

VOLUNTARY SCREENING FOR HYPERTENSION AMONG NON-HYPERTENSIVE ADULTS ATTENDING MWINGI LEVEL IV HOSPITAL, KENYA

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ABSTRACT

Hypertension is a serious medical condition that significantly increases the risks of heart, brain, kidney and other disease causing premature death. An estimated 1.13 million people worldwide have hypertension. Screening for hypertension helps detect elevated blood pressure so that treatment can begin as required to prevent complications of late diagnosis. Persons at increased risk for hypertension should voluntarily be screened every year while those with lower risk screening every 3 years. The main objective for the study was to determine voluntary screening for hypertension among non-hypertensive adults attending Mwingi Level IV Hospital. This focused on awareness and uptake of screening for hypertension. A cross-sectional hospital-based design was used. The area of study was Mwingi Level IV Hospital. Included non-hypertensive adults, aged above 18 years who consented for participation. Simple random sampling method and a sample of 50 subjects was selected. Data collection was by a questionnaire and was analyzed using Microsoft excel and SPSS Version 21. Descriptive statistics computed included frequencies, proportions and percentages. A very small proportion (5%) of the respondents had screened for hypertension and was motivated by their sick status (60%) from other illnesses since it was a compulsory check their blood pressure checked before consultation. More than half (60%) of the respondents were females aged 40-50 years and majority of them were married (70%). Majority of the respondents (95%), were knowledgeable on hypertension. The main source of information on hypertension was the school (50%). In conclusions, there is low uptake of voluntary screening for hypertension among the respondents. Thus a need to promote awareness on hypertension at community levels through campaigns on screening for early detection and timely management.

KEYWORDS: Voluntary, awareness, screening, non-hypertensive.

1.1 INTRODUCTION

Hypertension or elevated blood pressure (BP) is a serious medical condition that significantly increases the risks of heart, brain, kidney and other diseases (WHO, 2019). Hypertension is the most chronic disease among adults in many parts of the world making it the single most important cause of morbidity and mortality (Weber, 2014). Hypertension has been regarded as a disease of affluence but this has changed drastically in the last two decades with average blood pressures now higher in Africa than in Europe and USA and the prevalence increasing among poor sections of society (Vijver *et al.*, 2013). Hypertension or high blood pressure is defined as abnormally high arterial blood pressure considering normal blood pressure to be a systolic BP < 120 mmHg and diastolic BP < 80 mm Hg. Therefore, hypertension is

defined as systolic BP level of ≥ 140 mmHg and/or diastolic BP level ≥ 90 mmHg.

The global proportion of disease burden attributed to hypertension has over the years, risen from 4.5% to 7% between 2000 and 2015 (Vijver *et al.*, 2013). High blood pressure is a prevalent condition, affecting approximately 30% of the adult population (Piper MA, Evans CV, Burda BU, *et al.*, 2014). It is the most commonly diagnosed condition at outpatient visits. High blood pressure is a major causal risk factor for heart failure, heart attack, stroke, and chronic kidney disease. About 32.6% of adults in the United States have hypertension and the prevalence gradually increases as people get older or with cardiovascular risk factors. The prevalence of hypertension varies by ethnicity and gender and is

estimated among Caucasian women 44.9%, African American men 46.1% and among African American women 29.6%, Hispanic men 29.6%, 29.9% in women (Mozaffarian *et al.*, 2016). Episodic screening for hypertension among adults is recommended to detect onset of hypertension so that appropriate measures can be instituted to prevent the morbidity and the mortality associated with raised BP.

In Africa, more than 40% of adults have hypertension and the low rates of awareness, treatment and control of hypertension are a major public health concern as the population in this region is growing (de-Graft, Unwin, Agyemang, Allotey, Campbell & Arhinful, 2010) Many people with hypertension in Africa are unaware of their condition, many of those who are aware are not on treatment, and many of those treated are not well controlled. This implies that there will be appreciably large populations of hypertensive patients unaware of their increased risk of hypertension and related complications in the coming years (van de Vijver S, Oti S, Addo J, de Graft-Aikins A & Agyemang C., 2012).

