

# Knowledge of Hypertension and Its Preventive Measures as Wellness Promotion Among Teachers

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The totality of work that a teacher does exert a lot of pressure on the health and wellbeing of a teacher if not well handled and balanced with other life demands. It is therefore germane for teachers to have a sound scientific knowledge of hypertension (also known as high blood pressure—BP) and its preventive measures in order to lead a healthy lifestyle that will promote wellness. School teachers are prone to developing hypertension due to their work-related risk factors such as stress from coordinating students and other teaching related habits and non-teaching habits. An individual's knowledge of a phenomenon or disease can influence the individual's actions and reactions to the phenomenon. The theoretical framework adopted in this study is the Health-Belief Model (HBM) which describes how knowledge can be used to adopt healthy behaviors, especially; the perceived feeling that this problem is avoidable can contribute to the adoption of healthy behaviors and healthy lifestyles. Questionnaire instrument was used to collect data from a randomly selected sample of teachers and also on the spot assessment of BP using a BP machine (Andon Automatic Blood Pressure Monitor with Memory). The findings of the study suggest that there are gaps in knowledge regarding hypertension among teachers which could influence their behaviors towards prevention. Wellness in the workplace improves employee health and organization's bottom line. Creating a worksite culture of health and wellness boosts and maintains employee's morale, improves the lives of employees, and helps to drive an organization's overall success.

*Keywords:* hypertension, teacher, blood pressure, prevention, health, wellbeing

## Introduction

Hypertension is defined by the American College of Cardiology and the American Heart Association as an abnormally high arterial blood pressure (BP) in adults when the systolic blood pressure is 130 mmHg or greater or the diastolic blood pressure is 80 mmHg or greater. The American Heart Association, Centers for Disease Control and Prevention and the World Health Organization (WHO) all state that hypertension is a leading

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independent risk factor for cardiovascular diseases, cerebrovascular accidents (strokes), heart diseases and failure, and chronic kidney diseases and failure (AHA, 2018; Cifu & Davis, 2017; Merai et al., 2016; WHO, 2020). It is estimated that half the population of adults in the United States have hypertension and only one in four of these adults have their BP under control (CDC, 2016) and it is a similar picture in Nigeria and globally. Whelton et al. (2018) asserted that given the trend and increasing prevalence rates of hypertension with ageing, limited access to medical-care, and increased co-morbidity; the consequences of hypertension are expected to increase. Recommended non-pharmacological evidence-based interventions including education, lifestyle modification, and medication adherence to manage hypertension have been shown to decrease BP and reduce the incidents of heart diseases, strokes, and kidney failures (Cifu & Davis, 2017). However, the knowledge and the preventive measures one employs will aid healthy living.

Hypertension is the fourth leading cause of premature death in developed countries and the seventh in developing countries (World Health Organization, 2019). It affects about 1.13 billion people and is responsible for about nine million deaths worldwide (World Health Organization, 2019). Lack of appropriate knowledge and preventive measures of hypertension increases the death rate in the society. It is important to note that teachers are not spared from the threat of hypertension. Studies have shown that school teachers are prone to developing hypertension due to their work-related risk factors such as stress from coordinating students and other teaching related habits and not forgetting the non-work-related risk factors like unhealthy eating, overweight, and a less locomotive lifestyle (Vijayakumar et al., 2013). Although they are an educated group in the society, their carelessness on the subject matter accounts for these reported increased cases. Wjayathunge and Hettiaratchi (2017) stated that it is important to study teachers' knowledge and preventive measures of hypertension, as their physical and mental condition will affect the quality of the education of their students. Teachers with a good understanding of hypertension prevention measures can positively influence their students' lifestyles and spread these health messages to the society as they are the students' society's role models. The prevention of hypertension is important to reduce the high prevalence and the incidence of hypertension and can help reduce the resulting morbidity and consequences of cardiovascular diseases (Bariua, Alam, Parvin, & Chowdhary, 2018). An individual's knowledge of a phenomenon or disease can influence the individual's actions and reactions to the phenomenon (Rosenstock, Strecher, & Becker, 1988). The health-belief model describes how knowledge can be used to adopt healthy behaviors by understanding the severity of the problem, and at the same time, the perceived feeling that this problem is avoidable (Rosenstock et al., 1988).

