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Effect of Health-Education Intervention on Knowledge Level and Motivation of Hypertension Prevention among Pre-Hypertensive Market Traders in Lagos State

OYEWOLE OLUSESAN OYERINDE
Babcock University, Ilisan-Remo, Ogun state, Nigeria

IDOWU OMOTUNDE OKESIJI
Lagos State University Teaching Hospital, Ikeja, Lagos State, Nigeria

ADEMOLA MUFUTAU AMOSU
McPherson University, Seriki-Sotayo, Ogun State, Nigeria

1. Introduction

Hypertension is a long-term medical disorder in which blood pressure in the arteries remains abnormally high (Naish & Court, 2014). Majority of the time, high blood pressure is asymptomatic (Ayogu, Ezeh & Okafor, 2021). Nevertheless, persistent, uncontrolled high blood pressure is a major risk factor for cardiovascular diseases such as stroke, coronary artery disease, heart failure, atrial fibrillation and peripheral arterial disease. It also predisposes to vision loss, chronic kidney disease and dementia (Lackland & Weber 2015; Mendis, Puska & Norrving 2011; Hernandorena, Duron, Vidal & Hanon 2017; Lau, Nattel, Kalman & Sanders 2017). It accounts for significant cases of premature mortality worldwide (GBD, 2015; Mills, Obst, Shen, Molina, Zhang, He, Cooper, & He 2016).

High blood pressure affects around a billion people worldwide (Adeloye Basquill, Aderemi, Thompson, & Obi 2015; Beaglehole et al., 2011). Africa has a high prevalence of hypertension estimated to be about 57% of adult aged 50 years and above (Bosu, Reilly, Aheto, Zucchelli 2019). The incidence of hypertension in Nigeria adult population is rising. and the rate varies year to year and from region to region. Adeloye, et al. (2021) set the prevalence at 30.6%, whereas Akinlua et al. (2015) and Ogah et al. (2012) observed HBP prevalence ranging from 2.1 to 47.2 percent in adults and 8–46.4 percent in children (Ogah et al., 2012; Kayima et al., 2013 and Akinlua, Meakin, Umar, Freemantle 2015).

Hypertension is more common in the older population and responsible for the higher incidence of morbidity and death in this age group (Lewington et al., 2002). In addition, in adult populations, demographic factors such as gender, family history of cardiovascular diseases, lifestyle factors such as unhealthy food intake, physical inactivity, tobacco and alcohol use, abnormal serum lipids and lipoproteins, obesity, chronic stress, and insufficient sleep are all strong risk factors for hypertension (Thawornchaisit et al., 2013; Koti & Roetzheim 2015;). However, data suggests that the majority of people with hypertension, particularly the elderly, are unaware, and this increases the risk of serious consequences (Adeloye et al 2015; Mills et al 2016). This non-communicable disease accounts for approximately 7.1 million deaths per year, and ranks third in terms of disability adjusted life years (DALYs) lost (Eze et al., 2020).

Studies have also proposed that changes in medication adherence, and lifestyle changes that rely on a thorough understanding of knowledge-based awareness are valuable in the prevention of hypertension and its comorbid conditions (Cohn et al., 2012). Hypertension knowledge and awareness is a strong predictor of hypertension prevention practices, treatment, and medication adherence among hypertensive patients (Cohn et al., 2012; Barr et al., 2014 & Chotisiri et al 2016). Previous studies have reported poor knowledge concerning hypertension and its consequences, the side effects of antihypertensive drugs, poor adherence with drug therapy, erroneous health beliefs, inability to make lifestyle changes, unrealistic treatment expectations and demographic factors as barriers to hypertension prevention and control practices (Odedosu, Schoenthaler, Vieira, Agyemang, & Ogedegbe, 2012; Okwuonu, Ojimadu, Okaka, & Akemokwe, 2014).

