

Factors Contributing to Hypertension Among Patients Aged 18-45 Years at Kajjansi Health Center IV, Wakiso District. A Cross-sectional Study.

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Abstract



Background:

Hypertension is the sustained increase in BP above normal measured on two occasions. It contributes to half of all global deaths due to NCDs and therefore the purpose of the study was to determine the factors contributing to hypertension among patients aged between 18-45 years at Kajjansi H/C IV Wakiso District.

Methodology:

A descriptive cross-sectional design was employed in carrying out this quantitative research. Kish and Leslie's method was used in determining the sample size of 50 respondents who were chosen by a simple random sampling technique.

Results:

Overall findings revealed that 54% of the hypertensive respondents were aged between 40-45 years of which 60% were females far more above their male counterparts who were at 40%, there was a positive correlation between hypertension and low intake of fruits and vegetables, physical inactivity and a positive familial history to hypertension 50%,78%, and 66% respectively. Findings also showed that of the 54% of total respondents that had a normal body mass index, 58% had no chronic comorbidity while 18% of the remaining percentage had DM as comorbidity. The findings further revealed that nearly all the respondents (98%) were urban dwellers with a basic secondary education level of study (40%), and 50% were married. A strong relation between unemployment, smoking, and alcohol consumption with hypertension incidence was noted among respondents 66%, 72%, and 58% respectively.

Conclusion:

There is a positive correlation between hypertension and social factors that are more behavior linked like cigarette smoking, alcohol intake, unemployment, low fruit and vegetable intake.

Recommendation:

The local authorities and village health teams to health educate the communities on how to protect themselves from hypertension.

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1 Background of the study

Hypertension has been defined as a sustained increase in blood pressure above normal measured on two occasions. It is classified into primary hypertension, which accounts for the majority of adulthood hypertension with no iden-

tifiable cause, although there are usually recognizable risk factors, and secondary hypertension with identifiable causes like kidney disease, and heart diseases (Davidson's Principles and Practice of Medicine. 19th Edition). Hypertension is the most common cardiovascular disorder affecting

populations across the globe. WHO (2021), reported that 71% of all global deaths were due to non-communicable diseases and it further stated that cardiovascular disease was the leading cause of death and morbidity among populations wide world contributing to 31% of all the global death of which hypertension contributed to approximately half. Hypertension is one of the major preventable and controllable risk factors for CVDs that has increasingly been a global public health burden affecting all continents. The prevalence of hypertension varies around the world with the lowest prevalence in rural India (3.4% in men and 6.8% in women) and the highest prevalence in Poland (68.9% in men and 72.5% in women). The global prevalence of hypertension has been increasing. In 2000, 972 million people had hypertension with a prevalence rate of 26.4%. These are projected to increase to 1.54 billion affected individuals and a prevalence rate of 29.2% in 2025 (Ulasi *et al* 2011). Incidence rates of hypertension range from 3% to 18% depending on the age, gender, ethnicity, and body size of the population studied (Hajjar *et al* 2006). According to WHO 2012, worldwide, raised blood pressure is estimated to cause 7.5 million deaths, about 12.8% of the total of all deaths. This accounts for 57 million disability-adjusted life years (DALYs) or 3.7% of total DALYS. Hypertension is a major risk factor for coronary heart disease and ischemic as well as hemorrhagic stroke

Until recently in the last two decades ago, hypertension had been given low priority in Africa. The condition is now being widely reported in many parts of Africa and is the most common cause of cardiovascular disease on the continent (Wamala, 2009). Recent studies conducted in Africa revealed prevalence ranging from 7.5% in Sudan (Elbagir and Ahmed 1990 cited in Addo *et al.* 2007, to as high as 37.7% in Tanzania (Wamala, 2009).

