, and arts had less awareness compared with students from dentistry and pharmacy. Many students also did not have correct information about good and bad cholesterol and its effect on heart health. The researchers suggested giving more health education to students about healthy food, cholesterol, and ways to prevent heart diseases.

Methods:

This study employed a descriptive cross-sectional research design to assess the knowledge, awareness, attitudes, and preventive practices regarding hypertension among medical students at Rokhan University, Jalalabad, Afghanistan. The study is conducted during the designated study period, and data are collected using a structured online questionnaire created through Google Forms. The study population consisted of undergraduate medical students enrolled at Rokhan University, of whom 89 voluntarily participated in the survey.

The data collection instrument is a structured self-administered questionnaire developed according to the objectives of the study. The questionnaire comprised four sections: socio-demographic characteristics (including age, gender, year of study, marital status, and family history of hypertension); knowledge regarding hypertension (including awareness, definition, normal blood pressure values, risk

factors, complications, and prevention methods); practice and lifestyle behaviors (including regular blood pressure monitoring, exercise habits, salt intake, smoking status, and sources of health information); and attitudes toward hypertension (including perceptions of the severity of hypertension, concern about personal blood pressure, and the role of exercise in prevention).

The questionnaire link is distributed electronically through Google Forms, and participation is entirely voluntary. Before completing the questionnaire, participants are informed about the purpose of the study and assured that their responses would remain confidential. No personal identifying information is collected. After data collection, all responses are exported to Microsoft Excel, where the data are cleaned, organized, and analyzed. Descriptive statistical techniques, including frequency distributions, percentages, tables, charts, and graphs, are used to summarize and present the findings. The results are reported using frequencies and percentages to describe the levels of knowledge, awareness, attitudes, and preventive practices related to hypertension among the participating medical students. Ethical principles are maintained throughout the study by ensuring voluntary participation, protecting participants' privacy and confidentiality, and using the collected information solely for academic and research purposes.

Objectives:

- 1 To assess the level of knowledge of medical students regarding hypertension, including its definition, normal blood pressure values, risk factors, complications, and prevention methods.
- 2 To determine the level of awareness of hypertension among medical students.
- 3 To evaluate the attitudes of medical students toward hypertension and its prevention.
- 4 To assess the preventive practices and lifestyle behaviors of medical students, including blood pressure monitoring, physical activity, salt intake, and smoking habits.
- 5 To identify the main sources of health information about hypertension among medical students.
- 6 To describe the socio-demographic characteristics of the study participants, including age, gender, year of study, marital status, and family history of hypertension.
- 7 To provide evidence-based recommendations for improving hypertension awareness and preventive practices among medical students.

Results:

A total of 89 medical students from Rokhan University participated in this study. The majority of respondents (77.5%) are aged 21–25 years, indicating that most participants are young adults. Regarding the year of study, 50.6% are third-year students, followed by fourth-year (25.8%) and fifth-year (22.5%) students, while only 1.1% are second-year students. All respondents (100%) are male, and most (70.8%) are single. In addition, 42.7% of participants reported having a family history of hypertension, whereas 55.1% had no family history of the disease. The findings demonstrated a high level of knowledge regarding hypertension among the respondents. Most students (83.1%) had previously heard about hypertension, 96.6% correctly identified hypertension as high blood pressure, and 97.8% correctly recognized 120/80 mmHg as the normal blood pressure value. Regarding risk factors, smoking (57.3%) is the most frequently identified factor, followed by obesity and lack of exercise (23.6%), while fewer students recognized excessive salt intake and stress as important risk factors. Furthermore, 86.5% believed that hypertension is preventable, and 94.4% are aware that uncontrolled hypertension can lead to serious diseases.

Knowledge regarding hypertension-related complications is generally good, although some misconceptions are observed. Heart disease (43.8%) is the most commonly recognized complication, followed by kidney disease (15.7%). However, a considerable proportion of respondents (38.2%) incorrectly selected kidney stones as a complication of hypertension, indicating gaps in specific clinical knowledge. Although the respondents demonstrated good knowledge, their preventive practices are less satisfactory. More than half (52.8%) reported that they did not check their blood pressure regularly, and

50.6% measured their blood pressure only when they became ill. Only 25.8% checked their blood pressure monthly, while 14.6% did so every six months. These findings indicate that routine blood pressure monitoring is inadequate despite high awareness.

Regarding healthy lifestyle practices, 66.3% of students reported engaging in regular physical exercise, while 33.7% did not exercise regularly. More than half (51.7%) stated that they did not consume a high-salt diet, whereas 16.9% admitted consuming excessive salt and 27.0% are unsure about their salt intake. Most respondents (87.6%) are non-smokers, while 12.4% reported smoking. Additionally, 76.4% believed that reducing salt intake could help prevent hypertension. Doctors and healthcare workers (47.2%) are identified as the main source of information about hypertension, followed by books (42.7%), while social media, family members, and other sources played only a minor role in providing health information.

The participants also demonstrated a positive attitude toward hypertension prevention. Most respondents (95.5%) agreed that hypertension is a serious public health problem, 92.1% believed that regular exercise can help prevent hypertension, and 76.4% expressed concern about their own blood pressure. Overall, the study indicates that medical students at Rokhan University possess good knowledge, awareness, and positive attitudes regarding hypertension. However, important deficiencies remain in preventive practices, particularly in regular blood pressure monitoring and understanding of certain hypertension-related complications, highlighting the need for strengthened health education and behavior-change interventions among medical students.

Table No 1:

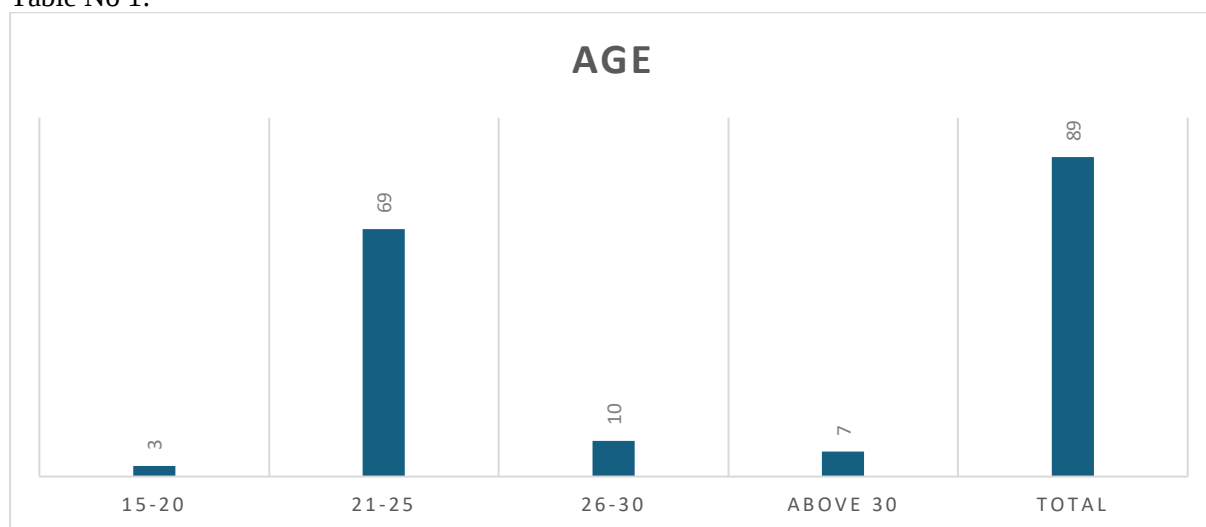


Chart 1: Age Distribution of Respondents

The majority of respondents (69; 77.5%) are aged 21–25 years, followed by 26–30 years (10; 11.2%), above 30 years (7; 7.9%), and 15–20 years (3; 3.4%). This indicates that the study population is predominantly composed of young adults aged 21–25 years.

