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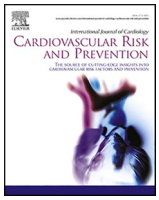

Hypertension risk perception among young adults in Victoria University Kampala Uganda

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ABSTRACT

Introduction: Globally, hypertension is becoming a more serious public health concern, with young adults also at risk. Effective intervention techniques require an understanding of young adults' perceptions of the risk factors, enablers, and barriers to adopting healthy lifestyle choices related to hypertension. This research aims to examine hypertension risk perception among young adults at Victoria University Kampala, Uganda.

Methods: Data were gathered using a structured questionnaire between November 2023 and January 2024. Convenience sampling was used to gather data from young adults at Victoria University Kampala, Uganda. Leslie Kish's formula was used to establish the sample size of 126 respondents. Multiple regression analysis was performed to examine the association between independent variables (barriers, and facilitators) and the dependent variable (perception of hypertension risk).

Results: The study found that perceptions of certain risk factors, such as smoking (OR = 2.418, p = 0.035), physical inactivity (OR = 1.731, p = 0.008), unhealthy diet (OR = 2.174, p = 0.048), and chronic stress (OR = 1.514, p = 0.028), significantly influenced the likelihood of adopting healthy lifestyle choices. Among the enablers, motivation (OR = 3.491, p = 0.005), availability of time (OR = 3.015, p = 0.011), financial resources (OR = 2.164, p = 0.017), and social support (OR = 2.014, p = 0.026) were strong predictors of healthy behaviour adoption.

Conclusion: Programs aimed at raising awareness of hypertension risk factors and enhancing enablers such as motivation, time management, and social support are recommended to effectively promote healthy behaviours among this population.

1. Introduction

Hypertension also known as high blood pressure is a major global public health concern that increases the risk of cardiovascular morbidity and mortality [1–3]. The prevalence of hypertension among young adults in Kampala was estimated to be 9 % [4]. Young adults in Kampala are becoming more likely to have hypertension as a result of harmful lifestyle decisions like inactivity, poor eating habits, and elevated stress levels [4,5]. These elements increase hypertension risk and raise blood pressure levels [6,3,4]. The problem lies in the lack of awareness and low perception of hypertension risk among this population [3]. Many young adults fail to recognize their susceptibility to hypertension and undervalue the possible effects of the illness [3]. This ignorance hinders preventative measures and postpones prompt medical intervention [3, 7].

Risk factors that are both modifiable and non-modifiable combine to impact these behaviours and attitudes. Age, family history, and genetic susceptibility are examples of non-modifiable risk factors, whereas modifiable risk factors include lifestyle decisions including nutrition, exercise, and tobacco use.

It's critical to recognize the enablers and barriers that affect young adults' adoption of healthy lifestyle choices, in addition to their perceptions of risk. Lack of information, restricted access to nutritious dietary options, social and cultural factors, and the belief that one is immune to health dangers are some examples of barriers [4,8,9]. On the other hand, factors that facilitate the adoption of healthy behaviours are peer pressure, accessible health knowledge, and supportive surroundings [3,10,11].

Even though hypertension and related risk factors are becoming more common in Uganda, there is limited data on Kampala's young

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adults. Prior research has mainly focused on older persons or particular high-risk populations [12–14]. As a result, there is a substantial knowledge gap regarding young adults' perceptions of the risk of hypertension, their understanding of such risks, and their participation in preventative practices. Designing efficient health promotion initiatives that can lessen the rising illness burden requires an understanding of how this particular group views hypertension.

This study aims to find out how young adults at Victoria University Kampala, Uganda, perceive risk factors for hypertension, both modifiable and non-modifiable, identify the obstacles to adopting healthy lifestyle choices; and identify the enablers of adopting healthy lifestyle choices among this population. The distinctive feature of this study is that it concentrates on a particular demographic of Kampala young adults, who differ from other age groups in terms of features, behaviours, and risk factors.