One of the cross-sectional studies conducted on hypertension among seven communities in east and west Africa estimated that the number of Africans having hypertension has steadily increased over the last decades with a 70% increase from 1990 to 2000 averaging about 54.6- 92. million people and a 71% rise from 2000 – 2010 from 92.3 – 130 million people. (Samson Okello *et al* 2020). Comparatively other studies done in other countries indicate increasing population hypertension as noted that in Burkina Faso, 18% of its adult residents between 25 -64 years were hypertensive,

24.81% of these being urban while 15.37% being rural dwellers (Soubeiga *et al* 2017). In Kenya, a step-wise survey on the non-communicable disease risk factors among respondents aged 18-69 years indicated that the overall prevalence of hypertension was 25.8% of which men were more hypertensive compared to women 28.21% and 23% respectively. (Gatimu *et al* 2020)

A literature search on the prevalence and/ or determinants of hypertension in Uganda reveals no recent clear publications on this problem in the past few decades. Published community-based studies to estimate the prevalence of hypertension in Uganda were conducted before the 1960s. The first was conducted in the then Teso District in 1941, which showed a prevalence of hypertension of 2.9% among adults aged 21–50 years (Wamala, 2009). Another population-based survey was conducted in the early 1960s in Kasangati, a rural community outside of Kampala city, which revealed the prevalence of hypertension at 13.7% among persons aged 10 years or older (Wamala, 2009). There is therefore scanty literature on the estimated burden and the determinants of hypertension in the Ugandan population.

Anecdotal data in Uganda however suggests that hypertension has increased over the years, and is increasingly becoming a public health problem. Findings from the national non-communicable disease risk factor survey showed that the overall prevalence of hypertension was 26.4%, of which 3906 were aged between 18-69 years. The central region had the highest prevalence of 28.5% compared to the northern region with the least prevalence of 23.9%. The survey generally pointed out that urban areas had a high prevalence compared to the rural areas within Uganda. (Guwatudde *et al* 2015).

Therefore, this study will aim at finding out the factors contributing to hypertension among hypertensive patients at Kajjansi health Centre IV, Wakiso district.

2 Methodology

2.1 Study design

The study was a descriptive cross-sectional design in nature and the researcher employed quantitative methods. The design was preferred because it enabled the researcher to collect data in the shortest time possible.

Study area

The study was carried out at Kajjansi health center IV a government facility located in Kajjansi C village, Kitende parish, Kajjansi Town Council, Wakiso District in the Central Region of Uganda. Its catchment area consists of 4 parishes Bweya, Kitende, Nalanda, and Wamala, with a catchment population of 102,651 people. It is a public health center offering free general services and receives an average of 200 patients per day and has about 10 patient beds with several departments such as; the outpatient department, MCH, Inpatient Department, ART clinic, dental clinic, SMC department, laboratory, pharmacy, antenatal care clinic, YCC service delivery department, COVID-19 screening and vaccination, TB clinic, and diabetic clinic. The facility also carries out several services as per departments as well as reaching out to the communities for different services.

Study population

The study was carried out among hypertensive patients aged 18-45 years attending the OPD hypertension clinic at Kajjansi Health Centre IV.

Sample size determination

The sample size will be estimated using Kish and Leslie formula (1967). The sample size will therefore be calculated as;

$$n = z(1-p)/d^2$$

Where; n= minimum sample size.

z= standard normal deviation corresponding to 95% confident interval (CI) which is 1.96.

p= proportion of survey population with characteristics under study. Because there is no reasonable estimate of the number of people who met the inclusion criteria in the study population, it was presumed at 50% or 0.5.

d= the proposed precision of the study which is 0.138.

Therefore, the sample size n will be: $(1.96)^2 \times 0.5 \times 0.5 / (0.138)^2$

$$= 50.426$$

The sample size will be 50 respondents.

Study variables.

Independent variable.

Independent variables were individual, social, and economic factors contributing to HTN

Dependent variable.

The dependent variable was HTN among patients aged between 18-45 years.

Sampling technique

A simple random sampling procedure was used during data collection. This was because it minimizes and eliminates bias and data can be collected from a large population in a short period hence saving time.

Sampling Procedure

Simple random sampling was used to select respondents whereby numbers were written on small pieces (1-10) of paper, rolled up then mixed appropriately, and put in the box. Respondents were requested to pick a paper from an enclosed box and those who picked even numbers were requested to take part in the study until the sample size was achieved.

Data collection tool

The researcher collected data using a pretested semi-structured questionnaire with open and closed-ended questions written in English language and later translated into the local language (Luganda) for respondents who did not understand the English language.

