High Level of Exposure to Risk Information about Kidney Disease and Poor Knowledge, Poor Risk Perception and Poor Lifestyle Choices among University Students: Implications for University-Based Kidney Interventions in Nigeria

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ABSTRACT

Previous studies have observed that university students may face increased risks of kidney disease due to unhealthy lifestyle choices, stress, and poor healthcare-seeking behaviour among the population. Therefore, this study aimed to investigate the correlation between access to risk information about kidney disease and knowledge, risk perception, and lifestyle choices among university students. The objectives include: to determine the level of exposure to risk information about kidney disease, identify the predominant communication channel and source of risk information about kidney disease, and examine the effect of risk information on knowledge of kidney disease, risk perception of the disease, and lifestyle choices among university students in Ekiti State. The study adopted a quantitative approach, using a cross-sectional survey method and questionnaire as the instrument of data collection. The study participants involved 383 undergraduate students selected from a federal (Federal University, Oye-Ekiti (FUOYE), state-owned (Ekiti State University (EKSU), and privately owned (Afe Babalola University, ABUAD) universities, using the online Google form. The findings showed a high level of awareness about kidney diseases and exposure to risk information about the disease. Social media served as the major channel of exposure to risk information, while non-governmental organizations served as the highest source of information. However, the results suggest poor knowledge of kidney disease, poor risk perception, and poor lifestyle choices among the students. Inferential analysis using Pearson's Chi-square statistics revealed that the level of exposure to risk information about kidney disease has a statistically significant effect on knowledge, risk perception, and lifestyle choices among university students at $p<0.05$. These findings highlight the need for deliberate and persistent university-based kidney interventions. Effective interventions should focus not just on designing and implementing communication interventions to promote awareness and knowledge of kidney issues, but also on strategies to increase risk perception and support behavior change among students, as well as subsidized or free kidney screenings to ensure early detection of kidney problems.

Keywords: Kidney Disease; Kidney Health; Lifestyle Choices; Risk Information; Risk Perception; University Students

INTRODUCTION

Kidney disease has become a menace to public health, affecting millions of people, and is ranked as the seventh leading cause of death (Francis et al., 2024), with the burden likely to increase due to demographic trends and climate change (Francis et al., 2024). The kidneys are essential organs responsible for the filtration of wastes from the blood, controlling the stability of electrolytes, maintaining blood pressure, and delivering hormones for the production of red blood cells and bone vitality (Dalal, Bruss & Sehdev, 2023). Despite their importance, kidney health is often overlooked; most people, including those at high risk, remain unaware of the disease (Tummalapalli et al., 2020), and most people lack knowledge of the risk factors.

Research has recognized three risk factors for kidney disease, including medical, environmental, and lifestyle factors. The medical factors include diabetes, hypertension (Luyckx et al., 2017; Staplin, Haynes & Herrington,

2020; Tummalapalli et al., 2020), Glomerulonephritis (inflammation of the kidney's filtering units) resulting from infection or autoimmune diseases (Nnamdi et al., 2024), and Polycystic Kidney Disease (PKD), a genetic disorder characterized by the formation of fluid-filled cysts in the kidneys (Nnamdi et al., 2024). Environmental risk factors include constant exposure to heavy metal toxins such as lead, cadmium, mercury, and industrial chemicals, chronic dehydration, increasing the concentration of waste products in the urine, and Urinary Tract Infections (UTIs). The lifestyle factors include unhealthy diets such as high consumption of processed foods, sodium or sugar-sweetened beverages, red and processed meats, and unhealthy fats (Kramer, 2019; Francis et al., 2024), sedentary lifestyle and excess body weight/obesity (Langham et al., 2022), and excessive smoking and alcohol consumption (Morrow et al., 2024). Whereas genetic factors may not be controlled, lifestyle choices such as healthy diets, physical activity/exercise, etc., can reduce the risk of obesity, hypertension, and diabetes, thereby leading to better kidney health (Chukwuonye et al., 2018; Olanrewaju et al., 2020).

Therefore, besides improving access to healthcare and enhancing screening programmes, efforts at addressing this issue include advocacy campaigns and mitigating the risk factors via healthy lifestyle choices. Thus, the International Society of Nephrology (ISN) launched World Kidney Day in 2006, and dedicated the second Thursday of March every year for kidney health advocacy, to promote awareness about this public health challenge. Over the years, health promotion agencies, government and non-government organizations, and individuals have leveraged on this event to educate people about kidney functions, risk factors, and healthy lifestyle practices (including regular exercise, healthy eating, proper management of blood pressure and diabetes, regular check-up and the need for early detection of kidney problems) that could reduce the propensity of kidney disease (St Nicholas Hospital Lagos, 2024; Lagos State Ministry of Health, 2025). Thus, the event often involves road walks, educational sessions, social media advocacy (#WorldKidneyDay, #KidneyHealthForAll, etc.), community outreaches, and free screenings, in addition to advocacy for policies that support kidney health, including universal health coverage and affordable dialysis (Oluwaseyi, 2025), and broadcast and print media reportage.