2. Methodology

2.1. Study design

This study utilized a cross-sectional survey design to investigate the perceptions of hypertension risk factors, barriers to healthy lifestyle choices, and enablers of adopting healthy lifestyles among young adults at Victoria University Kampala. The cross-sectional design was chosen because it allows for the assessment of multiple variables at a single point in time, providing a snapshot of how young adults perceive hypertension risk and the factors influencing their lifestyle choices. This approach is well-suited to meeting the research objectives as it enables the collection of data on various aspects of risk perception and lifestyle behaviours simultaneously, facilitating a comprehensive understanding of these phenomena within the study population.

2.2. Study setting

This study was done between November 2023 and January 2024 in Victoria University Kampala Uganda. The campus environment, encompassing classrooms, student residences, and recreational areas serves as the backdrop for understanding how young adults perceive the risk of hypertension. Making Victoria University, Kampala an ideal location to study the research topic.

2.3. Study population

Young adults between 18 and 25 years currently enrolled in Victoria University Kampala, Uganda make up the study population.

2.4. Sample size and sampling technique

Leshie Kish's formula was used to determine the necessary sample size [15–17]:

$$n = \frac{z^2 x\, p(1-p)}{e^2}$$

n = sample size
e = margin error
p = prevalence of hypertension among young adults
z = z-score corresponding to the confidence level

Using a 5 % margin of error and 95 % confidence level.

P = 9 % [4].

$$n = \frac{1.96^2 x\, 0.09(1-0.09)}{0.05^2}$$

$$n = \frac{(3.8416\ x\ 0.0819)}{0.0025}$$

n = 125.85

The sample size is 126.

Convenience sampling was used to gather data from Victoria University Kampala students.

Note: The response rate was 100 %, as the exact number of responses collected matched the targeted sample size of 126.

2.5. Data collection instrument

The data collection instrument was a self-designed questionnaire, developed based on a comprehensive literature review. The questionnaire aimed to capture perceptions of hypertension risk factors, barriers to healthy lifestyle choices, and enablers of adopting healthy lifestyles. The instrument was validated by three experts in the fields of public health and cardiology nurse to ensure its content and construct validity. The questionnaire is attached in the appendix.

2.5.1. Pilot study

A pilot study was conducted before the main data collection to assess the reliability and validity of the newly developed questionnaire. The pilot involved 10 participants who were not part of the main study sample. The questionnaire demonstrated high internal consistency, with a Cronbach's alpha of 0.87 across all subscales, indicating that the items were reliably measuring the intended constructs.

Feedback from the pilot participants was used to refine the wording of several items for clarity. Construct validity was supported by factor analysis, which confirmed that items grouped under their respective subscales as intended. Participants found the questionnaire to be straightforward and the length manageable, completing it within approximately 30 min on average.

2.6. Data collection procedure

Data were collected using self-administered questionnaires distributed and collected by trained research assistants. Participants completed the questionnaires at their convenience, and the research assistants were available to provide assistance and clarify any questions. This method ensured that responses were accurately recorded and that participants could engage with the questionnaire without external pressure.

2.7. Data analysis

The Statistical Package for the Social Sciences (SPSS) program version 28 was used to analyze the data. The demographic details of the respondents and their answers to the questionnaire items were compiled using descriptive statistics. Regression analysis was done to look at the relationship between the dependent variable (hypertension risk perception) and the independent variables (perceptions of modifiable and non-modifiable risk factors, barriers, and enablers). The strength and direction of the relationships between these variables were specifically evaluated by the application of multiple regression analysis.

2.8. Ethical considerations

Clarke International University Research Ethics Committee granted the study ethical approval under Reference number: CLARKE-2023-847. Every participant was made aware of the study's objectives, their freedom to discontinue participation at any moment, and the confidentiality of their answers. All participants signed the written informed consent before the commencement of the study. To safeguard the participants' identities, data were anonymised. Using this approach, the

study sought to give a thorough grasp of how young adults at Victoria University Kampala perceived their risk of hypertension.