Pretesting the data collection tool

Before data collection, the pretest of the questionnaire was pretested among 10 hypertensive patients at Kajjansi health center IV and the information gathered was used to rectify and update the data collection tool. The results from the pretested questionnaires were not considered in the main study.

Selection criteria.

Inclusion criteria

Hypertensive male and female patients aged between 18-45 years were included in the study. Patients confirmed to be hypertensive, especially those attending the outpatient department were also included in the desired sample and upon consent, they took part in the study.

Exclusion criteria.

Patients below 18 years and those above 45 years were excluded. Individuals not willing to consent and those who were too ill or lacked physical strength were exempted from the study.

Data collection procedure.

An introductory letter was got from Kampala school of health sciences and taken to the in-charge of Kajjansi health center IV to seek permission to conduct the study. To ensure confidentiality, a private room within the health facility was identified where all those who met the inclusion criteria were interviewed. The researcher recruited two research assistants who assisted her in the process of col-

lecting data. The researcher checked the data and filled in the questionnaires before respondents left the study site.

Data quality control.

Two research assistants with good communication skills and knowledge were trained on how to interview and collect data, right respondents were selected through the inclusion and exclusion criteria. The questionnaire was pretested before actual data collection.

3 Data analysis.

Quantitative data got from the questionnaires were analyzed manually by use of tally sheets and were entered in the Microsoft excel computer program and results were presented in frequency tables, bar graphs, and pie charts.

Research Ethical considerations.

An introductory letter was taken by the researcher to the in-charge of Kajjansi health center IV to seek permission to collect data. Once permitted, participants consented before the distribution of the questionnaires. Each participant was interviewed separately from a private place within the health center and serial numbers were used instead of their names. Any information collected was treated with sufficient confidentiality.

4 Results:

5 Demographic data of respondents

From the table above which shows the demographic data of respondents, the majority of the respondents were aged between 40-45 years followed by 35-39 years, 25-34 years, and those aged between 18-24 years attained the lowest, 54%, 28%, 14 and 4% respectively.

The majority, 60% of the respondents were females while 40% were males.

40% of the respondents attained a secondary education level, followed by 32% who reached a tertiary level and 28% stopped at a primary level however no response was recorded to have never gone to school.

The majority of the respondents, 50% were married, 30% were single respondents, and the divorced and widowed respondents attained the least %; 12% and 8% respectively.

Results also showed that the majority of the respondents were involved in the business (40%), followed by 30% who were peasants and other professionals contributed 30%.

Individual factors contributing to Hypertension among patients aged 18-45 years.

5.1

5.1.1 Distribution of respondents according to how often they eat vegetables and fruits

The figure above shows the distribution of respondents according to how often they eat vegetables and fruits and it presented that half of the respondents, 50% rarely eat vegetables and fruits, 26% of the respondents only eat vegetables and fruits only once a week, and attained, 14% eat vegetables and fruits few days a week while only 10% of the respondents eat vegetables daily.

Distribution of respondents by their BMI.

The figure above which shows the distribution of respondents by their BMI, showed that majority of the respondents were of normal body mass index followed by respondents who were overweight and those who were obese. From the study, no respondent was reported to be underweight; 54%, 32%, and 14% respectively.

Distribution of the respondents according to their chronic illnesses.

The above table shows the distribution of respondents concerning the presence of other chronic illnesses and it indicated that more than half, 58% had no other chronic illness, 18% had DM, 12% had CKD and HF with HIV contributing to the least values; 8% and 4% respectively.

5.1.2 Distribution of respondents according to how often they do physical exercise

The table above shows the distribution of respondents according to how often they do physical exercise and it was discovered that the Majority, 78% of the respondents were physically inactive, 16% of the respondents occasionally do physical exercises whereas 6% of the respondents regularly do physical exercise.

Social factors contributing to Hypertension among patients aged 18-45 years.

Distribution of respondents according to if they have a family history of hypertension.

Table 1. Showing demographic data of respondents.