The terms "health" and "wellness" are often used interchangeably, but the terms do have different meanings. The primary difference between health and wellness is that health is the goal and wellness is the active process of achieving it (Murdock, 2019). Wellness in the workplace improves employees' health and improves an organization's bottom line. Creating a worksite culture of health and wellness boosts and maintains employees' morale, improves the lives of employees, and helps to drive an organization's overall success (Murdock, 2019).

The totality of work that a teacher does exerts a lot of pressure on the health and wellbeing of a teacher if not well handled and balanced with other life demands. It is therefore germane for teachers to have a sound scientific knowledge of hypertension and its preventive measures in order to lead a healthy lifestyle that will promote wellness. The study therefore investigated secondary school teachers' knowledge and preventive measures of hypertension as wellness promotion. The aim of the study was specifically to find out teachers'

knowledge of hypertension, their practice of preventive measures, and to ascertain their knowledge of the risk factors of hypertension as wellness promotion. The following research questions were then posited for the study:

1. To what extent does a secondary school teacher have knowledge of hypertension?
2. To what extent does a secondary school teacher practice preventive measures of hypertension?
3. To what extent does a secondary school teacher know the risk factors of hypertension as wellness promotion?

### **Method**

The design of the study was a descriptive survey with a sample size of 124 teachers from the six secondary schools in Amassoma community in Bayelsa State of Nigeria. Amassoma though a rural community, has been urbanized due to the establishment of the first State University (Niger Delta University) in the community. Amassoma is today one of the fastest growing communities in Bayelsa State due to the influx of students, business men and women, and workers of the University. Bayelsa State is one of eight States in the South-South Geo-Political Zone of Nigeria which is rich in natural resources but very poor due to faulty governance and corruption.

Since the population of the study was 124 teachers from the six secondary schools in Amassoma; the population then equals the sample. The schools are: Fortunate Group of Schools, Community Secondary School Amassoma, TWEN Academy, Chris Glad Schools, NDU Demonstration School, and Government Secondary School Amassoma. Two schools out of the six are public secondary schools, while the remaining four are private secondary schools. Knowledge Questionnaire (KQ) was used to collect data from the teachers and also on the spot assessment of blood pressure (BP) using a BP machine (Andon Automatic Blood Pressure Monitor with Memory).

The data collection process was implemented based on ethical procedures. First, a letter of approval was obtained from the Department of Science Education Research Board, a subsidiary of the Niger Delta University Research Committee. The purpose of the study was explained to the participants, and their consent to participate in the research sought. Participation was voluntary, and the participants were asked to provide their consent. The data collectors were trained on how to handle the participants and the data to be collected (in terms of collecting their blood pressure readings). Participants were also informed that the information they would provide would be kept confidential and used only for study purposes. The privacy of the participants and data confidentiality was not violated at any stage in this study. Data were analyzed using percentages and results were presented in Tables 1 to 5.

### **Results and Discussion of Findings**

The results of the study are presented in Tables 1 to 5 and the research questions are answered accordingly. Tables 1 and 2 were the demographic data of age and gender collected vis-à-vis blood pressure readings, whilst Tables 3 to 5 answered the three research questions posited in the study.

The ages of the respondents span through age 20 to 51 and above. From Table 1, the age bracket of 41 to 51 years had the highest number of participants ( $n = 45$  out of the total of 124 participants) with an average BP readings of 136/87. The younger participants (aged 20-30 years) had optimum BP reading (113/75) while the older participants (51 years and above) had the highest BP reading of 142/88. This finding collaborated with Amanyire et al. (2019) who also found that blood pressure increases with age of the participants.

Table 1

*Age Against Blood Pressure (BP) Readings*

S/N	Age	No. of teachers	Percentage	Total B/P readings	Average BP readings
1	20-30	15	12.10%	1,670/1,117	113/75
2	31-40	25	20.16%	3,203/2,066	128/82
3	41-50	45	36.29%	6,085/3,903	136/87
4	51 and above	39	31.45%	552/3,430	142/88

Source: Field work, 2023.

Table 2

*Distribution of Research Sample by Gender and Blood Pressure Readings*

Gender	No. of teachers	Percentage	Total B/P readings	Average BP readings
Male	51	41.13%	6,906/4,267	135/84
Female	73	58.87%	9,521/6,102	130/84

Source: Field work, 2023.