3. Results

3.1. Socio-demographic characteristics

The socio-demographic characteristics of the participants are presented in Table 1. 48 participants (38 %) were in the age range 18–21 years, with a mean age of 19.34 and 78 participants (62 %) were in the age range 22–25 years, with a mean age of 23.64. The faculty of the participants include: Health Sciences 23 (18 %), Science and Technology 24 (19 %), Humanities and Social Sciences 48 (38 %), and Higher Education Certificate 31 (25 %). Nationality of the participants include Uganda 64 (51 %), South Sudan 26 (21 %), Somalia 18 (14 %), Nigeria 8 (6 %), and Others 10 (8 %).

3.2. Perceptions about modifiable and non-modifiable hypertension risk factors

The perceptions of risk factors are presented in Table 2. 86 participants (68 %) rated Smoking and Physical inactivity as significant risk factors. 30 participants (24 %) considered Family history of hypertension significant.

3.3. Barriers to implementing healthy lifestyle

Barriers to a healthy lifestyle are presented in Table 3. 102 participants (81 %) mentioned that a lack of time is a significant obstacle to leading a healthy lifestyle. 14 participants (11 %) expressed difficulty finding healthy food options as a barrier to a healthy lifestyle.

Table 1
Socio-demographic characteristics of participants.

Variable	Frequency (N = 126)	Percentage
Age		
18–21	48	38 %
22–25	78	62 %
Mean Age	22.63	
Standard deviation	1.70	
Age (18–21 years)		
Mean Age	19.34	
Standard deviation	0.81	
Age (22–25 years)		
Mean Age	23.64	
Standard deviation	0.75	
Gender		
Male	54	43 %
Female	72	57 %
Religion		
Christian	66	52 %
Muslim	55	44 %
Others	5	4 %
Nationality		
Uganda	64	51 %
South Sudan	26	21 %
Somalia	18	14 %
Nigeria	8	6 %
Others	10	8 %
Faculty		
Health Sciences	23	18 %
Science and Technology	24	19 %
Humanities and Social Sciences	48	38 %
Higher Education Certificate	31	25 %
Year of study		
First Year	78	62 %
Second Year	48	38 %

Table 2
Perceptions about modifiable and non-modifiable hypertension risk factors.

Factors	Frequency (N = 126)	Percentage
Non-Modifiable Hypertension Risk Factors		
Smoking	86	68 %
Physical inactivity	86	68 %
Unhealthy diet (high in sodium, saturated fats, etc.)	83	66 %
High cholesterol levels	79	63 %
Chronic stress	79	63 %
Excessive alcohol consumption	71	56 %
Obesity	54	43 %
Diabetes	54	43 %
Non-Modifiable Hypertension Risk Factors		
Age	79	63 %
Family history of hypertension	30	24 %

Table 3
Barriers to implementing healthy lifestyle.

Factors	Frequency (N = 126)	Percentage
Lack of time	102	81 %
Lack of motivation	87	69 %
Peer pressure (e.g., friends, family, colleagues influencing unhealthy choices)	77	61 %
Ignorance about healthy lifestyle practices	69	55 %
Financial constraints (e.g., cost of healthy food, gym membership)	66	52 %
Lack of social support (e.g., lack of encouragement from family/friends)	66	52 %
Stress or emotional factors	53	42 %
Lack of knowledge about how to establish and sustain a healthy lifestyle	53	42 %
Limited access to exercise facilities or opportunities	40	32 %
Difficulty finding healthy food options	14	11 %

3.4. Enablers to implementing healthy lifestyle

Enabling factors for a healthy lifestyle are presented in Table 4. 88 participants (70 %) stated that motivation plays a crucial role in their ability to maintain a healthy lifestyle. The list of enabling factors highlighted by the responding participants was the importance of role models or inspirational figures who promote a healthy lifestyle.

3.5. Regression analysis

The multiple linear regression analysis on socio-demographic characteristics and perceptions of hypertension risk factors is presented in

Table 4
Enablers to implementing healthy lifestyle.