Table No 2:

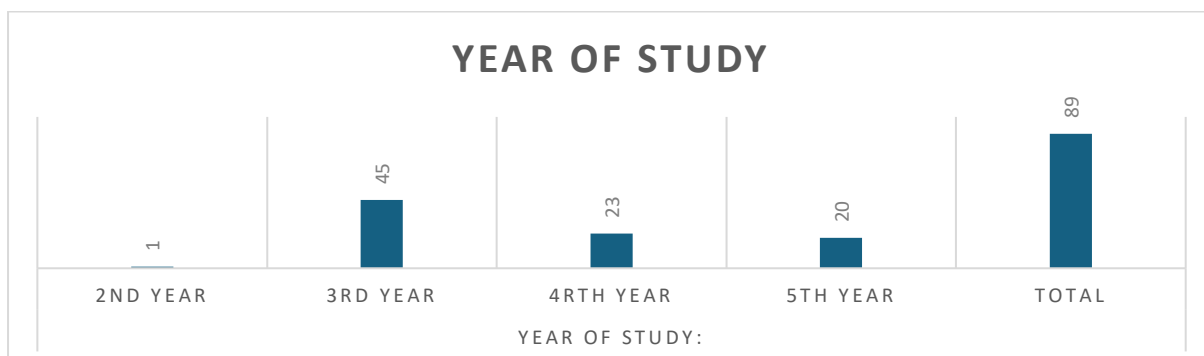


Chart2Analysis(YearofStudy):

The majority of respondents are from the 3rd year (45 students, ~50.6%), making it the most represented group. The 4th year (23 students, ~25.8%) and 5th year (20 students, ~22.5%) contributed moderately, while only 1 student (1.1%) is from the 2nd year, indicating limited representation from early-year students.

Table No 3:

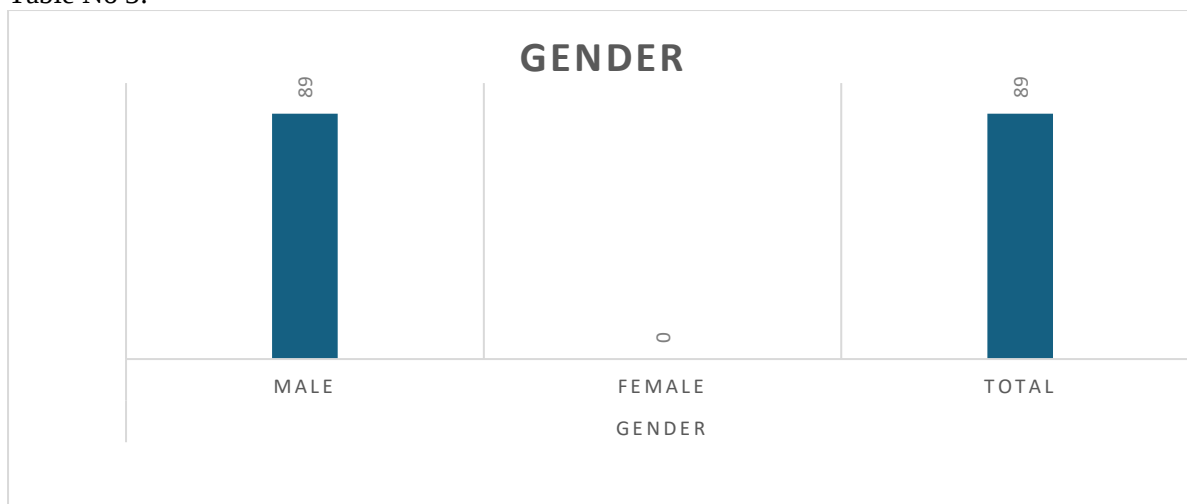


Chart 3 Analysis (Gender):

All respondents are male (89 students, 100%), with no female participation recorded.

Table NO 4:

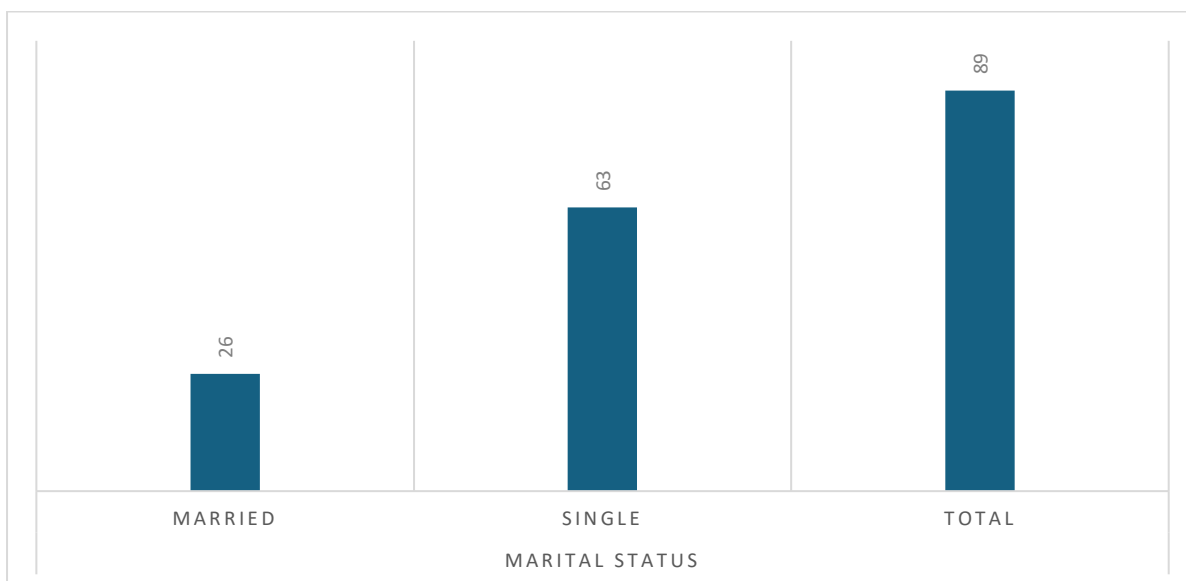


Chart 4 Analysis (Marital Status):

The majority of respondents are single (63 students, 70.8%), while 26 students (29.2%) are married. This shows that the sample predominantly consisted of unmarried students, with a notable proportion of married participants.