ITEMS	FREQUENCY (n=50)	PERCENTAGE (%=100)
AGE GROUP in years	2	4
18-24	7	14
25-34	14	28
35-39	27	54
40-45		
SEX	30	60
Female	20	40
Male		
MARITAL STATUS	15	30
Single	25	50
Married	6	12
Divorced	4	8
Widowed		
EDUCATION LEVEL	0	0
Never studied	14	28
Primary	20	40
Secondary	16	32
Tertiary		
OCCUPATION	15	30
peasants	20	40
Business	15	30
Others		

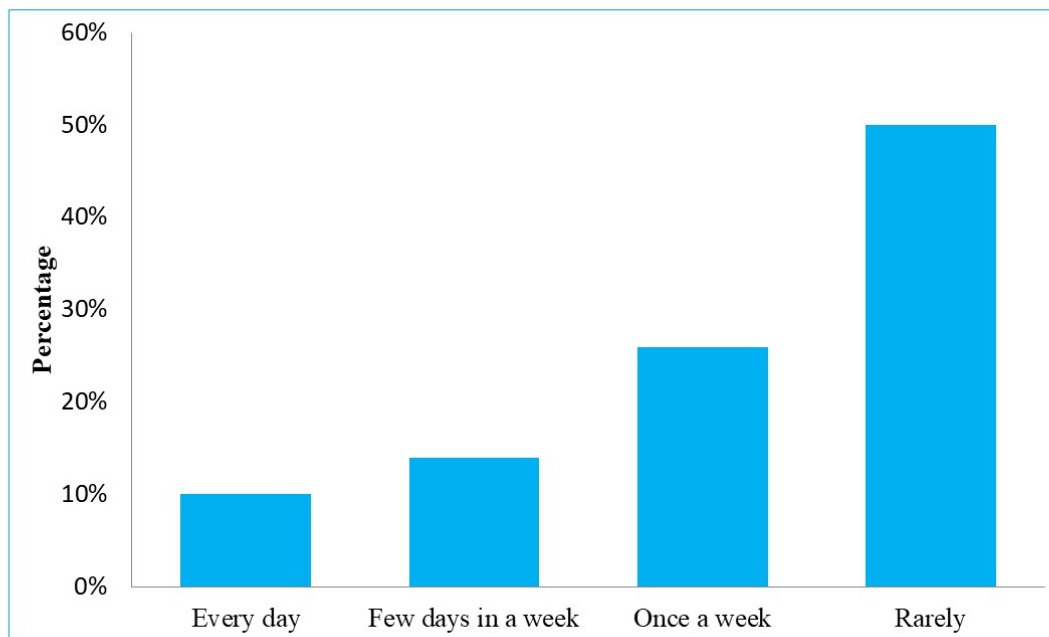


Figure 1. Distribution of respondents by how often they eat vegetables and fruits

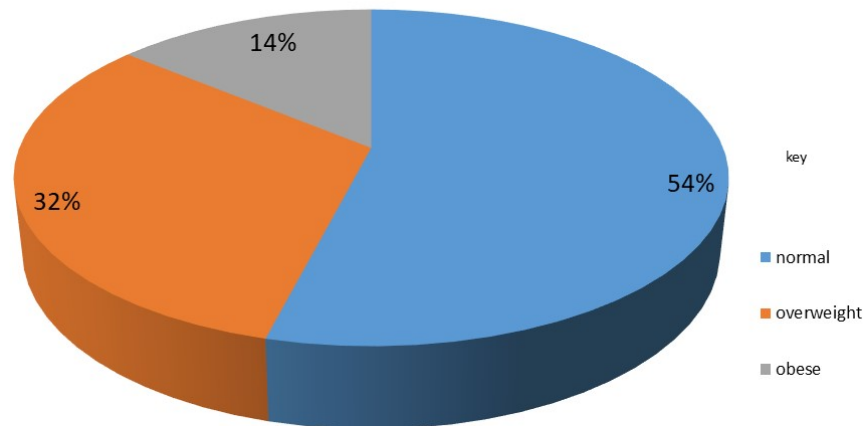


Figure 2. Distribution of respondents by their BMI

Table 2. Distribution of respondents according to their chronic illnesses.

Chronic illnesses	Frequency	Percentages (%)
HIV	2	4
Heart failure	4	8
Diabetes mellitus	9	18
Chronic kidney disease	6	12
None	29	58
TOTAL	50	100

Table 3. Distribution of respondents according to how often they do physical exercise.