These risk information are disseminated through various methods and platforms including the traditional print media (brochures, pamphlets, and newsletters), public service announcements and health segments on radio and television, digital channels (such as websites, webinars and online workshops), and social media platforms (Facebook, Instagram, Twitter, TikTok, Telegram, WhatsApp etc.). Interactive channels such as podcasts and community engagement (like health fairs and local events) are utilized to provide information and resources directly to communities, facilitate support groups and sharing of personal experiences, in addition to patient-provider communication.

Despite these efforts, kidney disease has remained prevalent in many low-income countries, including Nigeria (Olanrewaju et al., 2020; Akokuwebe & Idemudia, 2023), with many diagnosed almost at the end stages, mounting a huge financial burden on the patients and their families. Research has also shown that urban areas tend to report higher prevalence rates of kidney disease compared to rural settings due to significant variations in lifestyle, socioeconomic factors contributing to the late diagnosis and undetected kidney issues, as well as prevalent cultural practices of oral herbal medication, some of which are nephrotoxic.

Research has shown that Ekiti state has recorded a prevalence rate of 24% in 2015 (Dada et al., 2015) and 22.3% in 2022 (Ibitoba, Akpor, & Akpor, 2022). The state is the home of seven (federal, state, and private) universities approved by the federal government. Thus, university students comprise a substantial population of the state. Previous studies have found that many university students are at risk of developing kidney disease due to unhealthy lifestyle choices (such as alcohol and illicit drugs consumption, smoking, chronic analgesic use, use of bleaching creams, and poor diet) that can significantly increase the risk (Ladi-Akinyemi & Ajayi, 2017). More worrisome is the previous reports of university students having poor knowledge of kidney disease in various contexts, including Nigeria (Okwuonu et al., 2015; Ngendahayo et al., 2019; Sowtali et al., 2019; Loo et al., 2022), even though they exhibit some lifestyles that may put them at risk of kidney problems. These findings highlight the importance of investigating the university students' population in an area already identified as having a high prevalence of kidney disease. Hence, more research is essential to ensure that the large student population in Ekiti State is well informed and better equipped to take charge of their kidney health.

Understanding the effects of the kidney health advocacy on knowledge, risk perception, and lifestyle choices can provide valuable insights for university-based interventions.

Research Questions

1. What is the level of exposure to risk information about kidney disease?
2. What is the predominant communication channel and source of risk information about Kidney diseases?
3. What is the level of university students' knowledge about kidney disease?
4. What is the level of risk perception of kidney disease among university students?
5. What is the level of adherence to lifestyle choices that can reduce the risks of kidney disease among university students in Ekiti State?

Research Objectives

1. To determine the level of exposure to risk information about kidney disease.
2. To identify the predominant communication channel and source of risk information about kidney diseases.
3. To examine the knowledge of kidney disease among university students.
4. To assess the level of risk perception about kidney disease.
5. To evaluate the adherence to lifestyle choices that can reduce the risks of kidney disease among university students in Ekiti State.

Study hypotheses

1. The level of exposure to risk information has no significant effect on knowledge of kidney disease.
2. The level of exposure to risk information has no significant effect on the risk perception of kidney disease.
3. The level of exposure to risk information has no significant effect on the adoption of lifestyle choices that can reduce the risks of kidney disease among university students in Ekiti State.

LITERATURE REVIEW

Knowledge of Kidney Disease, Risk Perception and Lifestyle Choices among University Students

Kidney disease is a growing global health concern, yet awareness, risk perception, and preventive lifestyle behaviors among university students remain suboptimal. Multiple cross-sectional studies across diverse countries—including Malaysia, Rwanda, Ghana, Ethiopia, and Nigeria—reported that a significant proportion of university students possess only average or poor knowledge of kidney disease, its risk factors, and preventive practices (Okwuonu et al., 2015; Ngendahayo et al., 2019; Wolide et al., 2019; Loo et al., 2022; Imran et al., 2025). Health-related faculties and higher years of study are associated with better knowledge, but even among health sciences students, gaps persist, particularly regarding symptoms and diagnosis (Sowtali et al., 2019; Wolide et al., 2019). Risk perception is generally low, with many students underestimating their susceptibility to kidney problems, especially in high-risk groups (Ches, Mph & Juncos, 2016). Lifestyle choices, including physical inactivity, poor diet, and low engagement in preventive health behaviors, are prevalent and often not influenced by knowledge or risk perception (Ngendahayo et al., 2019). These findings highlight the urgent need for kidney interventions targeted at university students.