Factors	Frequency	Percentage
Motivation	88	70 %
Availability of time	86	68 %
Financial resources to support a healthy lifestyle (e.g., affordability of healthy food options, gym memberships)	73	58 %
Social support (e.g., encouragement from family, friends, or support groups):	68	54 %
Availability of convenient healthy options (e.g., healthy meal delivery services, nearby fitness centers)	66	52 %
Knowledge and awareness about healthy lifestyle practices	53	42 %
Personal discipline and self-control	50	40 %
Ability to manage stress effectively	50	40 %
Role models or inspirational figures who promote a healthy lifestyle	45	36 %

Table 5
Multiple linear regression analysis on socio-demographic characteristics and perceptions of hypertension risk factors.

Predictor Variable	Coefficient (B)	Standard Error	t-value	p-value
Age (18–21 vs. 22–25)	0.213	0.052	4.102	<0.001
Gender (Female vs. Male)	−0.134	0.076	−1.765	0.080
Religion				
Christian	Reference			
- Muslim	0.045	0.098	0.460	0.646
- Other Religions	−0.087	0.074	−1.175	0.241
Nationality				
- Ugandan	Reference			
- South Sudanese	0.102	0.063	1.615	0.109
- Somalian	0.076	0.071	1.071	0.285
- Nigerian	0.032	0.082	0.389	0.698
- Other Nationalities	0.065	0.057	1.140	0.256
Faculty				
- Humanities and Social Sciences	Reference			
- Science and Technology	0.094	0.066	1.424	0.156
-Health Sciences	0.112	0.048	2.333	0.021
- Higher Education Certificate	0.045	0.072	0.625	0.532
Years of Study (first year vs. second year)	−0.041	0.035	−1.171	0.243

Table 5 A p-value <0.05 suggests statistical significance. Being in the age group of 22–25 years and faculty of Health Sciences are significant.

Despite some significant findings, the coefficients for most predictors are relatively small. This suggests that while certain socio-demographic factors do have an impact on perceptions of hypertension risk, their effect sizes are modest. In practical terms, this indicates that although these factors contribute to the overall perception of risk, they do so in a limited capacity. This might reflect the complexity of hypertension risk perceptions, which could be influenced by a broader range of variables not captured in this model.

The R-value of 0.44 suggests a moderate positive relationship between the observed and predicted values of the perceptions of hypertension risk factors. The R-squared value of 0.192 indicates that approximately 19.2 % of the variance in perceptions of hypertension risk factors is explained by the socio-demographic characteristics included in the model. This suggests that while the model has some explanatory power, a significant proportion of the variance remains unexplained, implying the potential influence of other unmeasured factors.

3.6. Overall model statistics

- **R: 0.44**
- **R-squared: 0.192**

The multiple logistic regression analysis on perceptions of risk factors and obstacles to adopting a healthy lifestyle is presented in Table 6. The dependent variable is binary, indicating whether an individual adopts a healthy lifestyle or perceives a high risk of developing hypertension. The predictors (independent variables) are various perceptions of risk factors and reported barriers to healthy lifestyle choices. The odds ratios (Exp(B)) provide a comparison between the likelihood of the outcome occurring versus not occurring for each predictor. The multiple logistic regression analysis demonstrates that perceptions of certain risk factors (smoking, physical inactivity, unhealthy diet, high cholesterol levels, and chronic stress) are positively associated with the likelihood of adopting a healthy lifestyle. However, the presence of significant barriers can significantly reduce the likelihood of making healthier lifestyle choices.

The multiple logistic regression analysis on perceptions of risk factors and enablers of healthy lifestyle choices is presented in Table 7. The dependent variable is binary, indicating whether an individual adopts a healthy lifestyle or perceives a high risk of developing hypertension. The predictors (independent variables) are various perceptions of risk factors and reported barriers to healthy lifestyle choices. The odds ratios (Exp (B)) provide a comparison between the likelihood of the outcome occurring versus not occurring for each predictor. The multiple logistic regression analysis suggests that both perceptions of certain risk factors (smoking, physical inactivity, unhealthy diet, and chronic stress) and the presence of enablers play crucial roles in influencing young adults at Victoria University Kampala to adopt healthier lifestyle choices.