Response	Frequency(f)	Percentage (%)
Regularly	3	6
Occasionally	8	16
Never	39	78
TOTAL	50	100

The figure above shows the distribution of respondents having a family history of hypertension that majority of the respondents that is to say 66% had a positive family history of Hypertension whereas 34% had no family history of the disease.

Distribution of the respondents according to the type of family they have.

From the above figure which shows the distribution of the respondents according to the type of

family they have, it was discovered that the majority, 80% of the respondents had nuclear families whereas 20% of the respondents had extended families.

Distribution of respondents according to where they stay.

From the figure above, it was discovered that the majority, 98% of the respondents stay in the urban

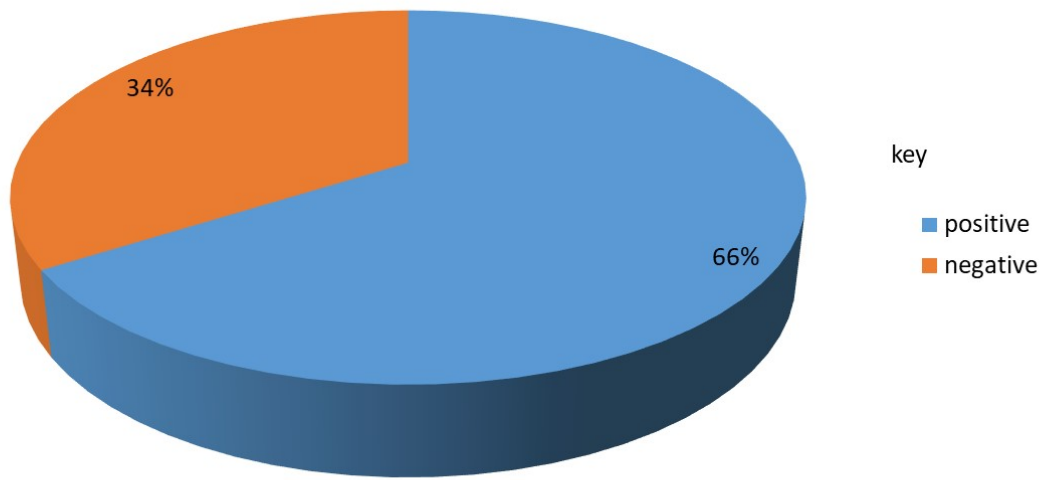


Figure 3. Distribution of respondents according to if they have a family history of hypertension.

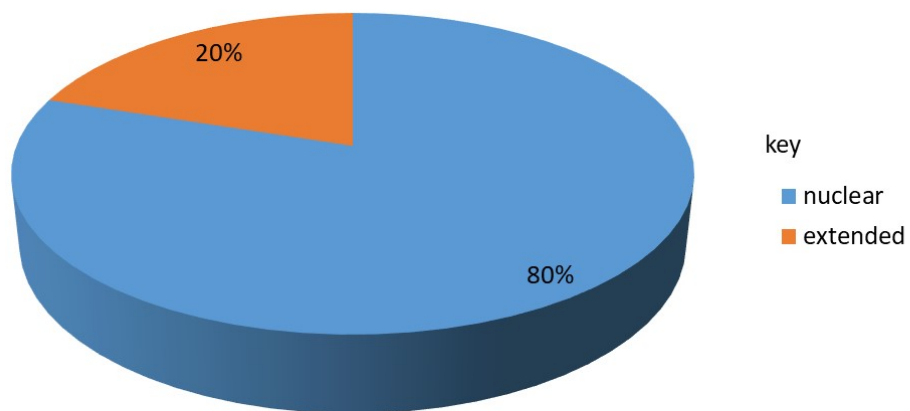


Figure 4. Distribution of respondents according to the type of family they have.