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Theoretical Framework

The Health Belief Model (HBM) serves as the theoretical basis for this study. HBM is a social psychological interpretation of health-related behaviour change based on six variables, including perceived severity, perceived susceptibility, perceived barriers, perceived benefit, cue to actions, and self-efficacy (LaMorte, 2022; Ben-Enukora, 2024). Perceived susceptibility (individual evaluation of the propensity of contracting a disease), perceived severity (individual judgment about of the seriousness of a health problem or the consequences of not treating it), perceived benefits (personal judgment about the gains or outcome of recommended health action), perceived barriers (personal perception of the cost, harm, pleasantness, time, or convenience) associated with the executing recommended action, cue to action (the stimulus required to initiate the decision-making process -accepting a recommended health action e.g. personal feelings, counsel from others people, illness of close person, newspaper publications about the disease etc.) and self-efficacy (confidence in ones capacity to successfully undertake a behavior) all interact to predict health-related behaviours.

Previous research has supported the six-dimensional model's explanatory power for health beliefs. Hence, scholars have employed the health belief model in health behaviour research. In the context of this study, the health belief model aims to explain the effect of exposure to risk information on knowledge, risk perception, and lifestyle choice for kidney health. Therefore, knowledge of the lifestyle risk factors could improve knowledge of the disease. In addition, perceptions of vulnerability and the severity of the disease could affect students' lifestyle choices. In addition, students are more likely to engage in healthier lifestyle practices if they think that such actions will lessen the risk of kidney diseases. However, the challenges (perceived barriers) associated with maintaining healthy lifestyles, such as low income, etc., may hinder them from taking the desired actions. In addition, outside factors that encourage people to safeguard their health are included in cues to action (personal experience, close contact with patients suffering from kidney disease, access to health experts' information). Therefore, growing knowledge of kidney health can function as a strong cue to action, encouraging students to make healthier lifestyle choices.

METHODOLOGY

The study adopted a quantitative approach, using a cross-sectional survey method and a structured questionnaire. The population comprised undergraduate students in three universities in Ekiti state, namely, Federal University, Oye-Ekiti (federal), Ekiti State University (state), and Afe Babalola University (private). These institutions were purposively selected to explore the students' exposure to risk information about kidney disease and its effects on knowledge, risk perception, and lifestyle choices. The undergraduate students' population for the 2024-2025 session for FUOYE stands at 43,000 (FUOYE Website, 2025), 35,000 for EKSU (EKSU Website, 2025), and 12,000 for ABUAD (ABUAD Website, 2025). Therefore, the total population is 90,000 undergraduate students. The sample size of 383 students was scientifically determined using the Qualtrics online sample size calculator, at a 95% confidence level, 5% margin of error, and 50% population proportion. Proportionate sampling was employed to determine the sample size for each selected institution, as shown in Table 1.

Table 1: Proportionate Sample Size Determination

Institution	Population	Sample size
ABUAD	12, 000	51
EKSU	35,000	149
FUOYE	43,000	183
Total	90,000	383

Source: Author

The questionnaire for this study was self-designed and structured with an online Google form, using multiple-choice and Likert scale questions. A pretest of the instrument was conducted using 35 participants (representing 9.1% of the sample size) to determine the reliability of the instrument in answering the research questions. The result of the split-half statistics showed a coefficient of 0.943, indicating the statistical reliability of the research instrument.

Convenience sampling was employed in the distribution of the instrument through WhatsApp and Telegram platforms for the students to access, respond to, and submit within a short time. This method saved time and cost. However, there was no limit to the number of persons who received and responded to the questionnaire. Therefore, the response notification was constantly monitored and disabled when the required sample size was reached. The Statistical Package for the Social Sciences (SPSS) was used to arrange the data to ensure accuracy for descriptive and inferential analysis.

To ensure compliance with ethical standards, an introductory letter (consent form) that explained the study objectives and invitation for voluntary participation in the study accompanied the online questionnaire. Respondents were advised to read the details of the consent form, which expressed no harm, liability, or penalty for non-participation and withdrawal from the study at any time, and tick the box for consent as a sign of voluntary participation. Data on respondents' demographics showed that the majority are female (51.2%), between 21 and 25 years old (45.9%), from non-medical programmes (60.6%), and had no experience with kidney disease (91.9%).