The study sample has more females ( $n = 73$ ) than males ( $n = 51$ ) as the sample comprises all the teachers in the various schools as all were willing to participate in the study (there was no randomization). This goes to show that the teaching workforce has more female than male. The average BP readings of the female participants were slightly lower than their male counterpart (especially the systolic reading). This finding contrasts with Ajewole, Fasoro, and Agbana (2017) whose study finds males have higher blood pressure reading than females.

Table 3

*Research Question One: What Is the Knowledge of Hypertension of Secondary School Teachers?*

S/N	Questionnaire items	Accurate (%)	Inaccurate (%)	Decision
1	Which of these readings in mmHg as shown below is within the normal range of blood pressure?	70 (56.44%)	54 (43.54%)	Moderate (Total score of 51-70)
2	Can hypertension lead to stroke or heart attack?	80 (64.51%)	58 (46.77%)	Adequate (Total score of 71 and above)
3	All of this can trigger hypertension except?	66 (53.22%)	58 (46.77%)	Moderate
4	Which is not a sign/symptom of hypertension?	69 (55.64%)	55 (44.35%)	Moderate
5	Excessive salt consumption is ideal for a hypertensive patient.	48 (38.70%)	76 (61.28%)	Inadequate (Total score of 50 and below)
Total decision from the respondent				Moderate

Source: Field work, 2023.

Various knowledge questions and statements were asked the respondents (as contained in the questionnaire item column in Table 3 above). Their responses were summed up into accurate and inaccurate. Accurate response indicates an understanding of the knowledge of hypertension while inaccurate indicates that participant do not understand the knowledge. The decision was judged based on the total summation of accurate and inaccurate responses. Accurate response of 50 marks and below is termed “inadequate knowledge”, while a total response of 51 to 69 marks is termed “moderate knowledge” and a total response of 70 and above is termed “adequate knowledge”. The participants demonstrated moderate knowledge of hypertension.

A similar pattern of moderate practice was demonstrated on the preventive measures of hypertension as seen in Table 4.

Table 4

*Research Question Two: To What Extent Does a Secondary School Teacher Practice Preventive Measures of Hypertension as Wellness Promotion?*

S/N	Questionnaire items	Yes (%)	No (%)	Decision
1	Limiting alcohol consumption helps to reduce the risk of hypertension?	97 (78.2%)	27 (21.8%)	Adequate (Total score of 71 and above)
2	Maintaining a diet that is low in fat, cholesterol, and salt reduces the risk of hypertension?	68 (54.8%)	56 (45.2%)	Moderate (Total score of 51-70)
3	Performing 30-60 minutes physical activities daily reduces the risk of hypertension?	70 (56.5%)	54 (43.5%)	Moderate
4	Tobacco smoking does not increase the risk of hypertension?	53 (42.7%)	71 (57.3%)	Inadequate (Total score of 50 and below)
5	Consuming a diet that contains adequate fruits and vegetables on a daily basis reduces the risk of hypertension?	68 (54.8%)	56 (45.2%)	Moderate
Total decision for all respondents				Moderate

Source: Field work, 2023.

Table 5

*Research Question Three: To What Extent Does a Secondary School Teacher Know the Risks Factors of Hypertension as Wellness Promotion?*

S/N	Questionnaire items	Yes (%)	No (%)	Decision
1	Old age and co-existing diseases like diabetes or kidney increase the risk of hypertension?	108 (87.1%)	16 (12.9%)	Adequate (Total score of 71 and above)
2	Being overweight or obese increases the risk of hypertension?	83 (66.9%)	41 (33.1%)	Adequate
3	Abstaining tobacco smoking and excessive salt consumption increases the risk of hypertension?	114 (91.9%)	10 (8.1%)	Inadequate (Total score of 50 and below)
4	Eating adequate fruits and vegetables on a daily basis increases the risk of hypertension?	11 (8.9%)	113 (91.1%)	Adequate
Total decision for all the respondent				Adequate

Source: Field work, 2023.

Knowledge of risk factors of hypertension is the only variable among the three variables investigated that had an adequate demonstration of understanding by the participants (see Tables 3 and 4 having an average of moderate knowledge). This finding collaborated with Abdullahi and Amzat's (2021) findings of the participants having adequate knowledge of the risk factors of hypertension.