Prevalence of hypertension among adults in the informal sector, especially market women in

Nigeria is high (Ahaneku et al., 2011; Ulasi et al., 2011; Odugbemi, Onajole & Osibogun, 2012; Ogunmola, Olaifa, Oladapo &; Oladoyinbo, Ekerette, Ogunubi, 2015 and Eze et al., 2020.). Market traders are at increased risk of high blood pressure as a result of sedentary lifestyle and reliance on salty, fast food at work (Ahaneku et al., 2011; Ulasi et al., 2011; Lucero et al., 2014; Oladoyinbo, Ekerette, Ogunubi, 2015; Dzhambov, Dimitrova, 2018; Eze et al., 2020;). One in four market traders had undiagnosed hypertension with a significantly higher prevalence among older, married and obese traders (Vincent-Onabajo, Adaji, Umeonwuka, 2017). Hence this study assessed Traders' knowledge level of hypertension and their motivation to prevent its occurrence with benefits of lifestyle in Alimosho Local Government Area of Lagos State.

2. Research Methodology

2.1 Research Design.

The study, which was part of a larger experimental study of 2 groups- control and experimental, adopted a quazi-experimental design and the population for the study consisted of traders from selected structured markets in Alimosho and Ajeromi-Ifelodun Local Government Areas of Lagos State.

2.2 Study population and location

Lagos State is the most populous city in Nigeria with an estimated 21 million inhabitants in 2016. Metropolitan areas have emerged on islands, including Lagos Island, and this is protected from the Atlantic Ocean with a sandy tongue. The city extends to the west mainland of the lagoon, with Ikeja, the capital of Lagos, and Agege, more than 25 miles northwest of Lagos Island.

Alimosho local government is the largest LGA in Lagos State and was established in 1945 under Ikeja division. It has six sub divisions created out along-side Agbado/Oke-odo. Ikotun/Igando, Ayobo/Ipaja, Mosan/Okunola and Egbeda/Akowonjo. The area is rich in culture and festivals such as Egugun, Oro, Igunnu by the dominating Egbados. Yoruba and Pidgin English are the most prominent languages of Alimosho people.
There are between 70 markets in Alimosho local government The biggest market is the Ile-Epo market mostly known for perishable or unprocessed food items and processed food items. Other markets are Iyana Ipaja market, Ipaja Market, Ile Baale, Iso Pako, Oja-Oba, Ataapa, Odo Eran, Egbeda, Power-line, Alagutan (motor spare parts), Estate, Water, Atan, Ayobo, Abule Egba markets while others in the category of small markets are Kola, Agbado, Shasha, and Ikotun markets.

2.3 Inclusion and Exclusion Criteria

The inclusion criteria were adult market traders who are shop owners, member of traders' association and those who offer informed consent to participate. Market traders who are confirmed hypertensive, those that are ill at the time of the research, who are not members of the trader's association, free hawkers, non-shop owners and traders who do not consent to participate in the study were excluded.

2.4 Sample Size and Sampling Technique

The sample size was calculated based on a comparison of two independent means formulae with a standardized effect size of 0.50 and a standard deviation of 5% (Snedecor and Cochran, 1989). The level of significance was set at $p < 0.05$ and a study power of 80% was assumed.

$$n = \frac{2(Z_{\alpha/2}+Z_{1-\beta})2}{(\frac{\mu 1+\mu 2}{\sigma})2} = \frac{2(1.96+0.84)2}{(0.5)2} = \frac{16}{0.25} = 64.$$

The estimated sample size for each group was 64 giving a total number of 128 participants across the 2 groups. With an addition of 10% for attrition, we arrived at 140 participants.

2.5 Sampling Technique

A three-stage sampling technique was used to select market traders into the study. In stage one, 2 LGAs, Alimosho and Ajeromi-Ifelodun LGAs were randomly selected out of the 20 LGAs in Lagos State. Next was stage two, where one large market in each of the selected LGAs, Ile-epo Oke Odo market in Alimosho LGA (comprising 1954 shops) and Alayabiagba market in Ajeromi-Ifelodun LGA (comprising of 801 shops) were purposively selected. Asides their large sizes, these markets were selected because of size of their markets and that there is remarkable multiple ethnic group representation of possible participants and they also contained more merchants as compared with the other. Systematic random sampling technique was employed to recruit participants from their shop. A sampling interval of 19 was computed and the first shop was selected in a ballot between numbers 1 to 19. One eligible trader was recruited from each shop where there were more than one eligible potential participant.