RESULTS

Exposure to Risk Information about Kidney Disease

All (100%) of the respondents in this study affirmed that they had heard about kidney diseases. This implies a high level of awareness about kidney disease. The extent of exposure to risk information about kidney disease is depicted in Figure 1.

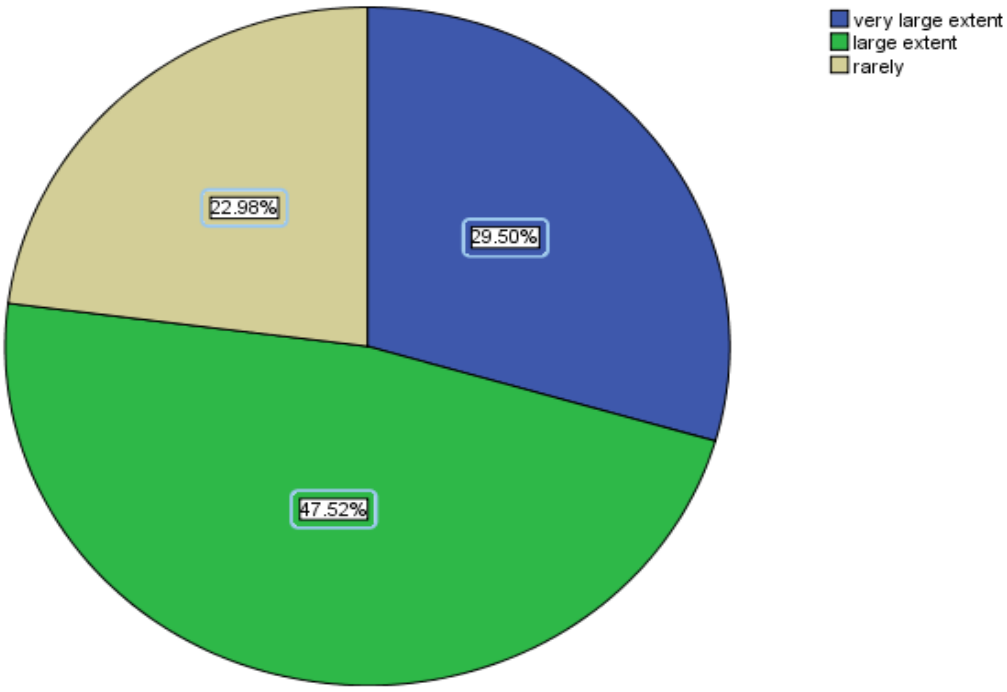

Figure 1: Level of Respondents' Exposure to Risk Information about Kidney Disease

Figure 1 demonstrates that most respondents in this study had substantial exposure to risk information about kidney diseases. Consequently, it was anticipated that the high level of exposure to Kidney health risk information would exert some effects on their knowledge, perception, and lifestyle choices.

Predominant communication channel and source of risk information about Kidney diseases

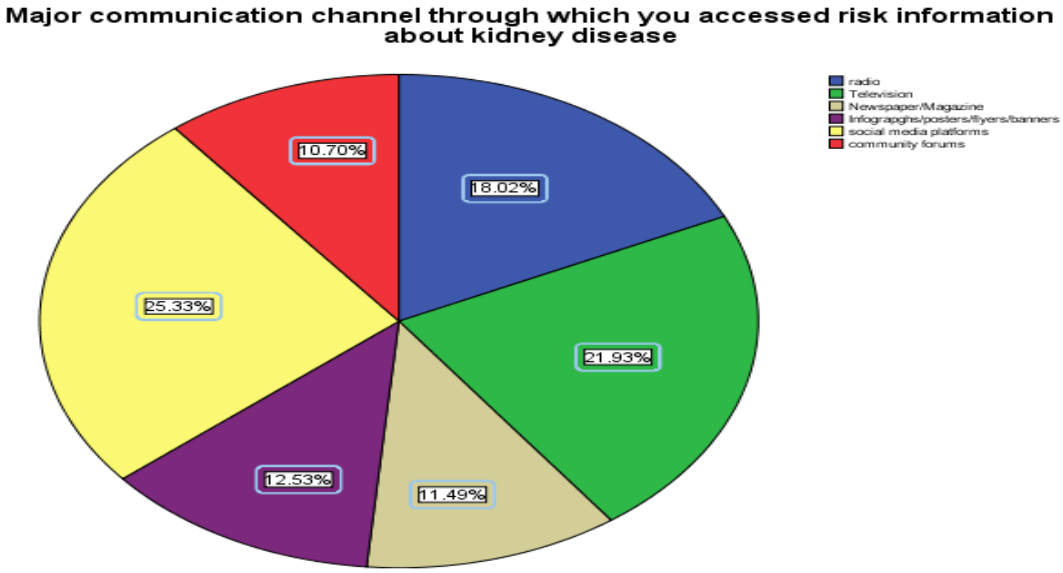

Figure 2: Distribution of the major communication channel through which the Respondents' accessed Risk Information about Kidney Disease

The data illustrated in Figure 2 demonstrate that social media platforms are the major communication channels through which the majority of the sampled respondents accessed risk information about kidney disease. This result confirms the high level of social media consumption among university students.