Table 6
Multiple logistic regression analysis on perceptions of risk factors and barriers to healthy lifestyle choices.

Predictor Variable	Coefficient (B)	Standard Error	Wald Chi-Square	p-value	Exp(B) (Odds Ratio)
Perceptions of Risk Factors					
Smoking	0.876	0.321	7.218	0.007	2.398
Physical inactivity	0.542	0.216	6.213	0.011	1.720
Unhealthy diet	0.731	0.285	5.264	0.015	2.056
High cholesterol levels	0.346	0.187	4.284	0.026	1.423
Chronic stress	0.498	0.251	5.428	0.023	1.645
Age	0.723	0.432	6.372	0.081	0.024
Excessive alcohol consumption	0.651	0.515	5.314	0.351	0.137
Obesity	0.843	0.339	6.472	0.326	0.059
Diabetes	0.671	0.416	5.317	0.729	0.062
Family history of hypertension	0.586	0.365	5.249	0.191	0.074
Reported Barriers to Healthy Lifestyle Choices					
Lack of time	1.208	0.412	8.164	0.004	3.350
Lack of motivation	0.988	0.341	6.872	0.009	2.681
Peer pressure	0.769	0.289	5.324	0.017	2.078
Ignorance about healthy lifestyle practices	0.618	0.253	4.637	0.028	1.920
Financial constraints	0.537	0.224	5.216	0.021	1.720
Lack of social support	0.421	0.198	4.379	0.042	1.532
Stress or emotional factors	0.726	0.318	5.473	0.015	2.120
Lack of knowledge about how to establish and sustain a healthy lifestyle	0.611	0.283	4.372	0.033	1.841
Limited access to exercise facilities or opportunities	0.475	0.198	4.216	0.040	1.626
Difficulty finding healthy food options	0.395	0.174	3.869	0.049	1.482

4. Discussion

The age range of 22–25 years old was found to have a substantial impact on how people perceive risk factors for hypertension. This result is in line with earlier studies [1,14] that found age group to be a key factor influencing hypertension risk perception. As a result, programs aimed at this population group may have a greater impact on encouraging healthy lifestyle choices and reducing risk factors for hypertension. Moreover, the noteworthy importance of the individuals who were enrolled in the Health Sciences faculty highlights the possible impact of educational background on attitudes and practices connected to health. This is consistent with research showing how education shapes people's health-related knowledge, beliefs, and behaviours (Gyamfiet al., 2019; [3]). It suggests that those who study health-related fields might be more conscious of and committed to preventative health care, and they might even become community advocates for good lifestyle choices.

In contrast to some previous research [3,13] that emphasizes

Table 7
Multiple logistic regression analysis on perceptions of risk factors and enablers to healthy lifestyle choices.

Predictor Variable	Coefficient (B)	Standard Error	Wald Chi-Square	p-value	Exp(B) (Odds Ratio)
Perceptions of Risk Factors					
Smoking	0.789	0.234	3.376	0.035	2.418
Physical inactivity	1.026	0.38	4.029	0.008	1.731
Unhealthy diet	0.693	0.357	3.783	0.048	2.174
High cholesterol levels	0.452	0.249	3.292	0.070	2.113
Chronic stress	0.626	0.285	4.832	0.028	1.514
Age	−0.315	0.272	1.345	0.246	0.056
Excessive alcohol consumption	0.215	0.191	1.254	0.263	0.129
Obesity	0.083	0.243	0.119	0.730	0.061
Diabetes	−0.401	0.301	1.783	0.182	0.059
Family history of hypertension	0.498	0.412	5.317	0.216	0.068
Reported Enablers to Healthy Lifestyle Choices					
Motivation	1.213	0.398	8.159	0.005	3.491
Availability of time	1.007	0.352	7.106	0.011	3.015
Financial resources	0.826	0.317	6.318	0.017	2.164
Social support	0.714	0.308	5.215	0.026	2.014
Availability of convenient healthy options	0.629	0.284	4.972	0.022	1.974
Knowledge and awareness about healthy lifestyle practices	0.593	0.275	4.856	0.031	1.864
Personal discipline and self-control	0.582	0.294	4.436	0.018	2.473
Ability to manage stress effectively	0.529	0.283	4.372	0.031	1.984
Role models	0.491	0.198	4.216	0.039	1.792