Table No 5:

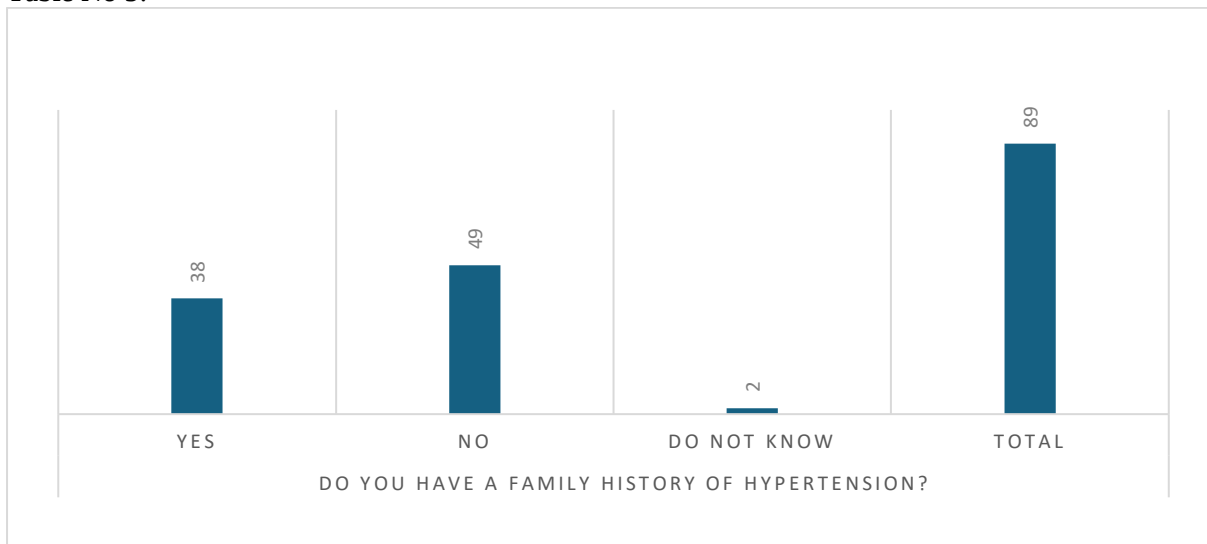


Chart 5 Analysis (Family History of Hypertension):

Nearly half of the respondents (38 students, 42.7%) reported a family history of hypertension, while 49 students (55.1%) had no such history. Only 2 students (2.2%) are unaware of their family history, indicating that most participants are aware of their family health background.

Table No 6:

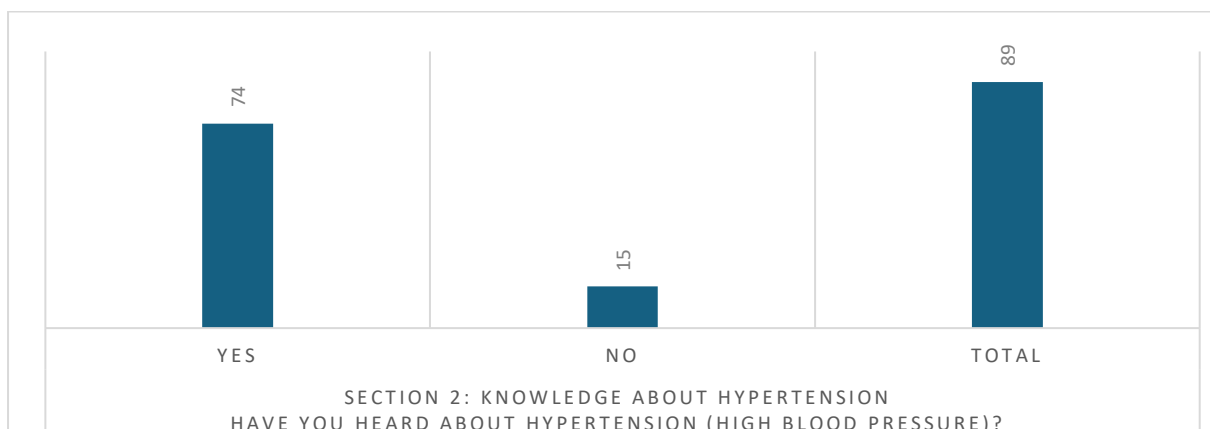


Chart 6 Analysis (Awareness of Hypertension):

Most respondents (74 students, 83.1%) had heard about hypertension (high blood pressure), indicating a high level of basic awareness among participants. However, 15 students (16.9%) had not heard about hypertension, suggesting the need for further health education and awareness programs.

Table No 7:

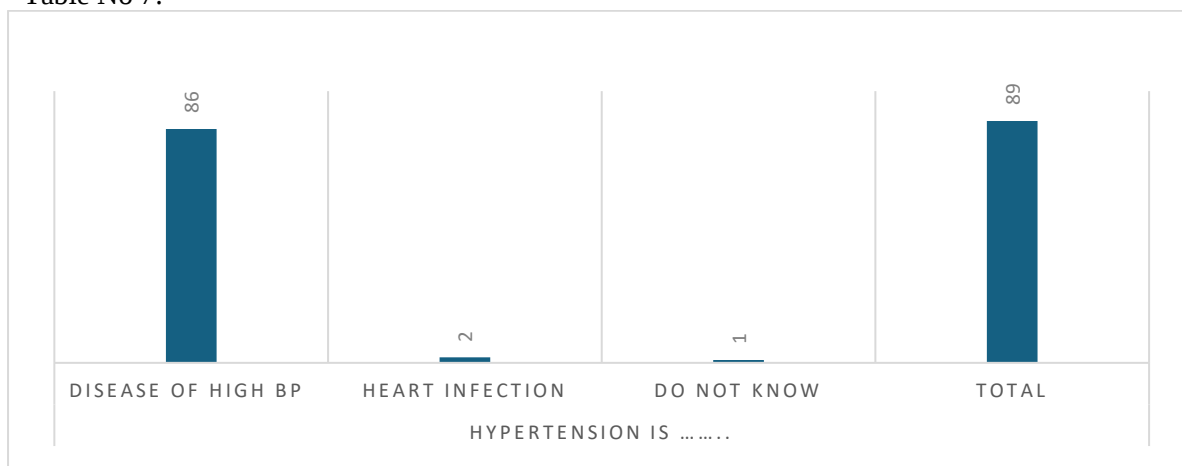


Chart 7 Analysis (Definition of Hypertension):

The majority of respondents (86 students, 96.6%) correctly identified hypertension as a disease of high blood pressure, showing strong knowledge about its basic definition. Only 2 students (2.2%) incorrectly considered it a heart infection, while 1 student (1.1%) did not know.

Table No 8:

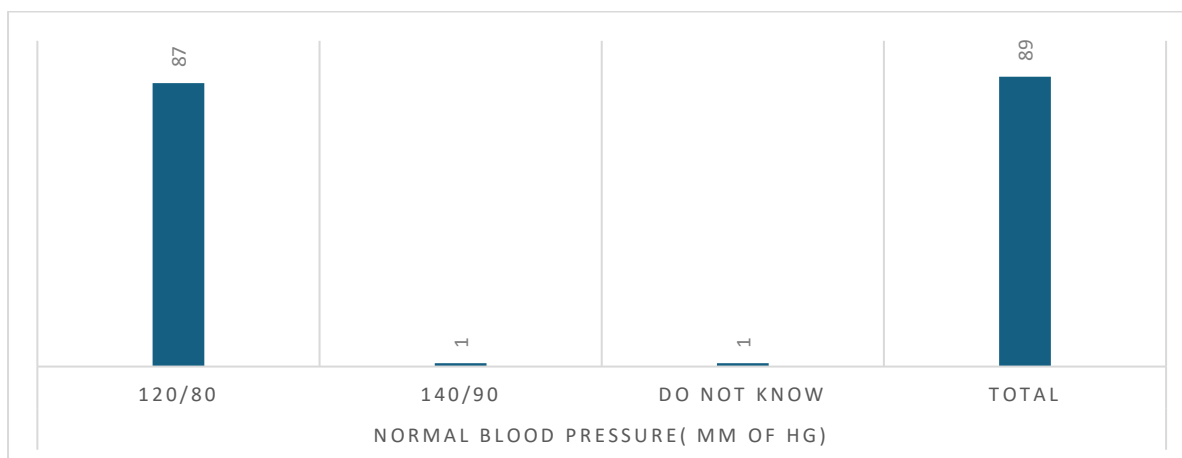


Chart 8 Analysis (Normal Blood Pressure Knowledge):

The majority of respondents (87 students, 97.8%) correctly identified 120/80 mmHg as the normal blood pressure value, indicating excellent knowledge regarding normal BP levels. Only 1 student (1.1%) selected 140/90 mmHg, while 1 student (1.1%) did not know the correct value.