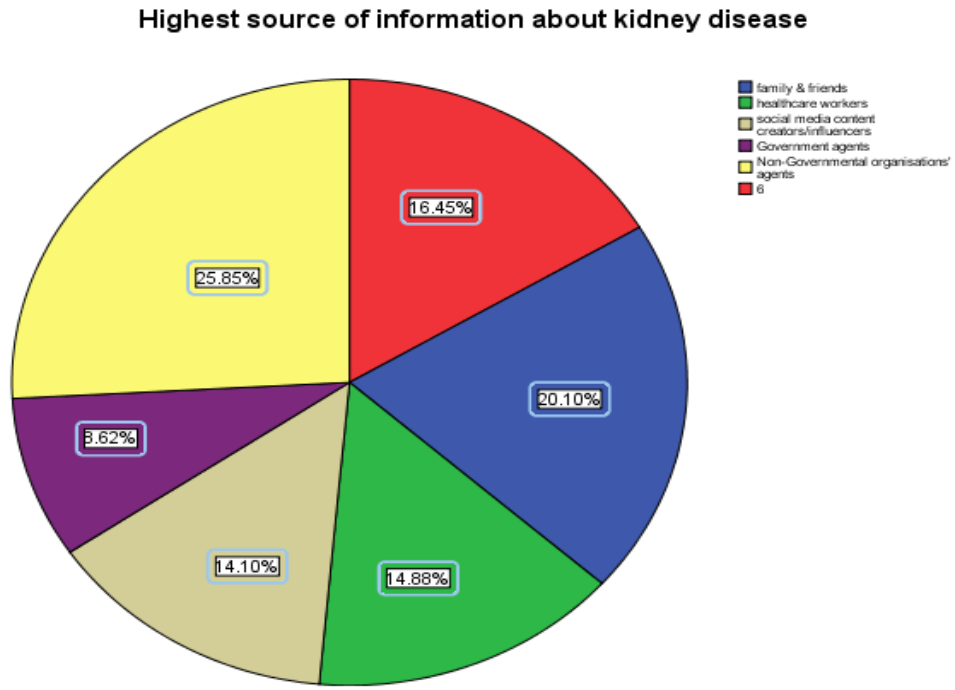

Figure 3: Distribution of the Highest Risk Information Sources about Kidney Disease

Figure 3 illustrates that Non-Government Organisations (NGOs) serve as the highest source of risk information about kidney disease. The result implies that healthcare workers, government agencies, and social media influencers need to provide more risk information about kidney disease.

Knowledge of Kidney Disease

The data in Figures 4-10 suggest inadequate knowledge of kidney disease among the university students.

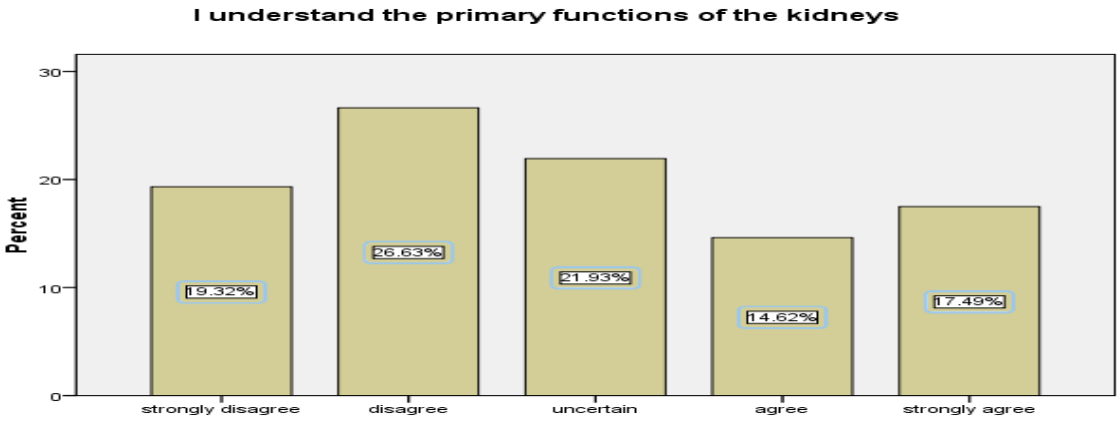

Figure 4: Distribution of respondents' knowledge of the primary functions of the Kidney

The results in Figure 4 depict that the majority of the respondents reported poor knowledge of the primary functions of the kidneys-waste removal, fluid/electrolyte balance, blood pressure regulation, and hormone production. Hence, poor knowledge of kidney functions may result in utter neglect of kidney health.