In Kenya, hypertension remains the leading contributor to cardiovascular diseases and the leading cause of morbidity and mortality with more than half (56%) of Kenyans having never had their blood pressure checked (Kenya STEP wise survey for NCDs Risk factors report, 2015). This is contrary to increased health care provision and accessibility in the country. Awareness of the determinants of progression to hypertension among non-hypertensive persons is critical for defining their best BP screening interval. Since little has been reported on voluntary testing for hypertension among persons without hypertension, this study seeks to examine voluntary screening for hypertension among non-hypertensive adults attending Mwingi level IV hospital in Kitui County.

1.2 MATERIALS AND METHODS

Study design

This study adopted descriptive cross-sectional design allowing for interaction with the subjects once in the entire data collection period.

Study setting

The study was conducted in Mwingi level IV hospital, a public government within Kitui County, Kenya. It is located in Kitui East region along Nairobi-Garissa highway. The hospital offers preventive, curative and rehabilitation clinical services for outpatients and inpatient patients. It also serves as a learning institution for Kenya Medical Training colleges and serves the community of Mwingi Sub-County with a higher population of persons suffering hypertension.

Study population

The study population included non-hypertensive adults attending Mwingi level IV hospital.

Eligibility criteria

Inclusion criteria

Included non-hypertensive persons, residents of Mwingi sub-County, aged above 18 years, available during time of data collection and willing to voluntarily consent to participate in the study.

Exclusion criteria

Potential participants who were unwell were excluded from the study.

Study variables

Dependent variable for the study was voluntary screening for hypertension among non-hypertensive adults attending Mwingi level IV hospital.

Independent variables for the study included socio-demographic characteristics, awareness and screening for hypertension among non-hypertensive adults at the hospital.

Data collection tool

The data collection tool for the study was a semi-structured questionnaire administered to all consenting. The tool was formulated guided by the specific objectives for the study and with sufficient questions for each variable.

Sampling technique

Systematic random sampling method was used in selecting of respondents from respective departments as they met the selection criteria. Potential participants would pick random number from a box and those who picked any even number were included in the study. Thus 50 participants were selected to form the sample for the study.

Data collection tool

Data collection tool for the study was a semi-structured questionnaire which was constructed through formulation of relevant questions based on the study objectives.

Validity

Data validity was achieved by ensuring that the data collection tool was formulated based on the study objectives with adequate number of questions addressing each of the study variables. The questionnaires were numbered in a sequential order before being dispatched to the field and confirmed after a day of data collection. The study was limited to the area of study.

Reliability

Reliability was ensured through the use of a standard well-designed questionnaire and; proper selection, training and supervision of research assistants on interview techniques. The research assistants were also involved in pre-testing to ensure they administered the questionnaires correctly during the actual data collection.

Completed questionnaires were checked at the end of each day of data collection.

Data collection procedure

The interviewer would introduce him/herself to the participant, and having obtained an informed consent, he/she would read out the questions to the participant as they were on the questionnaire and allow the participant to respond appropriately without any influence.

Data analysis

Data was collected, coded and entered in the excel software, Microsoft office Excel 2010. All statistical analyses were performed using statistical package for social sciences (SPSS) software version 21 (SPSS Inc.,

USA). Descriptive statistics and Proportions for categorical data were computed. The results were presented in form of pie charts, tables and bar graph for easy interpretation.

Ethical considerations

Permission to carry out the study was sought from the KMTC Mwingi Campus Research Committee and further authorization was obtained from Mwingi sub-County hospital administrative. A research permit was thereafter, granted by National Commission for Science Technology and innovation, (NACOSTI). Informed consent was obtained from app participants prior to their inclusion in the study. The respondents were assured of privacy and confidentiality throughout the study.

1.3 RESULTS

1.3.1 Socio-demographic characteristics

Table 1: Showing socio-demographic characteristics of study participants.

Variable	Category	Frequency (n=50)	Percentage (%)
Age (years)	30-40	8	16
	40-50	30	60
	50-60 years	7	14
	>60	5	10
Gender	Male	23	47
	Female	27	53
Marital status	Married	35	70
	Single	10	20
	Separated	5	10
Level of education	Non-formal	3	6
	Primary	7	14
	Secondary	30	60
	College/university	10	20

Most of the study participants were females (53%) with males taking 47%. Slightly more than half of the participants (60%) were aged between 40-50 years with the least aged above 60 years. Majority of the study

participants (70%) were married while 10% were separated. Regarding participants' level of education, slightly more than half (60%) had secondary education with 6% having informal education.