Table No 9:

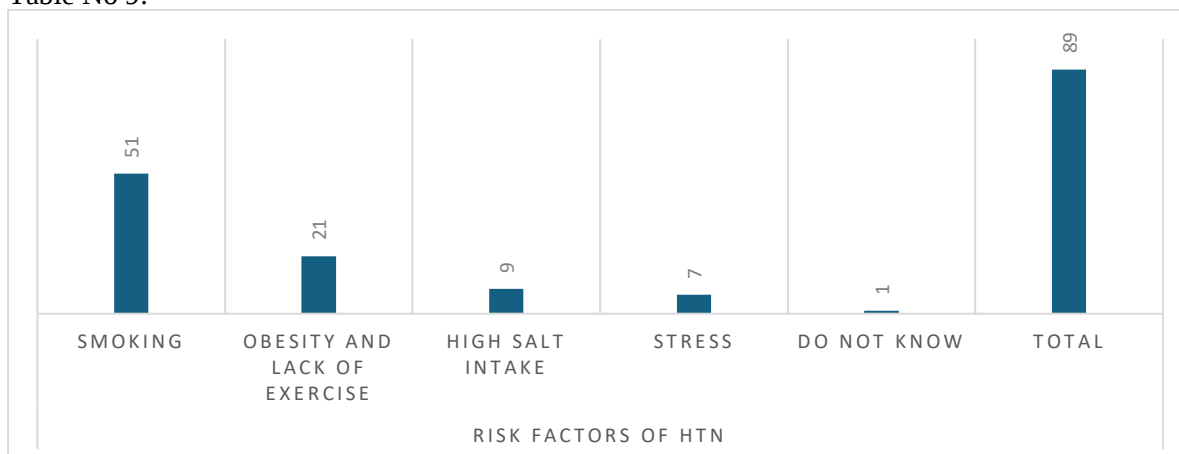


Chart 9 Analysis (Risk Factors of Hypertension):

Among respondents, smoking is the most commonly identified risk factor (51 students, 57.3%), followed by obesity and lack of exercise (21 students, 23.6%). Fewer participants recognized high salt intake (10.1%) and stress (7.9%) as risk factors, while only 1 student (1.1%) did not know, indicating generally good awareness of hypertension risk factors.

Table No 10:

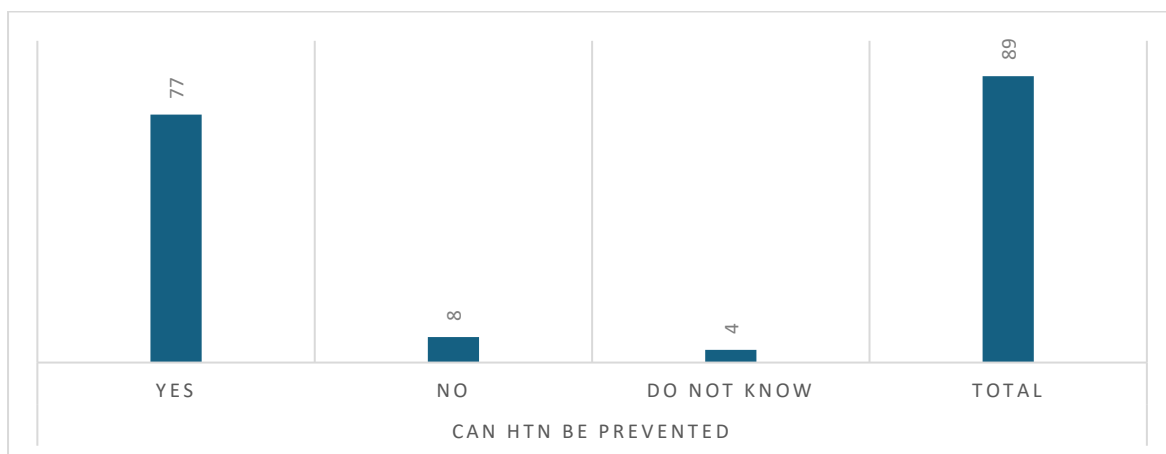


Chart 10 Analysis (Prevention of Hypertension):

Most respondents (77 students, 86.5%) believed that hypertension can be prevented, showing good awareness about preventive measures. However, 8 students (9.0%) responded that it cannot be prevented, while 4 students (4.5%) are unsure, indicating a need for further education regarding hypertension prevention.

Table No 11:

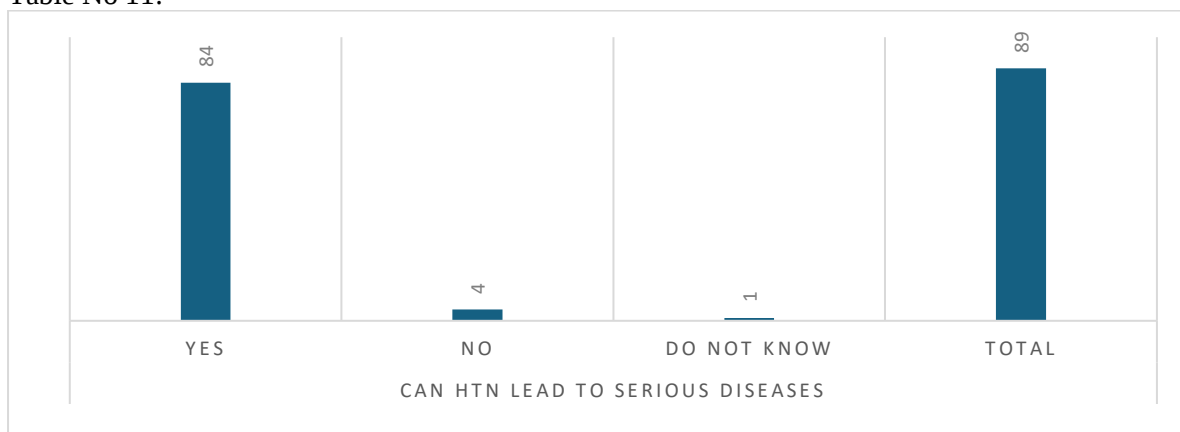


Chart 11 Analysis (Complications of Hypertension):

The majority of respondents (84 students, 94.4%) recognized that hypertension can lead to serious diseases, indicating strong awareness about its potential complications. Only 4 students (4.5%) believed it cannot cause serious diseases, while 1 student (1.1%) did not know.