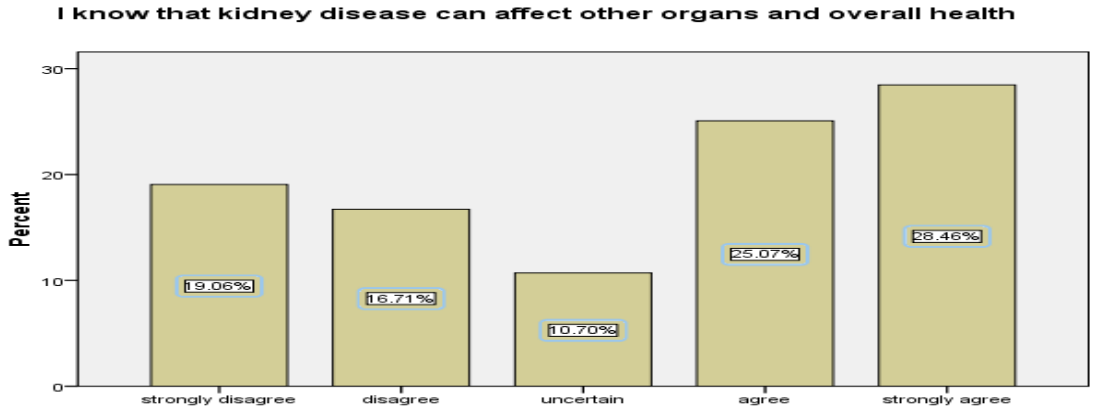

Figure 5: Distribution of respondents' knowledge of the multiplier effect of Kidney disease

The data in Figure 4 illustrate good knowledge that kidney disease is a "multiplier disease" that can significantly damage other vital human organs.

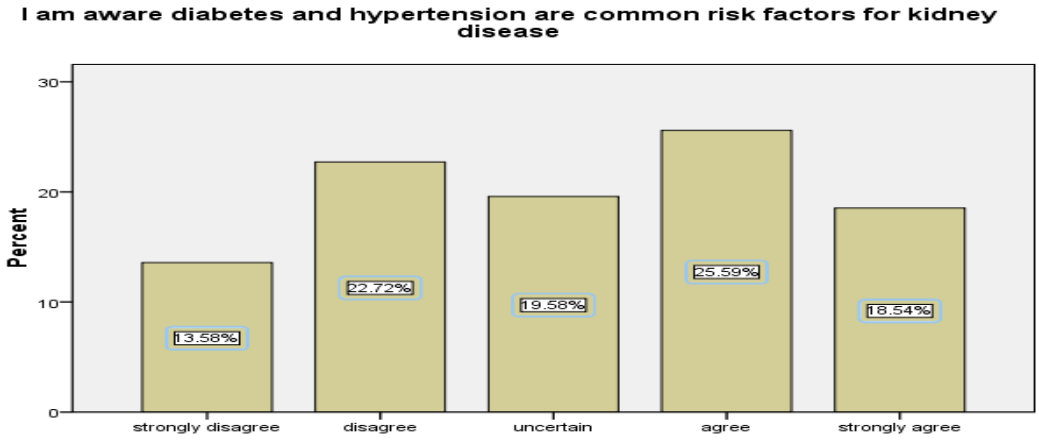

Figure 6: Distribution of respondents' knowledge of risk factors for Kidney disease

Figure 6 demonstrates inadequate knowledge of diabetes and hypertension as risk factors for kidney disease. Thus, inadequate knowledge in this regard could result in negligence to kidney function tests, and lifestyle modifications.