2.6 Instrumentations of Data Collection

The instrument was a validated, structured questionnaire. This was used to collect data on participants' demographic characteristics,

hypertension related knowledge and motivation, on hypertension prevention. The instrument was drafted in English language, translated to Yoruba and Pidgin language for people who cannot read or understand English language and it was interviewer (research assistant) administered. The instrument was used to rate baseline, immediate post-intervention measures, and impact evaluation of the intervention.

The instrument had three sections, namely sections A, B, and C

Section A: Socio-demographic characteristics of the participants which include age, gender, level of education, religion, marital status, systolic and diastolic BP, weight and height. The BP levels were measured from the right and left arms of the subjects in a sitting position by the nurses/CHEW at the study site. The Blood Pressure was measured twice with maximum of 10 minutes interval. The systolic BP (SBP) and diastolic BP (DBP) was recorded using electronic sphygmomanometers. The participants blood pressure levels were then classified as follows: normal: SBP < 120 mmHg and DBP < 80 mmHg; PreHT: SBP 120–139 mmHg and/ or DBP 80–89 mmHg; hypertension: SBP ≥ 140 mmHg and/or DBP ≥ 90 mmHg. The participants receiving antihypertensive treatment will be considered to have hypertension and excluded from the study.

Section B: hypertension knowledge was being measured using 11 items with a response format of Yes, No. The 11 questions were question about the meaning of hypertension; questions about causes and risk factors for hypertension, also about signs and symptoms and blood pressure measurement and its interpretation, others are about hypertension complications, and blood pressure management and control. Each correct response was allotted 1 mark while an incorrect answer had 0 allotted. The knowledge index ranging from higher scores indicating greater hypertension knowledge.

Section C: motivation towards hypertension prevention will be assessed using 20 items. The response format was based on Likert scale of strongly agree (2 points) agree (1 point) disagree (0 point) and strongly disagree (0 point).

2.7 Validity and Reliability of Instrument

This instrument was reviewed by researcher's supervisor and other academics in the field of public health. The validity of the contents of the questionnaire was determined by consultation of relevant literature and previous research works to ensure that items adequately measure the constructs of the study. Additionally, a total of twenty draft questionnaire was pre-tested among traders with similar socio-demographic characteristics with the study participants in Ipodo market to confirm clarity and comprehension of the instrument. Feedbacks from the pilot study was incorporated into the instrument.

Construct validity: The development of the questionnaire items was structured based on the objectives of the study and the conceptual framework of the study.

Test re-test was done. This was done by administering the questionnaire twice to 20 traders similar to the study participants in Ipodo market in Ikeja. The coefficient reliability was determined using IBM SPSS software version 22. A Cronbach's α score of 0.80 with a range of 0.79 – 0.87 was obtained.
Data Collection

Data collated and analyzed using IBM Statistical Package for Service Solution (IBM SPSS) version 22.0 and set at P< 0.005. Computed data was then subjected to descriptive (means, standard deviation, standard error) statistical analyses.

The prepared instrument was administered to each of the participants by the researcher and the research assistants. Required data were filled in as appropriate by the participants and/or research assistants and collected by the researcher and research assistants. Also, the participant's blood pressure and body mass index reading were taken and recorded

2.8 Data Analysis

The data obtained was screened by looking at each item on each questionnaire to ascertain that the respondents answered them correctly and, in some cases, where-by no response were given, the item were treated as missing variable. The data obtained from completed copies of the questionnaire were collated and analyzed using IBM Statistical Package for Service Solution (IBM SPSS) version 22.0 and set at P< 0.005. Computed data was then subjected to descriptive (means, standard deviation, standard error, Effect size) statistical analyses. Also, the information obtained were summarized and presented in tables. Each construct of the questionnaire was coded along the appropriate ranking scale. Maximum point-scales were generated for each construct to measure the stated research variables; mean scores were computed.