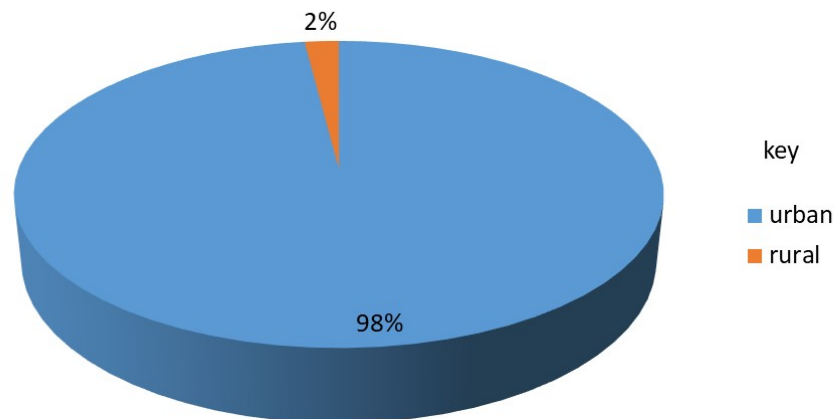


Figure 5. Distribution of respondents according to where they stay.

area and only 2% of the respondents stay in the rural area.

Distribution of the respondents by whether they smoke a cigarette.

The above figure reveals that the majority, 72% of the respondents were non-cigarette smokers whereas 28% of the respondents were cigarette smokers.

Distribution of the respondents by whether they take alcohol.

From the figure above which shows the distribution of the respondents by whether they take alcohol, it was revealed that more than a half, 58% of the respondents were alcohol consumers whereas 42% were not

Economic factors contributing to Hypertension among patients aged 18-45 years.

Distribution of the respondents according to their employment status.

From the figure above which shows the distribution of the respondents according to their employment status, it was revealed that the majority of the respondents (66%) were employed whereas 34% were unemployed.

Distribution of respondents by the category of worker they are. (n=33)

Results from the above figure show that more than half, 57.6% of the respondents were semi-skilled workers, 24.2% of the respondents were skilled whereas 18.2% were unskilled workers.

Distribution of respondents according to their total monthly income. (n=33)

The table above shows that the majority 60.6% of the respondents had a monthly income of 100,000/= -499,000/= (Ugx), 30.3% of the respondents had a monthly income of above 500,000/= whereas 9.1% of the respondents had 10,000/= -99,000/= as their monthly income.

6 Discussion, Conclusion, and Recommendations.

7 Discussion of the findings.

Individual factors contributing to Hypertension among patients aged 18-45 years.

The study findings showed that the majority (54%) of the respondents were aged between 40-45 years. In addition, the prevalence of hypertension increased with age that's from 4% to 54% in different age groups (18-24 to 40-45) which is comparable to findings from one of the researches conducted in Europe which similarly showed the preva-