Awareness on hypertension

Table 2: Showing awareness on hypertension among study participants.

Variable	Category	Frequency (n=50)	Percentage (%)
Ever heard about hypertension	Yes	48	95
	No	2	5
Sources of information	School	25	50
	Relatives	5	10
	Friends	15	30
	Others forms of media	5	10
	Total	50	100

Almost all the study participants (95%) indicated to have heard about hypertension with 5% indicating not to have heard about hypertension. Half of participants (50%) indicated that their source of information on

hypertension was the school while other forms of media and relatives were the least (5%) each.

Screening for hypertension

Heard about screening for hypertension

The study participants indicated that they had never heard about screening for hypertension. They reported

not to have heard about mobile clinic with health care workers carrying out screening for hypertension except on monitoring of blood pressure and dispensing of medication to those who are hypertensive.

Ever screened for hypertension

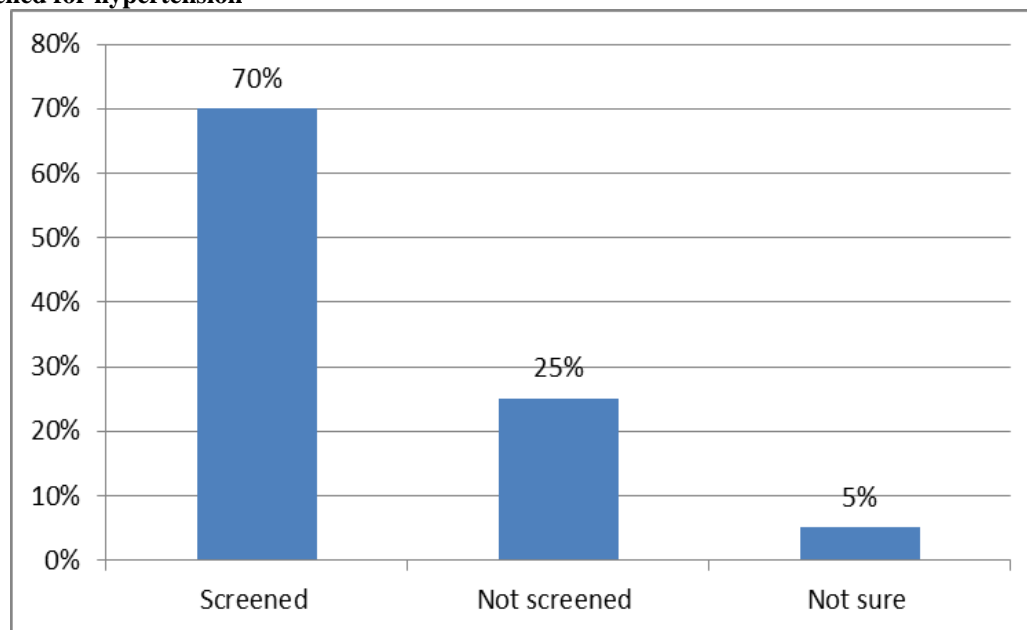


Figure 1: Showing screening status of the study participants.

Majority of the participants (70%) of the respondents had screened for hypertension in the past while the least (5%) were not sure whether they had screened before.

Those who had screened reported to have checked their blood pressure when visiting the clinicians prior to consultation for it was a requirement.