Table 1 Statistical Analysis

S/N	Objectives	Statistical Method
1	Socio-demographic characteristics	Frequency table, simple percentage count
2	Assess the level of knowledge of hypertension among the market traders.	Means, standard deviation
3	Determine the level of motivation towards hypertension prevention	Means, standard deviation
	Effect of health education intervention on knowledge of hypertension.	Means, Effect size
	Effect of health-education intervention on motivation to prevent hypertension	Means, Effect size

2.9 Ethical Consideration

Ethical approval was obtained from Babcock University Health Research Ethics Committee (BUHREC). Permission and cooperation were obtained from the Iya-ojas and Baba-ojas who are the custodian of the leadership and administrative roles in the market. Participation was completely voluntary or optional without cohesion and the traders were informed that they were at liberty to decline to participate or withdraw from the study with no consequences to them. Written informed consent were obtained after thorough explanation given and understanding established. Confidentiality was assured to the participants. Personal identifiable information like name was not included except for information needed for identification of participants such as shop address and phone numbers that were be coded for reference purpose. The participants were offered free blood pressure check, height, weight and Body Mass index screening. No incentive or compensation for participating in the study. Also, there were explanation that no identified or associated risks in participating in the study.

Informed consent

The purpose of the study, content benefits, and risk of the study were explained to the participants. Informed consent was obtained before recruiting the participants and administering the questionnaire.

3. Result and Discussion of Findings

Socio-Demographic Characteristics of the Participants

As shown in Table 2 below, the result of the findings showed that the mean age of the participants in the both groups were 44.91±8.82 and 44.37±8.80 years. There were more females in both groups - 40(57.1%) and 37(52.9%). Forty 28 (40.0%) and 24 (34.3%) respectively of the participants in both groups had tertiary education. Majority of the participants were married – 79% (56%). The result of the findings also showed that Christianity was the dominant religion in both groups 81 (58.6%). Only a few of the participants in the intervention group 6 (8.6%) and the control group 8 (11.4%) were extremely obese. Both groups are considered comparable when looking at socio-demographic characteristics.

Table 2: Socio-demographic characteristics of the participants

Variable	Kinds	Intervention group (n=70)		Control group (n=70)		$\chi 2$	P
		F	%	F	%		
Age	30-40	26	37.1	27	38.6	0.35	0.84
	41-51	25	35.7	27	38.6		
	52-62	19	27.1	16	22.9		
Mean ±SD		44.91±8.82		44.37±8.80			
Gender	Male	30	42.9	33	47.1	0.26	0.73
	Female	40	57.1	37	52.9		
Educational level	No education	18	25.7	19	27.1	0.52	0.91
	Primary	11	15.7	12	17.1		
	Secondary	13	18.6	15	21.4		
	Tertiary	28	40.0	25	34.3		
Marital status	Married	41	58.6	38	54.3	1.48	0.69
	Single	13	18.6	10	14.3		
	Widowed	9	12.9	13	18.6		
	Divorced	7	10.0	9	12.9		
Religion	Christian	41	58.6	40	57.1	0.42	0.81
	Islam	27	38.6	29	41.4		
	Others	2	2.9	1	1.4		
BMI	Under weight	1	1.4	2	2.9	5.30	0.38

Normal	24	34.4	14	20.0
Overweight	16	22.9	14	20.0
Obesity class 1	15	21.4	18	25.7
Obesity class11	8	11.4	14	20.0
Extreme obesity	6	8.6	8	11.4

Knowledge level of hypertension

As shown in table 3 below, the participants' level of knowledge of hypertension was measured on a 21-points rating scale and categorized into low, moderate, and high at the baseline. The intervention group had a mean score of 15.37±5.20, while the control group had a mean knowledge score of 15.33±3.93. More than half of the participants in both groups had high level of knowledge, 38 (54.3%) and 46 (65.7%) in the experimental and the control group respectively.

The mean score of the intervention and the control groups were compared using an independent sample t- test at the baseline. The result revealed that there was no statistically significant difference in the mean score obtained by the two groups.

Table 3: Baseline Knowledge level of hypertension

Variable	Category	Intervention group		Control group		t-test	P
		F	%	F	%		
Knowledge Measured on a 21-points rating scale	Low	6	8.6	3	4.3	0.02	0.98
	Moderate	26	37.1	21	30.0		
	High	38	54.3	46	65.7		
Mean score		15.37±5.20		15.33±3.93			

Comparison of Participants' level of Knowledge regarding hypertension at the Immediate Post Intervention between the two groups

As shown in table 4 below, immediately after the intervention, the participants' level of knowledge in the two groups was assessed with the same instrument measured on 21-points rating scale and categorized into low, moderate, and high. The result of the analysis showed that the mean score obtained by the intervention group was 18.64 ± 1.68 and the control group had a mean score of 15.30 ± 3.85. The analysis showed that all the participants 69 (98.6%) in the intervention group with the exception of the participant 1(1.4%) that dropped out of the program, had high level of knowledge regarding hypertension prevention. However, most 46 (65.7%) of the participants in the control group had high level of knowledge. The mean scores of the participants were compared using an independents t-test. The result of the analysis showed that there was a statistically significant difference between the two groups at the immediate post intervention.