Table No 12:

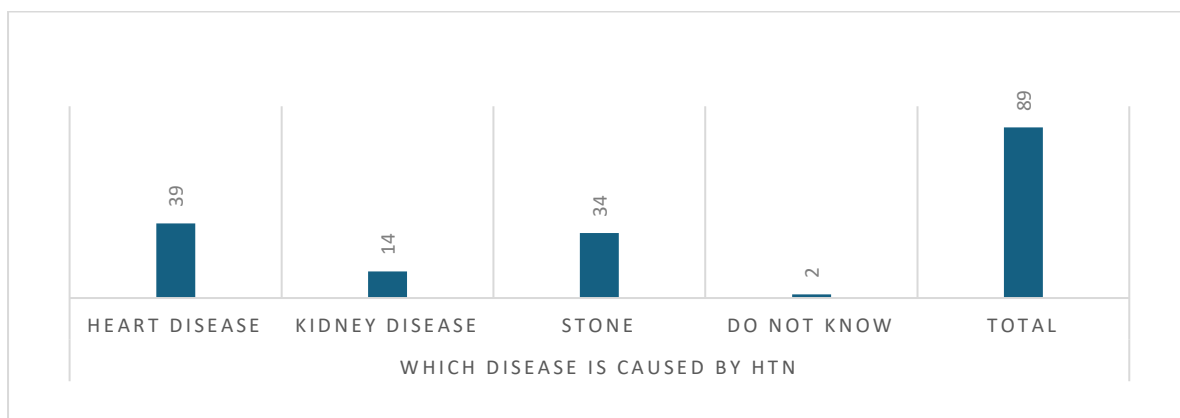


Chart 12 Analysis (Diseases Caused by Hypertension):

The most commonly identified complication of hypertension is heart disease (39 students, 43.8%), followed by stone (34 students, 38.2%) and kidney disease (14 students, 15.7%). Only 2 students (2.2%) did not know, suggesting that while general awareness is high, knowledge about specific hypertension-related complications requires improvement.

Table No 13:

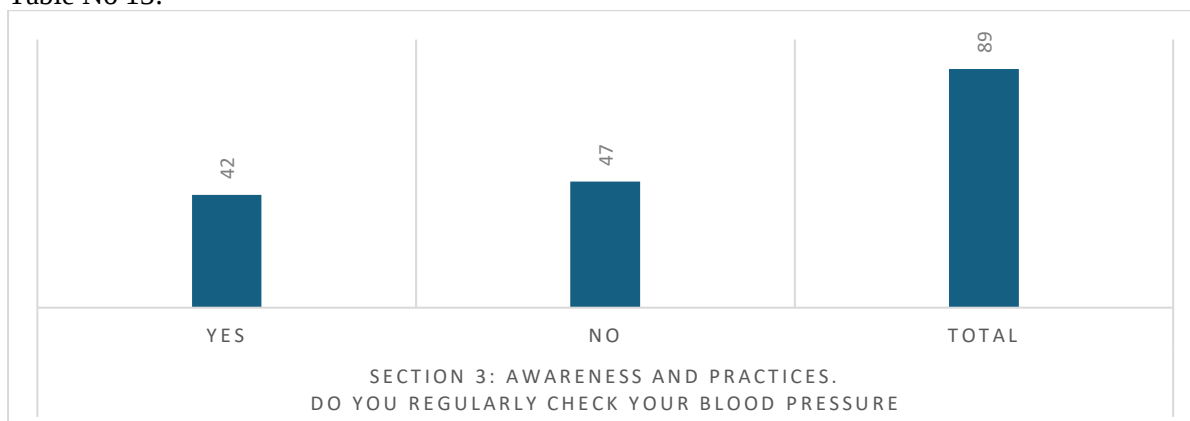


Chart 13 Analysis (Regular Blood Pressure Checking Practice):

The results show that 47 students (52.8%) did not regularly check their blood pressure, while 42 students (47.2%) reported regular BP monitoring. This indicates that despite good knowledge about hypertension, routine preventive practices such as regular BP checks are not followed by more than half of the respondents.

Table No 14:

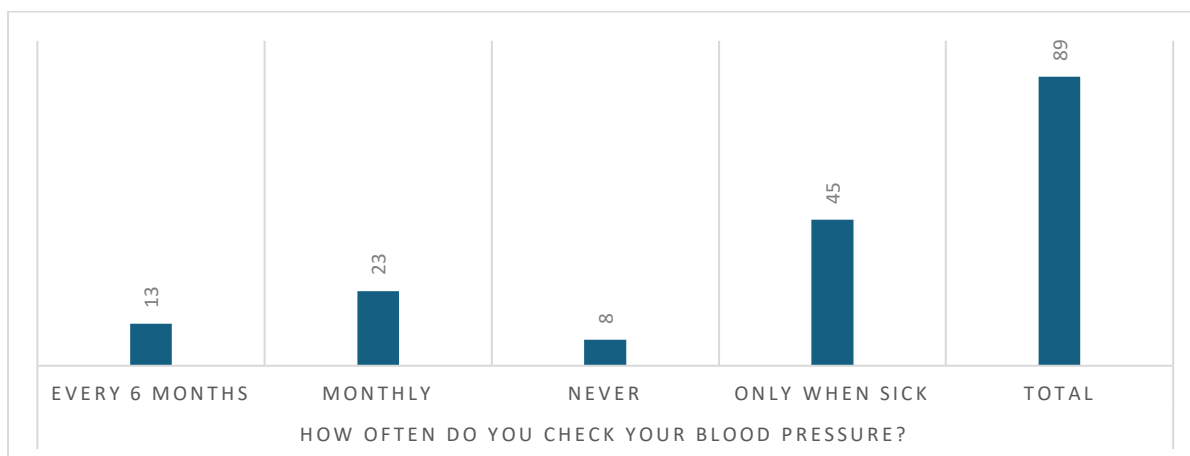


Chart 14 Analysis (Frequency of Blood Pressure Checking):

Among respondents, 45 students (50.6%) reported checking their blood pressure only when sick, while 23 students (25.8%) checked it monthly. 13 students (14.6%) monitored their BP every 6 months, and 8 students (9.0%) never checked their blood pressure. This indicates that regular BP monitoring practices are insufficient among many participants

Table No 15:

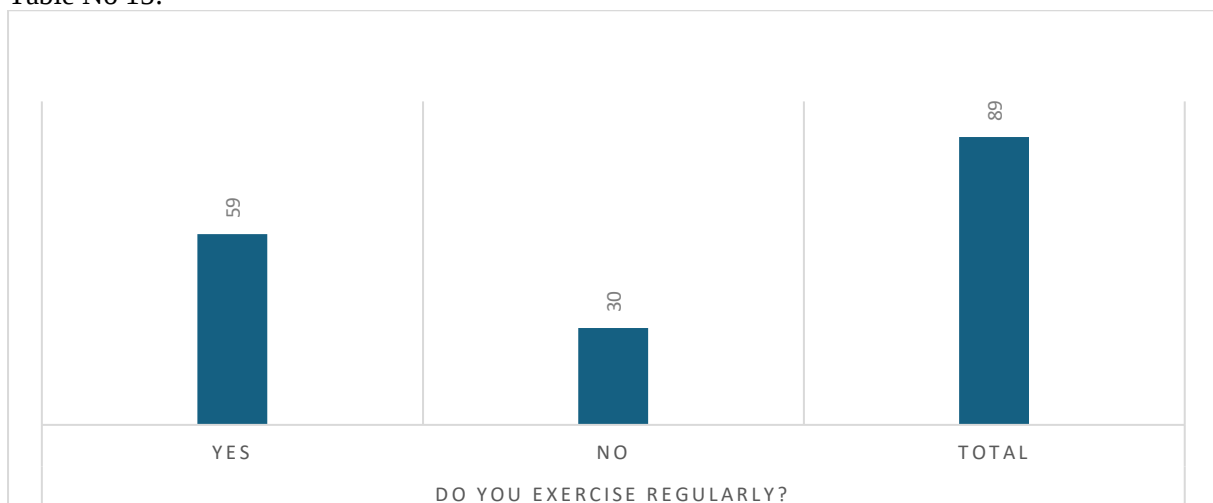


Chart 15 Analysis (Regular Exercise Practice):

More than half of the respondents (59 students, 66.3%) reported that they exercise regularly, while 30 students (33.7%) did not engage in regular exercise. This indicates a generally positive practice toward physical activity, although a significant proportion still lacks regular exercise habits.