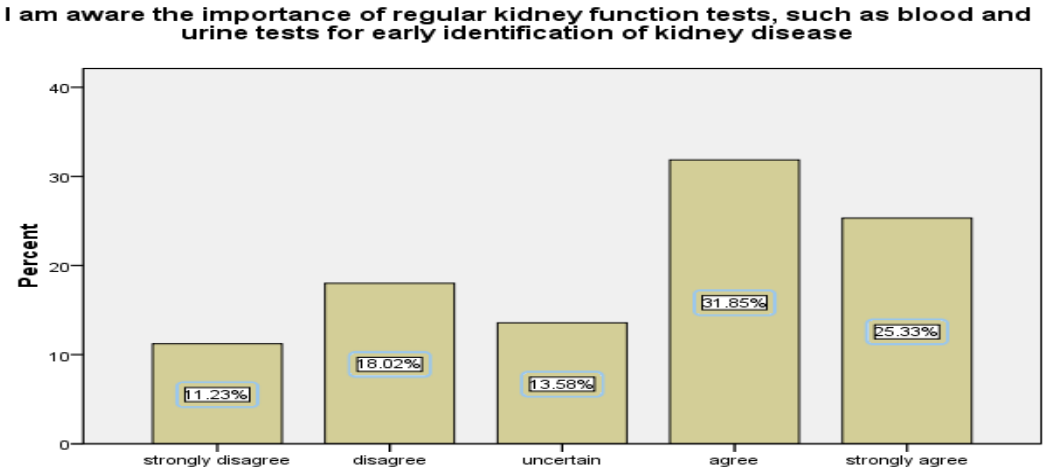

Figure 7: Distribution of respondents' knowledge regarding early detection of Kidney diseases through blood and urine examinations

The results in Figure 7 show that more than half of the sampled respondents are aware that early diagnosis of kidney disease is key to adequate treatment and survival.

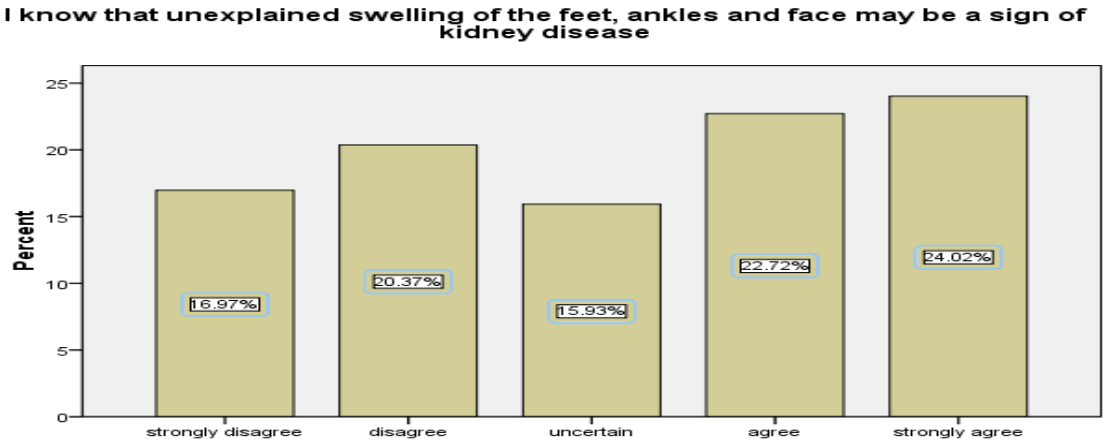

Figure 8: Distribution of respondents' knowledge of signs of kidney disease

Figure 8 depicts inadequate knowledge of swelling (edema) on the face, ankle, feet, and sometimes the abdomen as a sign of chronic kidney disease, resulting from the inability of the kidneys to eliminate excess fluids and proteins from the body. Thus, inadequate knowledge implies poor recognition of the signs that can prompt early medical intervention, thereby limiting the disease progression.

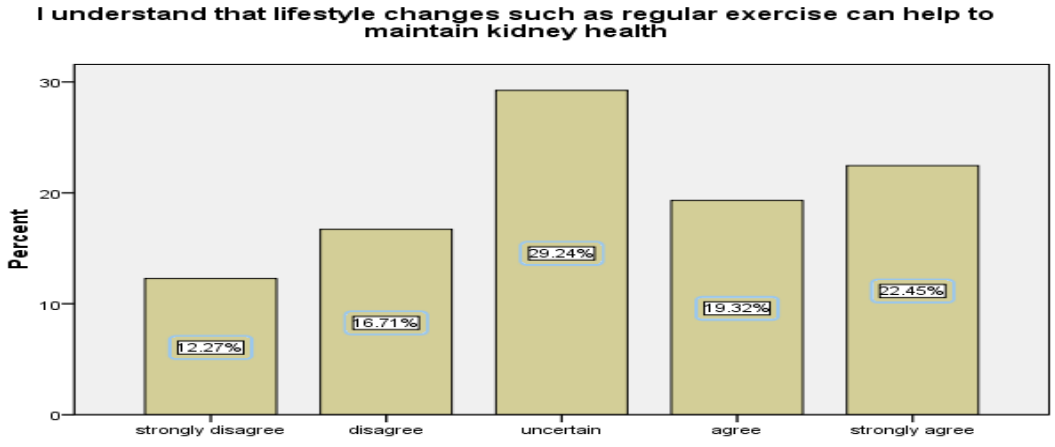

Figure 9: Distribution of respondents' knowledge of maintenance of kidney health

Figure 9 suggests poor knowledge about maintaining kidney health through lifestyle changes, such as regular exercise. Thus, the poor knowledge of the benefits of regular exercise can result in insufficient physical activity that can weaken the kidneys' vitality.