Table 4: Comparison of Participants' level of Knowledge regarding hypertension at the Immediate Post Intervention between the two groups.

Variable	**Category**	**Intervention group**		**Control group**		**t-test**	**P**
		F	%	F	%		
Post Knowledge	Low	-	-	3	4.3		
Measured on a 21-points	Moderate	-	-	21	30.0		
rating scale	High	69	98.6	46	65.7		
Mean score		18.64 ± 1.68		15.30 ± 3.85		**6.60**	**<0.01**

Comparison of Participants' level of Knowledge regarding hypertension at the baseline and Immediate Post Intervention.

As shown in table 5 below, the mean score of the participants in the intervention group increased from 15.37 ± 5.20, at the baseline to 18.64 ± 1.68 at the immediate post intervention. However, the mean score of the control group slightly decreased from 15.33 ± 3.93 at the baseline to 15.30 ± 3.85 at the immediate post intervention. The mean scores of the two groups were compared between the baseline and immediate post intervention using a paired sample t- test. The result of the analysis showed that there was a statistically significant difference in the mean score.

Table 5: Comparison of Participants' level of Knowledge regarding hypertension at the baseline and Immediate Post Intervention.

Variable	Category	Intervention group				Control group				t-test	P
		Baseline		Post Intervention		Baseline		Post Intervention			
		F	%	F	%	F	%	F	%		
Baseline and post intervention knowledge measured on 21-points rating scale	Low	6	8.6	-	-	3	4.3	3	4.3		
	Moderate	26	37.1	-	-	21	30.0	21	30.0		
	High	38	54.3	69	98.6	46	65.7	46	65.7	**-5.15**	**<.01**
Mean score		15.37 ± 5.20		18.64 ± 1.68		15.33 ± 3.93		15.30 ± 3.85			

Evaluation of the level of influence of health education on the level of knowledge of hypertension among the market traders at 6th weeks immediate post intervention.

Table 6. Impact of health education on the level of knowledge of hypertension in the intervention group between the baseline and at the immediate post intervention.

As shown in table 6 and 7. The impact of the health education was assessed in the intervention group. The result of the analysis showed that participants' level of knowledge increased from 15.37 ± 5.20 to 18.64 ± 1.68 after the health education. A paired sample t-test showed that the increase in knowledge was statistically significant ($p < 0.01$). An effect size was computed to determine the magnitude of change in means between the baseline and immediate post intervention. The intervention group had an effect size of -0.85 with a p- value of <0.01. Although there was a slight decrease in the level of knowledge of the control group from 15.33 ± 3.93 at the baseline to 15.30 ± 3.85 at the post intervention, a paired sample t- test analysis showed that there was no statistically significant difference in the mean scores of the control group ($p = 0.48$). An effect size computed showed a very small magnitude of change which was not significant. The control group had an effect size of 0.01 with a p- value of 0.48.

Table 6: Impact evaluation of participants' level of knowledge of hypertension between the baseline and immediate post intervention for the control group.

Variable	Control group				*ES (95% CI)	p- value
	Baseline N= 70		Post Intervention N= 70			
	$\bar{x}$(SE)	±SD	$\bar{x}$(SE)	±SD		**0.48**
Mean score	15.33(0.47)	3.93	15.30 (0.46)	3.85	**0.01 (-0.63 to 0.65)**	

Table 7: Impact evaluation of participants' level of knowledge of hypertension between the baseline and immediate post intervention for the intervention group.

Variable	Intervention group				*ES (95% CI)	p- value
	Baseline N= 70		Post Intervention N= 69			
	$\bar{x}$(SE)	±SD	$\bar{x}$(SE)	±SD		
					-0.85 (-1.49 to -0.21)	**<0.01**
Mean score	15.37(0.62)	5.20	18.64 (0.20)	1.68		

Participants' motivation towards hypertension prevention

As shown in table 8 below, the participants' motivation towards hypertension prevention was measured on a 40-points rating scale and categorized into low and high. The mean motivation score was 16.06±7.60 and 17.99±5.50. Most 101 (71.6%) of the participants had low motivation towards hypertension prevention. The mean motivation score both groups were compared using an independent sample t- test. The result of the analysis showed that there was no statistically significant difference in the motivation score of the two groups.