Table NO 16:

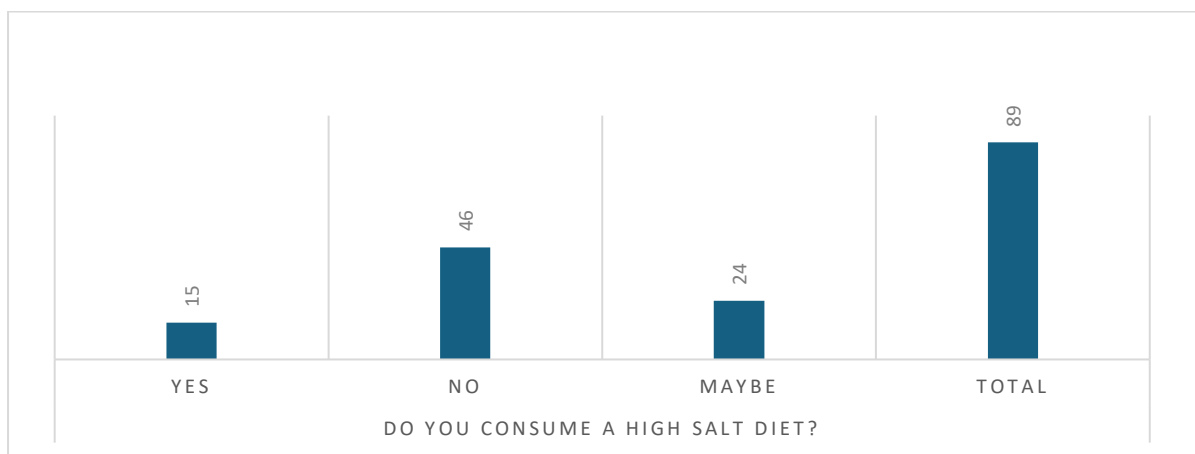


Chart 16 Analysis (High Salt Diet Consumption):

Most respondents (46 students, 51.7%) reported that they do not consume a high-salt diet, while 15 students (16.9%) admitted consuming high amounts of salt. Additionally, 24 students (27.0%) are unsure, indicating a lack of awareness regarding dietary salt intake and its association with hypertension risk.

Table No 17:

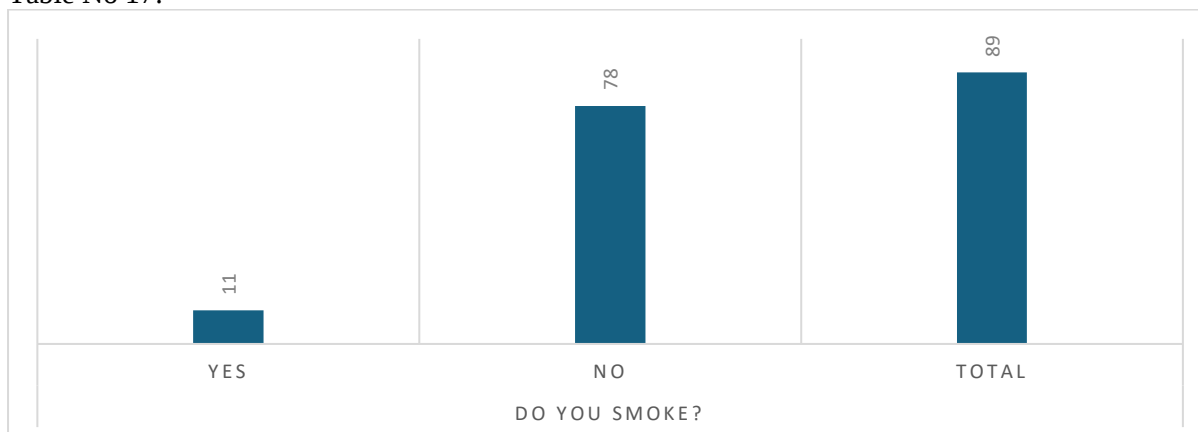


Chart 17 Analysis:

The majority of respondents (78 students, 87.6%) reported that they do not smoke, while 11 students (12.4%) are smokers. This indicates a relatively low prevalence of smoking among participants, although the presence of smokers highlights the need for continued awareness about smoking as a risk factor for hypertension.

Table No 18:

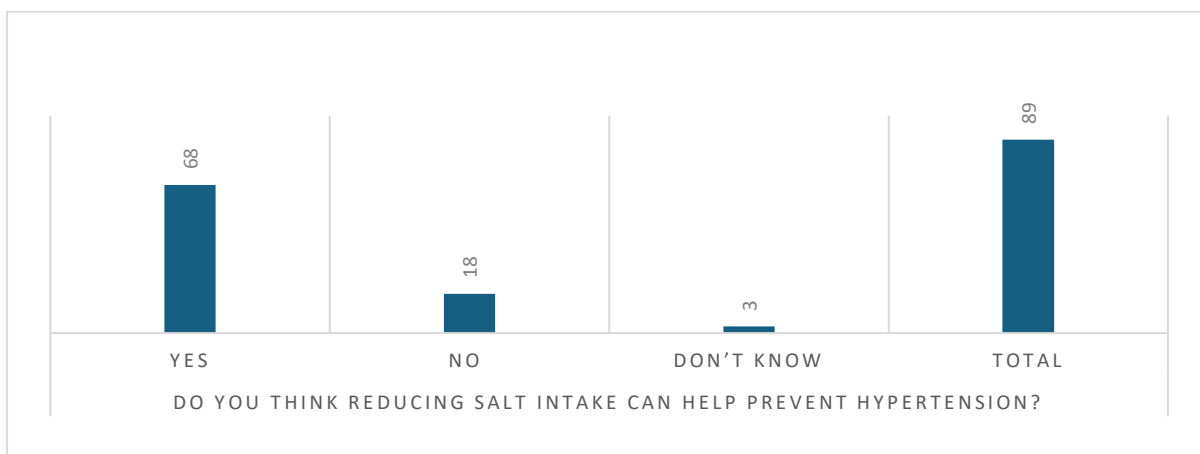


Chart 18 Analysis (Salt Reduction and Prevention of Hypertension):

Most respondents (68 students, 76.4%) believed that reducing salt intake can help prevent hypertension, showing good awareness of dietary prevention strategies. However, 18 students (20.2%) disagreed, and 3 students (3.4%) are unsure, indicating that some participants still require further education about the role of salt reduction in blood pressure control.