Motivation for screening

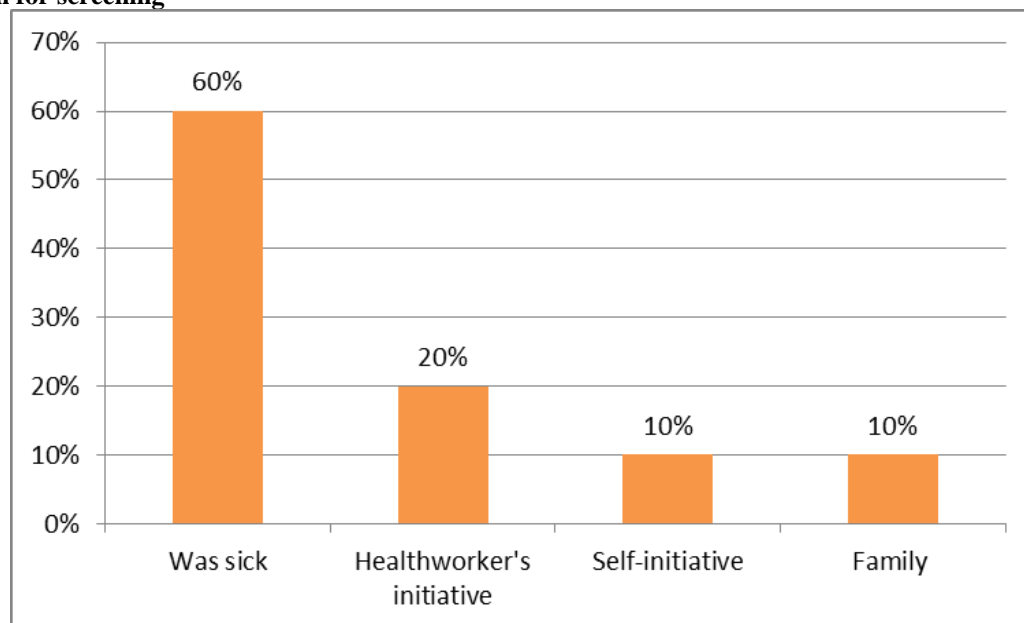


Figure 2: Showing motivating factors to screening among study participants.

Slightly more than half (60%) of the participants were motivated to screen for hypertension by their sick status while the least (10%) took own initiative as well as being influenced by their families. None of the participants

could recall their exact blood pressure at the point of screening however they cited that the health care provider reported to them that their blood pressure was normal.

Reasons for not screening for hypertension**Table 3: Showing reasons for not screening among study participants.**

Reason for not been screened	Respondents (n=50)	Percentage (%)
Not aware it's important	30	60%
Fear to know about blood pressure status	5	10%
I don't think I have hypertension	15	30%
Total	50	100%

The highest proportion of the participants (60%) indicated that they were not aware that screening for

hypertension was important while 10% feared knowing their blood pressure status.

Table 4: Showing of people thought to suffer hypertension.

Variable	Category	Frequency (n=50)	Percentage (%)
Population perceived to suffer hypertension	Those with family history	32	64%
	Above 60 years	10	20%
	30-50 years	5	10%
	At any age	3	6%
Total		50	100%

The highest proportion of study participants (64%) indicated that only those with a family history of hypertension have a greater risk for hypertension. The least (6%) perceived the risk for hypertension to be at any age.

1.4 DISCUSSION**Socio-demographic characteristics of participants**

Findings from the study indicated that a larger proportion was of females with males taking being less than half of the population. The highest number of participants was aged between 40-50 years with a largest proportion of the being married while a small percentage was separated. Regarding participants' level of education, majority had formal education with secondary level taking the larger proportion. The findings are congruent with those from a study by Petter, Reitsma-Van Rooijen, Korevaar & Nielen (2015) who found out that developing health screening services, factors pertaining to the specific population's socio-demographic characteristics, individual health behaviors, health attitudes and health awareness, and other motivating and preventative factors should be considered. There is need for periodic screening among adults aged 40 years or older and for those who are at increased risk for high blood pressure because they are at an increased risk including those with high-normal blood pressure (130 to 139/85 to 89 mm Hg), the overweight or obese and African Americans.

Awareness on hypertension

The study findings indicated a high level of awareness about hypertension (HTN) was high among the participants since almost all participants had heard about hypertension. The participants indicated their sources of information on hypertension were the school friends and relatives. These findings are dissimilar to those from a study by Babiker, Elkhailifa & Moukhyer (2013), which indicated a low level of awareness on HTN as the

findings showed a very poor appreciation of HTN and its associated risks in the study population. The study showed that slightly more than half of the subjects discovered their HTN when the complications of the disease became apparent. In the rest of the subjects, HTN was detected by chance in a routine check-up. The lack of awareness is very significant in the prevalence of HTN and uncontrolled high BP. therefore, more attention should be given to HTN as it is a common risk factor for stroke and kidney disease, which are recognised to be rapidly increasing (El Zein, Bukhari, Homeida & Adam, 2007)