The findings of the study suggest that there are gaps in knowledge regarding hypertension among teachers which could influence their behaviors towards prevention. This agrees with the findings of Famuyiwa (2019) which conducted a study on knowledge and attitude of hypertension as health risk behavior of secondary school teachers in Oluyole Local Government of Oyo State, Nigeria. The study of Famuyiwa found out that teachers do not have adequate knowledge of hypertension (causes and symptoms of hypertension).

The findings from this study did not only collaborate with findings from studies in Nigeria but also with studies outside Nigeria. For example a study from Poland carried out by Paczkowska, Hoffmann, and Bryl (2020) on the impact of patient knowledge on hypertension treatment, adherence, and efficacy, reported that majority of individuals who participated in the study had moderate knowledge of hypertension.

Although, the current study's finding of moderate knowledge of hypertension contradicts with that of Olaoluwa and Amousu (2021) and also Abdullahi and Amzat (2021) who both found out an adequate level of knowledge of hypertension and its complications.

The second finding of this study showed that most teachers have moderate practice of preventive measures of hypertension. This finding agrees with that of Olaoluwa and Amousu's (2021) study which explored secondary school teachers' practice of hypertension prevention and reported a moderate level of practice of preventive measures. Similarly, there is a collaboration of the findings of this study and that of Dankoli and Amousu's (2022) study. They studied perceptions of secondary school teachers on hypertension and reported moderate understanding of risk factors of hypertension.

### **Conclusion**

Knowledge of hypertension among secondary school teachers as revealed in this study is moderate. Teachers also demonstrated a moderate practice of preventive measures of hypertension. Thirdly, the findings revealed that teachers have adequate knowledge of the risk factors of hypertension. Wellness in the workplace improves employee health and organization's bottom line. Creating a worksite culture of health and wellness boosts and maintains employee's morale, improves the lives of employees, and helps to drive an organization's overall success. The knowledge of hypertension is very germane and apt for everybody not just teachers to be conversant with.

The basic knowledge of hypertension is that blood is carried from the heart to all parts of the body in the blood vessels. Each time the heart beats, it pumps blood into the vessels. Blood pressure is created by the force of blood pushing against the walls of blood vessels (arteries) as it is pumped by the heart. The higher the pressure, the harder the heart has to pump. The heart and blood vessels can tolerate increased blood pressure for months and even years; eventually the heart may enlarge (a condition called hypertrophy) and be weakened to the point of failure. Injury to blood vessels in the kidneys, brain, and eyes also may occur. Blood pressure is actually a measure of two pressures, the systolic and the diastolic. The systolic pressure (the higher pressure and the first number recorded—numerator) is the force that blood exerts on the artery walls as the heart contracts to pump the blood to the peripheral organs and tissues. The diastolic pressure (the lower pressure and the second number recorded—denominator) is residual pressure exerted on the arteries as the heart relaxes between beats. A diagnosis of hypertension is made with blood pressure machine hence the use of it in this study.

### **Scientific Significance of Study**

The findings of this study showed that knowledge of hypertension among secondary school teachers is moderate. This implies that teachers are not unaware of the danger of heart attacks and other threatening diseases due to the moderate knowledge they have. This further implies that the Bayelsa State Health sector has been effective in health educating her citizens, thus has promoted the awareness of hypertension among teachers. Most teachers were knowledgeable of the preventive measures of hypertension and practice them. This indicates that teachers have adequate awareness and apply this knowledge effectively; therefore they are healthy despite the pressure of the job.

Most teachers had adequate knowledge of the risk factors of hypertension. This implies that teachers are likely to live hypertension free life due to their adequate knowledge on risks factors of hypertension. This further implies that the Bayelsa State Health sector and health educators are effective and wellness is promoted among secondary school teachers. This study provides conceptual knowledge and empirical information about hypertension among secondary school teachers. The study provides research findings on knowledge of hypertension (which was reported to be moderate), practice of preventive measures of hypertension (which was also reported to be moderate) as well as risks factors of hypertension which was reported to be adequate.

### Recommendations

Based on the findings of the study, the following recommendations are made:

- Teachers should continually avail themselves to health knowledge as well as have regular medical check-ups.
- There is still need to build wellness centers in schools and encourage its usage as exercise is a necessary component in the effectiveness of prevention measures of hypertension in the promotion of wellness.
- Attention should still be paid towards enhancing teachers' level of awareness of the risk factors of hypertension and developing positive attitudes toward wellness.
- Government and health bodies need to intensify their enlightenment campaigns and knowledge interventions to enhance the acceptance of wellness activities.

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