Table No 19:

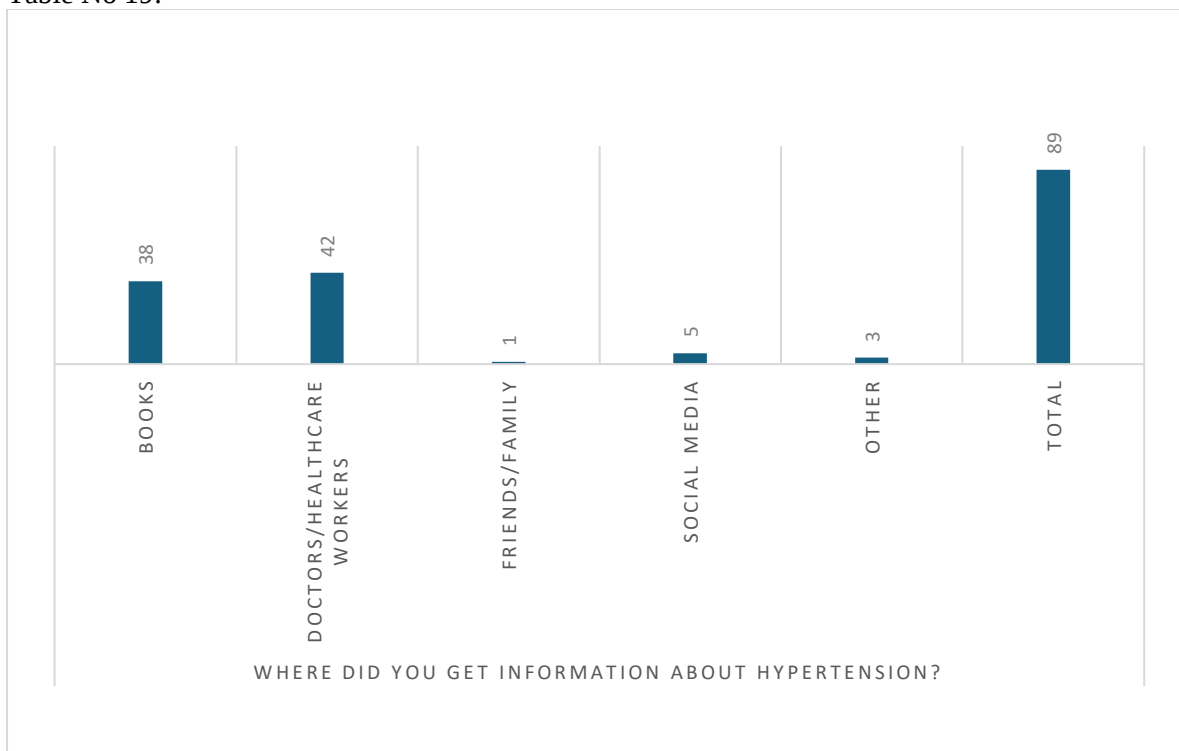


Chart 19 Analysis (Sources of Hypertension Information):

The main sources of hypertension information are doctors/healthcare workers (42 students, 47.2%) and

books (38 students, 42.7%). Other sources such as social media, family/friends, and others contributed minimally.

Table No 20:

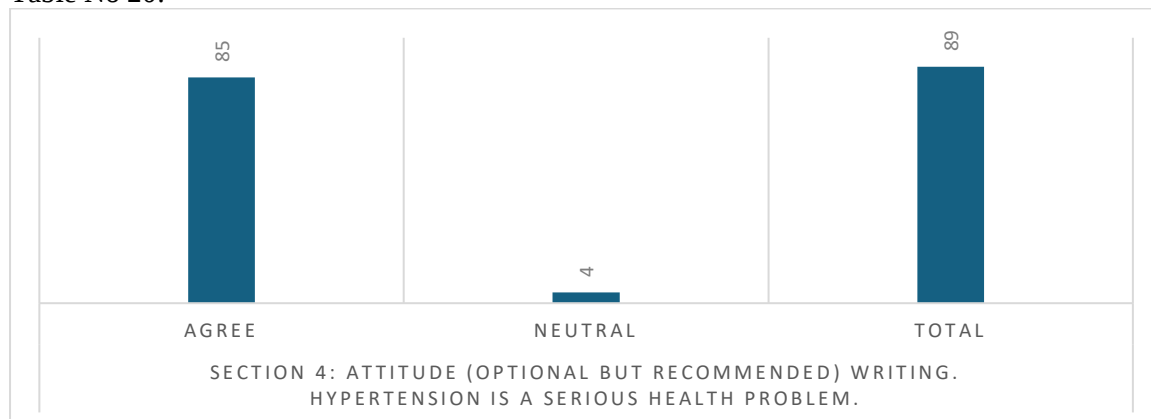


Chart 20 Analysis (Attitude Toward Hypertension Severity):

Most respondents (85 students, 95.5%) agreed that hypertension is a serious health problem, while 4 students (4.5%) are neutral, showing a strong perception of its health importance.

Table No 21:

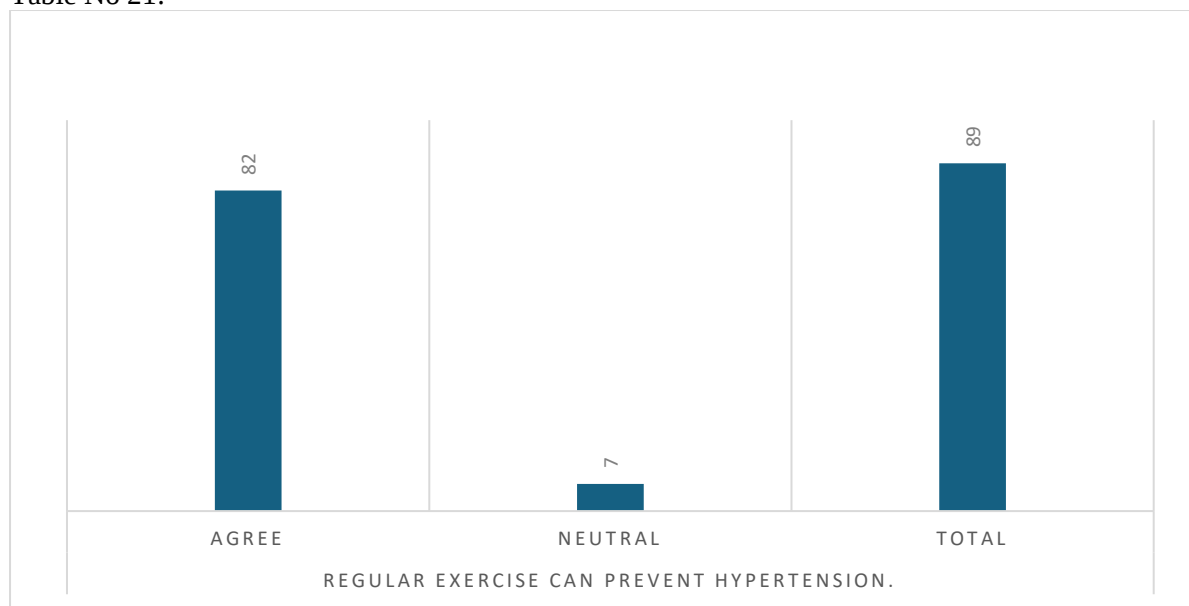


Chart 21 Analysis (Attitude Toward Exercise and Hypertension Prevention):

The majority of respondents (82 students, 92.1%) agreed that regular exercise can prevent hypertension, while 7 students (7.9%) are neutral, indicating positive attitudes toward exercise as a preventive measure.