Screening for hypertension

Findings from this indicate that study participants had never heard about screening for hypertension. They further indicated that there were no outreaches or mobile clinics to carrying out health messaging on screening for hypertension except on monitoring of blood pressure and dispensing of medication to the hypertensive persons. These findings are similar to those from a study in Sudan which indicated a low level of screening and follow up for HTN coupled with a poor healthcare system and health education programmes (El Zein AM, Bukhari EA, Homeida S, Adam I (2007). Routine health screening is considered to be one of the keys to reducing healthcare burdens associated with chronic diseases because after screening, appropriate preventive treatment is necessary. This would greatly lower the risks posed by diseases, including disability, early death and reduce the cost of medical care (Grunfeld et al. 2013; Bruhn, 2000).

The study findings indicated that majority of the participants had checked their blood pressure status especially when visiting hospitals for check up or when unwell for it was a requirement prior to the being attended to by clinicians for any consultation. These results are dissimilar to those from a study carried out in Taiwan which reported that several organizations provide similar health screening services. However, a

similarity observed in that many people did not participate in health screenings; thus, many chronic diseases are not diagnosed before symptoms appear (Fragala, Shiffman & Birse, 2019).

Motivation for screening

The study findings indicated that most of the participants were motivated to screen for hypertension by their sick status. Other cited reasons included influence from family, health care workers' initiative with only a small proportion taking their own initiative to get screened for HTN. Surprisingly, none of the participants could recall their exact blood pressure at the point of screening however they cited that the health care provider reported to them that their blood pressure was normal. This indicating little interest in the test as it was not the principal reason for making to the hospital. These results are similar to those from a study by Chien, Chuang, & Chen (2020) which indicated that many individuals do not take advantage of preventative screening services for chronic diseases, especially in rural areas. The study also provides evidence that health behaviors are positively related to health attitudes and health awareness, which in turn motivate and prevent people from utilizing health screening services (Chien, Chuang, & Chen, 2020). Awareness that a person is at risk of a chronic disease, they are more likely to take steps to prevent that disease.

Reasons for not screening for hypertension

Findings from the study indicated that most participants indicated that they were not aware that screening for hypertension was important while a small proportion feared knowing their blood pressure status. Most people believe that being diagnosed with a chronic disease would be extremely difficult for their families, significantly affect their emotions and behaviors, which would in turn impact their social networks and family relationships (Grunfeld et al. 2013)

Non-hypertensive perception on suffering hypertension

The highest proportion of study participants (64%) indicated that only those with a family history of hypertension have a greater risk for hypertension. The least (6%) perceived the risk for hypertension to be at any age. Hypertension has familial association thus many people would imagine that without a relative suffering from HTN they may not be at risk. Therefore without adequate information on HTN current trends and regular screening a person may end up being lately diagnosed increasing their chances for severe complications, including disability and increased cost of medical care (Babiker, Elkhailifa, & Moukhyer, 2013).

1.5 CONCLUSION

This study indicates that awareness on hypertension was high among participants since majority had heard high blood pressure. However, an existing gap on the difference between hearing and having knowledge as most participants reported never gone for a screening

except when their blood pressure was taken upon visiting health facilities. There was limited accessible media of conveying message on importance of screening to the participant.

Uptake of voluntary screening for hypertension among the study participants was very low since the participants had never heard about screening or had been mobilized through community leadership for a screening outreach activity within their residence. Majority deliberately avoided any monitoring of their blood pressure as they feared the outcome of being hypertensive and the implications it would have to their lives and their families. A small proportion cited the fact that only those with a family history should have been screened regularly.

1.6 Recommendation

This study recommends that,

1. The hospital and county department of health plans for health messaging sessions with the community on HTN using diverse media to create attentiveness and influence the community to take up screening for HTN since different populations can access and be influenced by varied media. The setting an allocation from county government facilitate programs that aims at promoting awareness on hypertension at community levels.
2. The hospital to establish outreach centres within the catchment area or hold mobile clinics to offer screening services for HTN to non- hypertensive persons including those without familial exposure. This coupled with screening at the health facilities will improve voluntary screening for HTN. Increasing participation in health screening services could improve early detection rates of chronic diseases.

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