Table 8: Participants' motivation towards hypertension prevention

Variable	Category	Intervention group		Control group		t-test	P
		F	%	F	%		
Motivation measured on a 40-points rating scale	Low	55	78.6	46	65.7		
	High	15	21.4	24	34.3	-1.74	0.08
Mean score		16.06±7.60		17.99±5.50			

The table 9 below showed that the participants motivation towards hypertension prevention at immediate post intervention period for both groups show mean score of 27.49± 11.52 and 17.91± 5.49for Intervention and control groups respectively. Independent t test was significant at 6.27 ($p<0.01$)

Table 9: Comparison of Participants' motivation towards hypertension prevention at the Immediate Post Intervention between the two groups.

Variable	**Category**	**Intervention group**		**Control group**		**t-test**	**P**
		F	%	F	%		
Post intervention Motivation skills Measured on a 40-points rating scale	Low	29	41.4	47	67.1		
	High	40	57.1	23	32.9		
						6.27	**<0.01**
Mean score		27.49 ± 11.52		17.91 ± 5.49			

Comparison of Participants' motivation towards hypertension prevention at the baseline and Immediate Post Intervention.

As shown in table 10 below, the result of the analysis showed that participants' motivation in the intervention group increased from 16.06 ± 7.60 at the baseline to 27.49 ± 11.51 at the immediate post intervention. Contrary to this result, the control group slightly decreased from 17.99 ± 5.50 at the baseline to 17.91 ± 5.49 post intervention. The mean scores of the two groups were compared between the baseline and immediate post intervention using a paired sample t- test. The result of the analysis showed that there was a statistically significant difference in the mean score.

Table 10: Comparison of Participants' motivation towards hypertension prevention at the baseline and Immediate Post Intervention.

Variable	**Category**	**Intervention group**				**Control group**				**t-test**	**P**
		Baseline		Post Intervention		Baseline		Post Intervention			
		F	%	F	%	F	%	F	%		
Baseline and post intervention motivation measured on 40-points rating scale	Low	55	78.6	29	41.4	46	65.7	47	67.1		
	High	15	21.4	40	57.1	24	34.3	23	32.9		
										-5.31	**<0.01**
Mean score		16.06 ± 7.60		27.49 ± 11.52		17.99 ± 5.50		17.91 ± 5.49			

Impact of the level of influence of health education intervention on level of motivation towards hypertension prevention among the market traders between the baseline at 6th weeks immediate post intervention.

Impact of health education on the level of motivation towards hypertension prevention in the intervention group and at the immediate post intervention.

As shown in table 12 and 13. The impact of the health education was assessed in the intervention group. The result of the analysis showed that participants' level of motivation increased from 16.06 ± 7.60 at the baseline to 27.49 ± 11.51 after the health education. A paired sample t-test showed that the increase in motivation was statistically significant ($p <0.01$). An effect size was computed to determine the magnitude of change in means between the baseline and immediate post intervention. The intervention group had an effect size of -1.18 with a

p- value of <0.01. Although there was a slight decrease in the level of motivation of the control group from 17.99 ± 5.50 at the baseline to 17.91 ± 5.49 at the post intervention, a paired sample t- test analysis showed that there was no statistically significant difference in the mean scores of the control group (p =0.17). An effect size computed showed a very small magnitude of change which was not significant. The control group had an effect size of 0.02 with a p- value of 0.17.

Table 12: Impact evaluation of participants' level of motivation towards hypertension prevention between the baseline and immediate post intervention for the control group.

Variable	**Control group**				***ES (95% CI)**	**p- value**
	Baseline N= 70		Post Intervention N= 70			
	$\bar{x}$(SE)	±SD	$\bar{x}$(SE)	±SD		**0.17**
Mean score	17.99 (066)	5.50	17.91 (0.66)	5.49	0.02 (-0.89 to 0.92)	

Table 13: Impact evaluation of participants' level of motivation towards hypertension prevention between the baseline and immediate post intervention for the intervention group.