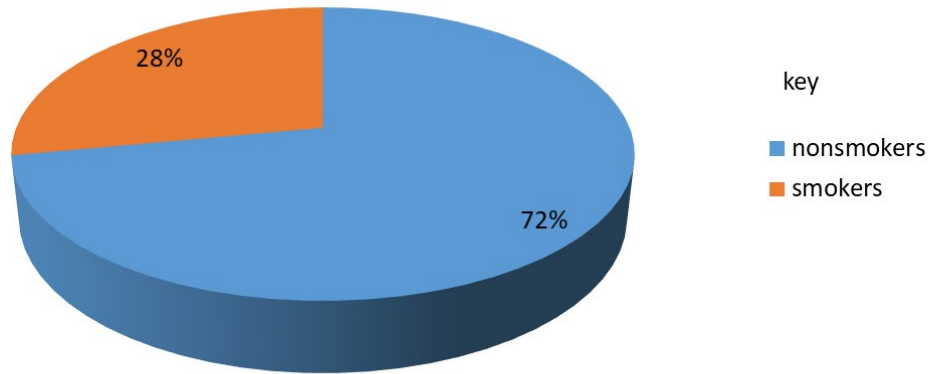


Figure 6. Distribution of respondents by whether they smoke a cigarette

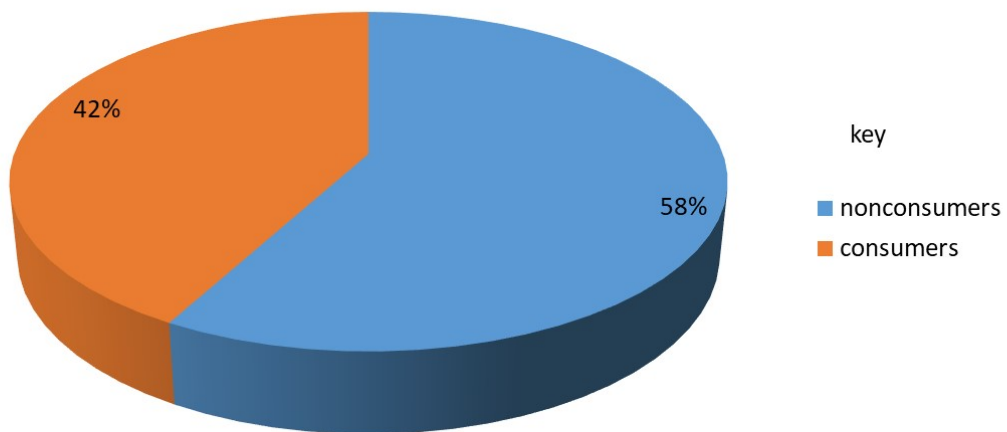


Figure 7. Distribution of respondents by whether they take alcohol.

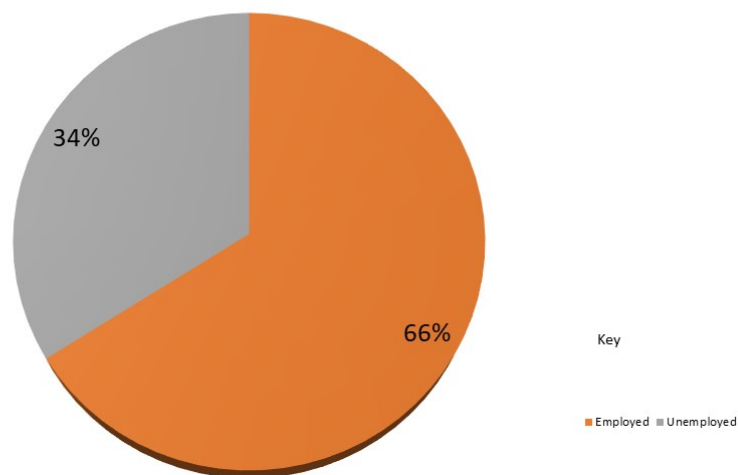


Figure 8. Distribution of respondents according to their employment status.

Table 4. Distribution of respondents by the category of worker they are.

Response	Frequency	Percentage (%)
Skilled worker	8	24.2
Semi-skilled worker	19	57.6
Un skilled worker	6	18.2
TOTAL	33	100

Table 5. Distribution of respondents according to their total monthly income

Total monthly Income (Ugx)	Frequency	Percentage (%)
10,000-99,000	3	9.1
100,000-499,000	20	60.6
Above 500,000	10	30.3
TOTAL	33	100

lence of hypertension increased with increase in age (Cuschier *et al*, 2017).

The finding revealed that more than half (60%) of respondents were females while 40% were males. These findings were in line with those from a study about the risk factors of hypertension in Bhutan which showed that females (62.6%) were more prevalent than males (37.4%) (Tashi Dendup *et al* 2020)

From the study, it was discovered that the majority of the members were of normal body mass

index (54%), 32% were overweight and 14% were obese. An inquiry into the possible shift in BMI showed that since the majority of the respondents were youths and female, many never wanted to over gain weight. Most of them, therefore, attained this by adapting to a "single meal policy" preferably only lunch and snacking in the evening hours in an attempt to control weight. In contrast to this, findings from one of the studies conducted in Kenya about socioeconomic inequalities of hypertension showed that the majority of the respondents were

obese (45.8%), 33.4% were overweight while 20.8% were of normal body weight (Gatim *et al*,2020)

The study finding, results showed that half of the respondents (50%) rarely feed on vegetables and fruits. This is because of a lack of information about the benefits of vegetables and fruits to the body. However, findings from a study carried out on risk factors of hypertension among Kenyans showed that 97% of the hypertensive respondents consume insufficient vegetables and fruits (Olack *et al*, 2015)

The study findings showed that 78% (39) of the respondents were physically inactive while only 22% (11) were regularly involved in active routine physical exercises. Similar results were attained from a study carried out on the prevalence and risk factors for hypertension among adults living in Central Nepal as it was discovered that the highest % of the hypertensive respondents were living a sedentary lifestyle indicated by 30.9% compared to those who lived a normal diet. (Chataut J *et al*, 2011).