demographic variables like gender and socio-economic status as important determinants of health behaviours, our study found no statistically significant relationship between these factors and young adults' perceptions of the risk of hypertension at Victoria University Kampala. This disparity may be explained by the study population's homogeneity in socioeconomic background and educational attainment, which may have lessened the impact of these factors on attitudes and actions related to health.

The perception of modifiable and non-modifiable risk factors for hypertension provided complex insights into how young adults in a university setting prioritize and recognize their health. According to the majority of participants, smoking, physical inactivity, poor diet, and ongoing stress were identified as key risk factors, which is consistent with previous research [3,15,18]. This increased understanding highlights the complex aetiology of hypertension and the importance of lifestyle-related variables in the development and course of the condition. It is remarkable, nevertheless, that despite their well-established connections with hypertension, several risk variables, such as obesity and diabetes, were viewed as somewhat less significant. This result differs from other previous studies [7,15,18] that highlighted obesity as a serious health concern among young adults due to its rising prevalence. These differences in how risk factors are perceived highlight the need for focused educational initiatives to bridge knowledge gaps and encourage a thorough grasp of the risk factors for hypertension in this particular population.

Determining the obstacles that prevent young adults from adopting healthy lifestyle choices is essential to developing interventions that effectively encourage behaviour modification and lower their risk of hypertension. Our study found that the primary obstacles to adopting and maintaining healthy lifestyles are time restrictions, lack of motivation, social influences, and financial constraints, which is consistent with previous research [8,13,19]. These results highlight the intricate interactions between social, environmental, and human factors that affect health behaviour choices. They also emphasize the need for multimodal interventions that target barriers at the individual level as well as more general socio-environmental determinants.

Comprehending the elements that promote the adoption of health-conscious lifestyle practices is essential for formulating focused interventions that capitalize on the community's current assets and capabilities. According to our research, the main factors enabling young individuals to choose healthy lifestyles are access to convenient healthful options, financial resources, social support, and motivation. These results are consistent with earlier studies [9–11] that highlighted the role of environmental supports, personal motivation, and social support networks in encouraging young adults to change their health-related behaviours. Through utilizing these facilitators, interventions can be customized to leverage pre-existing capabilities within the community, consequently augmenting their efficacy and durability.

The findings from this study have several important implications for public health initiatives, particularly in university settings like Victoria University Kampala. Given the significance of age, particularly the age group of 22–25 years, and enrollment in the faculty of Health Sciences in shaping perceptions and behaviours related to hypertension risk factors, we recommend the implementation of targeted health education programs. These programs should be designed to leverage the influence of students within this demographic cohort, empowering them to disseminate accurate information about hypertension prevention and healthy lifestyle choices to their peers. Incorporating peer-led discussions can effectively engage young adults and foster a culture of health promotion within the university community.

The study also highlights a critical gap in the awareness of certain risk factors, such as obesity and diabetes, which, despite their strong association with hypertension, are not fully recognized by the participants. This suggests a need for comprehensive educational programs that cover a broader spectrum of risk factors, ensuring that young adults have a well-rounded understanding of what contributes to hypertension.

Building upon the identified perceptions of modifiable hypertension risk factors, such as smoking, physical inactivity, unhealthy diet, chronic stress, and obesity, we recommend the development and implementation of comprehensive lifestyle interventions. These interventions should adopt a multifaceted approach, encompassing behavioural, environmental, and policy-level strategies to address the root causes of unhealthy behaviours. Incorporating elements such as smoking cessation programs, physical activity initiatives, nutrition education, stress management techniques, and access to healthy food options can empower young adults to make informed choices and adopt healthier lifestyles. Interventions must also address other practical challenges such as lack of time, motivation, and financial constraints, to help young adults incorporate healthier behaviours into their daily lives.