Table No 22:

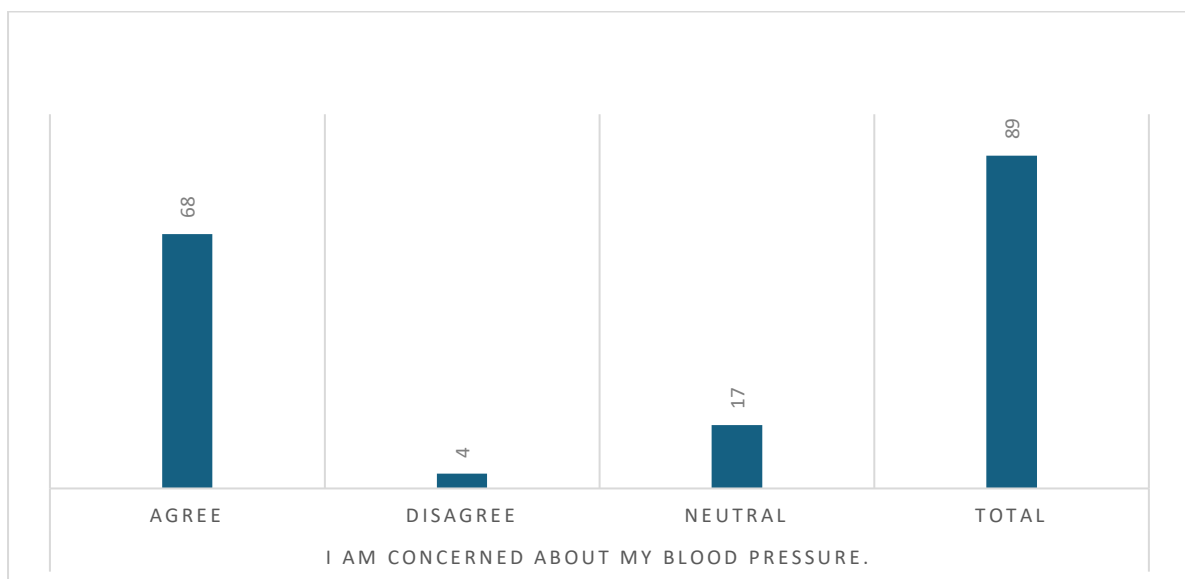


Chart 22 Analysis (Concern About Blood Pressure):

Most respondents (68 students, 76.4%) agreed that they are concerned about their blood pressure, while 17 students (19.1%) are neutral and 4 students (4.5%) disagreed, showing a high level of concern regarding BP health.

Discussion:

The present study assessed the knowledge, awareness, attitudes, and preventive practices regarding hypertension among medical students at Rokhan University, Jalalabad, Afghanistan. The findings indicate that the majority of participants had good knowledge and positive attitudes toward hypertension. Most respondents had heard about hypertension, correctly identified it as high blood pressure, and recognized the normal blood pressure value. These findings suggest that medical education has been effective in providing students with fundamental knowledge about hypertension. The study also demonstrated that most students are aware that hypertension is preventable and can lead to serious health complications. In addition, the majority considered hypertension a serious public health problem and believed that regular exercise is an important preventive measure. These positive attitudes are encouraging because they may influence future clinical practice and patient education when these students become healthcare professionals.

Despite the high level of knowledge, preventive practices are less satisfactory. More than half of the participants reported that they did not regularly monitor their blood pressure, and many checked it only when they are ill. This gap between knowledge and practice suggests that awareness alone does not always translate into healthy behavior. Improving personal health practices among medical students is essential, as they are expected to serve as role models for the community. The study further showed that while students correctly identified smoking as a major risk factor, fewer respondents recognized excessive salt intake, obesity, physical inactivity, and stress as important contributors to hypertension. Moreover, a considerable proportion incorrectly identified kidney stones as a complication of hypertension, indicating gaps in knowledge regarding the disease's clinical consequences. These findings suggest that although basic knowledge is strong, further education is needed on specific risk factors and complications.

Regarding lifestyle practices, most respondents reported regular exercise and did not smoke, reflecting generally healthy behaviors. However, uncertainty regarding dietary salt intake and inadequate routine blood pressure monitoring indicate that preventive behaviors require further improvement. Doctors and healthcare workers are identified as the primary source of hypertension information, emphasizing the important role of healthcare professionals in promoting public health education. Overall, the findings demonstrate that medical students possess good knowledge and favorable attitudes toward hypertension but show deficiencies in translating this knowledge into consistent preventive practices. Strengthening practical health education and encouraging routine self-monitoring may help bridge this gap and contribute to improved cardiovascular health among future healthcare professionals.

Conclusions:

This study assessed the knowledge, awareness, attitudes, and preventive practices regarding hypertension among medical students at Rokhan University, Jalalabad, Afghanistan. The findings revealed that the participants had a generally good level of knowledge and awareness about hypertension. Most students correctly identified hypertension as high blood pressure, recognized the normal blood pressure level, understood that hypertension can be prevented, and acknowledged its potential to cause serious health complications. In addition, the majority demonstrated **positive** attitudes toward hypertension prevention by recognizing the importance of regular exercise and considering hypertension a serious public health concern.

However, despite this satisfactory level of knowledge, the study identified important gaps in preventive practices. More than half of the respondents did not monitor their blood pressure regularly, and many measured it only when they experienced illness. Furthermore, misconceptions regarding some hypertension-related complications and limited recognition of certain modifiable risk factors, such as excessive salt intake and stress, indicate areas requiring further educational reinforcement. Overall, the study concludes that while medical students possess adequate theoretical knowledge and favorable attitudes

toward hypertension, this knowledge is not consistently translated into appropriate preventive health practices. Strengthening practical health education, promoting regular blood pressure screening, encouraging healthy lifestyle behaviors, and integrating preventive cardiovascular health activities into medical training are essential to improve students' personal health practices and prepare them to become effective health educators and future healthcare professionals.

Recommendations

- 1 Hypertension awareness and prevention programs should be conducted regularly for medical students to reinforce existing knowledge.
- 2 Universities should encourage students to monitor their blood pressure routinely through periodic on-campus screening activities.
- 3 Educational sessions should emphasize less-recognized hypertension risk factors, including excessive salt intake, obesity, physical inactivity, and stress.
- 4 Greater attention should be given to teaching the complications of uncontrolled hypertension to address existing misconceptions.
- 5 Health promotion campaigns should encourage healthy lifestyle behaviors, including regular physical activity, smoking avoidance, and reduced dietary salt intake.
- 6 Faculty members and healthcare professionals should continue serving as reliable sources of evidence-based health education for students.
- 7 Practical training on cardiovascular disease prevention should be incorporated into the medical curriculum.

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Conflict of Interest

The authors declare that they have no conflict of interest regarding the publication of this research.

Ethics Approval

Ethical approval for this study is obtained from the Research Ethics Committee of Rokhan University, Afghanistan, prior to data collection. The study is conducted in accordance with the ethical principles of the Declaration of Helsinki. Participation is voluntary, and participants' anonymity and confidentiality are maintained throughout the study.

Informed Consent

Written informed consent is obtained electronically from all participants before they completed the questionnaire. Participants are informed about the purpose of the study, their right to withdraw at any time, and the confidentiality of their responses.

Data Availability

The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request. The data are not publicly available because they contain information collected from individual participants.

Author Contributions

Dr. Subhanullah Hamidi: Conceptualization, study design, data collection, and manuscript preparation.

Dr. Muhammad Tariq Noor: Supervision, methodology development, data analysis, manuscript writing, and corresponding author.

Dr. Khyber Iqbal Safi: Literature review, interpretation of findings, and critical revision of the manuscript.

Dr. Shahinshahmohboob: Data validation, manuscript editing, and final review of the manuscript.

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