From the study, 42% (21) of the respondents had chronic comorbidities that are to say DM, HIV/AIDS, heart failure, and CKD whereas 58% only had HTN as the only chronic illness. The majority of those with chronic comorbidities were diabetic (18%). This was mainly because the diabetic and hypertensive clinics were held on the same day so it was easy to capture a significant number of them. These findings were comparatively similar to those from a study carried out on prevalence, awareness, and factors associated with hypertension in North West Tanzania where 48.2% were diabetic and carried the biggest % (Neem R *et al*, 2017).

Social factors contributing to Hypertension among patients aged 18-45 years.

The study findings showed that most, 40% of the respondents reached the secondary level of education followed by 32% who reached a tertiary level and 28% stopped at a primary level however no response was recorded to have never gone to school.

8 Economic factors contributing to Hypertension among patients aged 18-45 years.

From study findings, clearly showed that most of the respondents (66%) were employed while their

remaining counterparts were not employed 34%. Of those employed majority were employed in the informal sector while only about 6% were formally employed. Study findings also show that more than half of the respondents (57.6%) were semi-skilled workers of which 44% were involved in self-business ventures. This is because most of the respondents attained only a secondary level of education and didn't attain enough skills in institutions. These findings however were not in line with findings from a study carried out on the socioeconomic determinants of HTN in Europe which revealed that 50.2% of Europeans were unemployed of which 44.4% had HTN. (Sarah Cuschieri *et al* 2017)

The study findings revealed that more than half of the respondents who were working had an average total monthly income of 100,000/= - 499,000/= Ugx (60.6%)30.3% of the respondents had a monthly income of above 500,000/= whereas 9.1% of the respondents had 10,000/= -99,000/= as their monthly income. This is because less money got into small-scale businesses they do since most of them are business people. This could also be attributed to the low salaries given to them monthly.

9 Conclusion.

The study reported most of the respondents were in the adult age of 40-45 years majority being females with low consumption of vegetables and fruits and had a normal body weight. Most of the respondents were physical inactivity, took alcohol, were nonsmokers, had diabetes mellitus as a chronic illness, had a family history of hypertension, and were stressed which contributes to the development of hypertension. In addition, the majority of the respondents were educated up to the secondary level, lived in urban areas, employed mainly in the business sector earning between 100,000/= - 499,000/= ugx.

Recommendation.

The government of Uganda through the ministry of health should consider boosting the health facilities with more resources to facilitate health activities like health education and community outreaches targeting mainly people's lifestyles that can lead to hypertension. In addition, the government should also implement strict rules against bad acts like excessive alcohol consumption and smoking cigarettes in public places.

The administration and staff of Kajjansi HCIV should sensitize people within the health facility and around kajjansi town to do physical exercises daily, eat vegetables, and avoid alcohol consumption and smoking cigarette through outreaches and health education.

The researcher recommends the local authorities and village health teams to health educate the communities on how to protect themselves from hypertension.

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11 Abbreviation of Key Terms

HTN: Hypertension

BMI: Body Mass Index

BP: Blood Pressure

cvd: Cardio vascular disease

LMICs: Low and Middle Income Countries

WHO: World Health Organization

NCDs: Non communicable diseases

CVS: Cardiovascular vascular system

CKD: Chronic kidney disease

HF: Heart failure

ART: Anti-retro therapy

ACC/AHA: American College of Cardiology/American Heart Association

MEPI-CVD: Medical education partnership on cardiovascular diseases

12 Operational Definitions.

Hypertension: A persistently high resting blood pressure (>140/90 mmHg for at least two measurements five minutes apart with patient seated) on at least 2 or 3 occasions 1 week apart.

Systolic BP: top number which measures the force the heart exerts on the walls of the arteries each time it beats.

Diastolic BP: The bottom number which measures the force the heart exerts on the walls of arteries in between beats

Non communicable diseases: Diseases that can't be transmitted directly from one person to another.

Prevalence: Total number of cases of a specific disease in given population over a given period of time.

Morbidity: A state of ill health.

Mortality: Number of deaths

Stress: A state of mental or emotional strain

Risk factors: Things that increase a person's chance of developing a.

Tenants: People who occupy land or property rented from the owner

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