Variable	**Intervention group**				***ES (95% CI)**	**p- value**
	Baseline N= 70		Post Intervention N= 69			
	$\bar{x}$(SE)	±SD	$\bar{x}$(SE)	±SD		**<0.01**
Mean score	16.06 (0.89)	7.60	27.49 (1.39)	11.51	-1.18 (-2.79 to 0.43)	

Level of participants' preventive practices towards hypertension prevention

As shown in table 15 below, the participants' preventive practices against hypertension were measured on a 24-points rating scale and categorized into low and high. The participants in both groups had a mean preventive practice score of 12.14±5.60 and 13.83±5.07. Less than half 64 (45.3%) of the participants had low preventive practices against hypertension. The mean preventive practices of the two groups were compared using an independent sample t-test. There was no statistically significant difference in the mean score of the two groups.

Table 15: Level of participants' preventive practices towards hypertension prevention

Variable	**Category**	**Intervention group**		**Control group**		**t-test**	**P**
		F	%	F	%		
Preventive practices measured on a 24-points rating scale.	Low	41	58.6	23	32.9	-1.87	0.06
	High	29	41.4	47	67.1		
Mean score		12.14±5.60		13.82±5.07			

4. Discussion of findings

In recent years, there has been a significant prevalence of hypertension, which has been associated to late identification and inadequate obesity management, thus resulting in high morbidity and death among the adult population. Traders have a hectic routine, which limits the time they have for their health. Because this population group lacks adequate access to formal health care, investigating the influence of blood pressure education on hypertension awareness and blood pressure status is important. This study used a non-randomized, quasi experiment design to assess the efficacy of a health education intervention on hypertension knowledge and motivation for prevention practices among market merchants in Lagos State.

The mean age reported in the current study for the intervention group and control group was 44.91±8.82 years and 44.37 ± 8.80 years respectively. This is in consonance with the mean age reported by Eze, et al., (2020), in their study to investigate the impact of health education intervention on knowledge and prevalence of hypertension among retirees in southeast Nigeria. Ozoemena et al. (2019) observed a substantially higher mean age among their participants. The discrepancy in mean age was attributable to the fact that Ozoemena et al. evaluated the influence of health education on Nigerian retirees. In the current study, there were more females in both groups, this is at variance with the findings of Eze, et al., (2020), and Ozoemena et al. (2019) where they reported more male to female ratio. The difference could be attributed to different geographical settings. The majority of the current study participants were married. This is consistent with the findings of Ozoemena et al. (2019), Eze, et al., (2020), and Naeemi et al., (2022). There were more participants with tertiary education in both groups in the present study. This is co-related with the findings of Ozoemena et al. (2019), however Eze, et al., (2020), and Al Shatari, et al., (2019)

reported that most of their participants had secondary education.

The current study found insufficient level of hypertension related knowledge at the baseline in both the intervention group as well as the control group. Knowledge of specific domains of hypertension like risk factors, complications, and prevention was minimal. This finding is in agreement to similar studies of traders in Nigeria (Osuala et al., 2014; Iyalomhe et al., 2010) and Egypt (Al-wehedy et al., 2014) where they reported low level of knowledge. The poor knowledge may be due to limited access to adequate health information as most informal sectors lack structured occupational health services (Banik 2009).

The current study's findings revealed that the educational intervention had a favorable influence on enhancing traders' hypertension knowledge, as well as any other individual outcome. These findings have added to the scarcity of evidence on the efficacy of health education programs in Sub-Saharan Africa. When compared to the control group, the intervention group's mean hypertension knowledge rose considerably between baselines and immediately after intervention. Appropriate knowledge of hypertension and its prevention has been highlighted as a prerequisite for lifestyle changes, medication adherence, and efficient blood pressure management among hypertensive patients, including market traders (Cohn, et al., 2012; Chotisiri et al., 2016). This finding is similar to a recent study, which found that post-intervention hypertension knowledge, attitude, and practices (KAP) scores were greater than baseline (Roopa et al., 2014). The current results are comparable to those of a quasi-experimental study done in Nigeria (Awosan et al., 2013), which found a substantial gain in knowledge after three months of intervention. Similar studies conducted in China (Yang & Sun 2011) and Canada (Dawes et al., 2010) found that participants in educational programs greatly increased their general knowledge about hypertension. The findings of other research, including the one by Ozoemena et al. (2019), demonstrated that education about a healthy diet and medication adherence greatly increased knowledge of hypertension. Also, the study by Zangiabadi (2019) demonstrated that the degree of individual knowledge has a significant impact in encouraging prevention in non-hypertensive and subsequent drug compliance in hypertension patients. Furthermore, according to Naeemi et al. 2022; Ogban et al. 2021, educational interventions based on the health belief model can be successful in lowering the obstacles to preventive and self-care behaviors. The fact that knowledge of hypertension has increased shows the importance of health education initiatives, which should be continued. Evidence, however, indicates that not all information results into the desired behavioral change (Fisher et al., 1994).