5. Limitations

1. Self-Reported Data: Based on participant self-reports, which could be subject to recollection or social desirability bias, the data was acquired. An attempt was made to lessen these biases by emphasizing genuine responses, assuring anonymity, and providing clear instructions.
2. Cross-Sectional Design: It is challenging to ascertain whether two variables are related causally or over time when using a cross-sectional design. In this regard, longitudinal studies may provide more convincing evidence.
3. Potential for Social Desirability Bias: It's possible that participants gave answers that they thought would be acceptable in society, which caused them to overestimate healthy activities and underestimate unhealthy ones. Policies were put in place to reduce social desirability bias, like guaranteeing secrecy and anonymity.

6. Conclusion

This research has explored the perceptions of hypertension risk factors, barriers to healthy lifestyle choices, and enabling factors among young adults at Victoria University Kampala, Uganda. The findings highlight the importance of addressing modifiable risk factors such as smoking, physical inactivity, and unhealthy diet, while also recognizing the influence of non-modifiable factors like age and family history.

The study identified significant barriers to adopting and maintaining healthy behaviours, including time constraints, lack of motivation, and social influences, underscoring the need for targeted interventions that address socio-environmental determinants of health. Conversely, enabling factors such as motivation, social support, and access to resources were identified as facilitators of healthy lifestyle choices, suggesting opportunities for intervention.

While the findings provide valuable insights into hypertension prevention among young adults, several limitations should be acknowledged, including the cross-sectional design and the use of self-reported data. Future research should employ longitudinal approaches, qualitative methods, and community-based participatory research to further elucidate the complex interplay of factors influencing hypertension risk perception and health behaviours.

Despite these limitations, the implications of this research are far-reaching. By implementing evidence-based interventions informed by the study findings, policymakers, healthcare providers, and university administrators can work together to create environments that promote healthy living and reduce the burden of hypertension among young adults. This includes integrating health education into the university curriculum, addressing socioeconomic barriers to healthy behaviours, and leveraging technology for health promotion initiatives. Furthermore, this research contributes to the broader literature on hypertension prevention and health promotion, offering insights into the unique challenges and opportunities for intervention within the young adult population.

Data availability

All data used will be made available on request.

Appendix: questionnaire

SECTION 1: SOCIO-DEMOGRAPHIC FACTORS (fill in the gap/tick where appropriate)

Questions		Response				
1.1	Respondent's first name					
1.2	Age (years)					
1.3	Gender	a. Male b. Female				
1.4	Religion	a. Christian b. Muslim c. Others (specify)				
1.5	Nationality	a. Ugandan b. Others (specify)				
1.6	Faculty					
1.7	Which course are you pursing?					
1.8	Year of study					
Section 2: Knowledge of Hypertension						
2.1	Have you heard of hypertension before?	a. Yes b. No				
2.2	familiarity with hypertension	Not familiar at all	Slightly familiar	Moderately familiar	Quite familiar	Very familiar
2.3	What do you think hypertension refers to? (Select all that apply)	a. High blood pressure b. Low blood pressure c. Heart disease d. Kidney disease e. None of the above				
2.4	Which of the following are common causes of hypertension? (Select all that apply)	a. Poor diet b. Sedentary lifestyle c. Genetics d. Smoking e. Stress f. None of the above				
2.5	Which of the following are risk factors for developing hypertension? (Select all that apply)	a. Age b. Obesity c. Diabetes d. Family history of hypertension e. Alcohol consumption f. None of the above				
2.6	Can hypertension be managed or controlled?	a. Yes b. No c. Not sure				
2.7	Which of the following lifestyle changes can help in managing hypertension? (Select all that apply)	a. Regular exercise b. Healthy diet c. Medication d. Stress management techniques e. None of the above				
2.8	Have you ever measured your own blood pressure?	a. Yes b. No				
2.9	How often do you think blood pressure should be checked?	a. Every year b. Every six months c. Every month d. Only when feeling unwell				

(continued on next page)

(*continued*)

SECTION 1: SOCIO-DEMOGRAPHIC FACTORS (fill in the gap/tick where appropriate)		
		e. Not sure
2.10	Additional Comments	
Section 3: Lifestyle Behaviors		
3.1	How would you rate your overall diet?	a. Very unhealthy b. Somewhat unhealthy c. Neutral d. Somewhat healthy e. Very healthy
3.2	How often do you engage in moderate-intensity physical activity (e.g., walking, cycling)?	a. Never b. Rarely (less than once a week) c. Occasionally (1–2 times a week) d. Regularly (3–4 times a week) e. Very regularly (5 or more times a week)
3.3	On average, how many alcoholic beverages do you consume per week?	a. None b. 1–2 drinks c. 3–4 drinks d. 5 or more drinks
3.4	How do you manage stress in your life? (Select all that apply)	a. Regular exercise b. Meditation or mindfulness techniques c. Spending time with loved ones d. Pursuing hobbies or interests e. Seeking professional help (therapy, counseling, etc.) f. Other (please specify) g. I don't actively manage stress
3.5	Additional Comments	

Section 4: Perceptions of Risk Factors (Please rate the significance of the following risk factors in the development of hypertension)

Factors		Not significant at all	Slightly significant	Moderately significant	Quite significant	Extremely significant
4.1	Smoking					
4.2	Unhealthy diet (high in sodium, saturated fats, etc.)					
4.3	Family history of hypertension					
4.4	Chronic stress					
4.5	Physical inactivity					
4.6	Obesity					
4.7	Excessive alcohol consumption					
4.8	Diabetes					
4.9	High cholesterol levels					
4.10	Age					
4.11	Additional Comments					

Section 5: Barriers to Healthy Lifestyle (Please indicate the extent to which each of the following factors acts as a barrier to establishing and sustaining a healthy lifestyle in your opinion)

Factors		Not a barrier at all	Slightly barrier	Moderately barrier	Quite a barrier	A significant barrier
5.1	Lack of time					
5.2	Difficulty finding healthy food options					
5.3	Lack of motivation					
5.4	Peer pressure (e.g., friends, family, colleagues influencing unhealthy choices)					
5.5	Ignorance about healthy lifestyle practices					
5.6	Financial constraints (e.g., cost of healthy food, gym membership)					
5.7	Lack of social support (e.g., lack of encouragement from family/friends)					
5.8	Stress or emotional factors					
5.9	Lack of knowledge about how to establish and sustain a healthy lifestyle					
5.10	Limited access to exercise facilities or opportunities					
5.11	Additional Comments					

Section 6: Enabling Factors for a Healthy Lifestyle (Please indicate the extent to which each of the following factors enables you to adopt a healthy lifestyle)

Factors		Not an enabling factor at all	Slightly enabling factor	Moderately enabling factor	Quite an enabling factor	A significant enabling factor
6.1	Motivation					
6.2	Knowledge and awareness about healthy lifestyle practices					
6.3	Social support (e.g., encouragement from family, friends, or support groups):					
6.4	Access to healthy resources (e.g., nutritious food options, exercise facilities)					
6.5	Availability of time					
6.6	Financial resources to support a healthy lifestyle (e.g., affordability of healthy food options, gym memberships)					
6.7	Personal discipline and self-control					
6.8	Role models or inspirational figures who promote a healthy lifestyle					
6.9	Ability to manage stress effectively					
6.10	Availability of convenient healthy options (e.g., healthy meal delivery services, nearby fitness centers)					
6.11	Additional Comments					

CRediT authorship contribution statement

Grace Afam: Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Annet Patience Nakalega:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision.

Declaration of competing interest

None

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