The present study found low baseline motivation towards hypertension prevention among the intervention group as well as in the control group. This is consistent with the findings of Susiati et al., (2016). However, a study conducted in a rural community in Indonesia revealed positive attitude among most of their hypertension patients at the baseline (Kurnia et al., 2022). The difference could be attributed to the fact that the research studied patients that are already diagnosed with hypertension who are already informed about their condition. However, approximately 60% of hypertensive patients still have a bad attitude towards the treatment of hypertension. The attitude of people with hypertension also affects blood pressure control compliance and adherence to the diet, the more positive attitude of the patient, the better management of hypertension (Tarigan et al., 2018).

The current study found that health educational intervention significantly influences the trader's attitude/motivation towards hypertension prevention. This is consistent with the finding of Kurnia et al., (2022). The provision of health care management and health education interventions can force respondents to learn how to behave healthily and the right processes for the management of hypertension, increasing respondents' understanding of the management of hypertension. The respondent's rising level of knowledge inevitably raises their interest in finding solutions to regulate their blood pressure. According to the study by Ainiyah and Wijayanti (2019), the attitude differences among those who have hypertension are normal because they are influenced by a number of variables, including the respondent's source of information for the study in the mass media (both print and electronic media) and their involvement in health education initiatives. Research likewise supports this. Health education can affect respondents' views, according to Sunarmi & Afrida (2019), if the information is presented in a clear, understandable manner. The management of hypertension is influenced more easily the more often health information is provided. According to study by Nuruddani (2019), health education is one intervention that can help people modify their attitudes toward following daily routines like eating well and taking their medications.

At the start of the trial, individuals' distribution in both the intervention and control groups had low levels of hypertension prevention activities. The

intervention group's preventative habits rose significantly after the intervention, but the control group showed no meaningful improvement. The findings of this study show that a model-based educational intervention can improve market traders' preventative practices.

As a consequence, the study confirms the favorable effects of health-education interventions on changing informal sector lifestyles. The findings are consistent with other research that found an improvement in hypertension self-care habits following a health education intervention (Ozoemena et al. 2019; Awosan et al., 2013; Eze, et al., 2020). However, the result of this finding contradicts a previous study (Babaee et al., 2014). The intervention's post-intervention and follow-up impacts were considerable. The follow-up intervention was designed to reaffirm the study's primary findings in the intervention group. The results of the initial post-intervention evaluation of the key outcomes suggested the necessity for a follow-up. Following the follow-up, the participants' hypertension knowledge grew significantly, as did their hypertension preventive, motivation, behavioural habits. This was shown in the intervention group's considerable effects as compared to the control group. This finding conforms to the findings of Kurnia et al., (2022) and Naeemi et al. (2022

5. Conclusion and Recommendations

This study discovered that market traders have insufficient knowledge of hypertension and low motivation concerning hypertension prevention practices. The Post-intervention period showed a significant increase in the knowledge of hypertension and its prevention which also translate into positive improvement in the participants' prevention of hypertension

According to the findings of the study, it is hereby recommended that the market leaders should partner with health workers to promote market sensitization efforts, screening programs, non-pharmacological lifestyle adjustments, such as improving physical activity levels and promotion of healthy diets.

There is evidence that the market traders should take their health screening very importantly especially regular blood monitoring and body mass index check in the pursuit of prevention of hypertension. It is equally important to replicate tis intervention study on larger participants and there must be continuity and sustained regular health education and blood pressure screening for market traders.

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