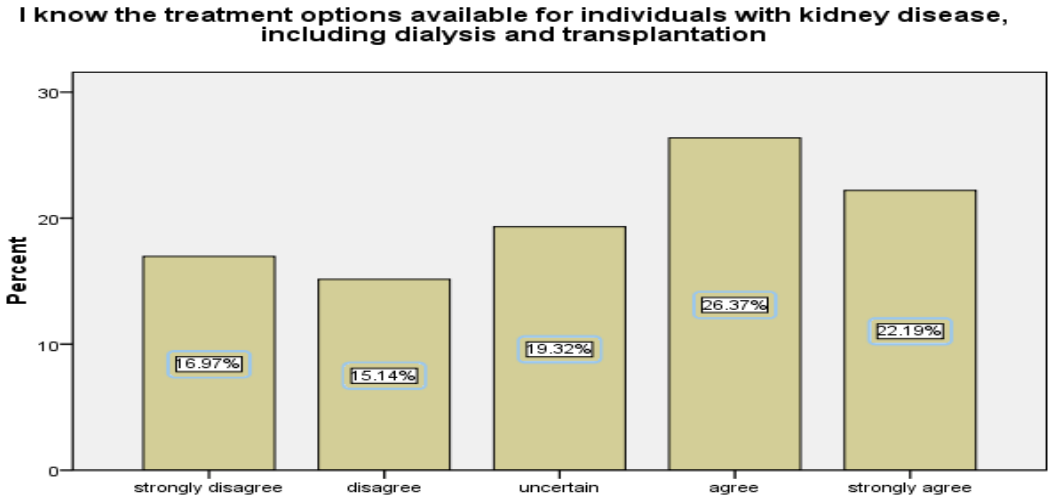

Figure 10: Distribution of respondents' knowledge of treatment options for Kidney disease

Data in Figure 10 show that knowledge of the treatment options for kidney disease is inadequate. Hence, patients may resort to unorthodox medications that could limit the chances of survival.

Risk Perception about Kidney Health

Table 2: Distribution of respondents' risk perception about kidney disease

Responses	**Frequency**	**Percentage %**
I believe that kidney disease is a serious threat		
Strongly Disagree	47	12.3
Disagree	31	8.1
Uncertain	18	4.7
Agree	164	42.8
Strongly agree	123	32.1
Total	383	100.0
Kidney disease can affect anyone		
Strongly Disagree	46	12.0
Disagree	54	14.1
Uncertain	81	21.1
Agree	112	29.2
Strongly agree	90	23.5

Total	383	100.0
My current lifestyle choice could lead to a kidney disease		
Strongly Disagree	62	16.1
Disagree	56	14.6
Uncertain	108	28.3
Agree	73	19.1
Strongly agree	84	21.9
Total	383	100.0
I think the consequences of kidney disease would greatly affect the quality of life for the patient and the family		
Strongly Disagree	37	9.7
Disagree	45	11.7
Uncertain	31	8.1
Agree	144	37.6
Strongly agree	126	32.9
Total	383	100.0
I feel confident in adopting lifestyle changes such as diets, exercise and regular check-ups to reduce the chances of developing kidney disease		
Strongly Disagree	91	23.8
Disagree	85	21.2
Uncertain	51	13.3
Agree	84	21.9
Strongly agree	72	18.8
Total	383	100.0
I fell I have enough information about kidney health to make good decisions about preventing kidney disease		
Strongly Disagree	90	23.5
Disagree	103	26.9
Uncertain	31	8.1

Agree	73	19.1
Strongly agree	86	22.5
Total	383	100.0

Source: Researcher's Field Work, 2025

The data in Table 2 show that most respondents perceive kidney disease as a serious ailment that can affect anyone, with the outcome affecting patients and their families. However, the result shows poor risk perception of the kidney based on their current lifestyle, and poor self-efficacy for preventive lifestyle measures that will reduce the chances of kidney disease, and highlights the need for more kidney health awareness campaigns targeted at university students, as most respondents think they do not have enough information about the disease.

Lifestyle Choices among University Students

Table 3: Distribution of lifestyle choices among university students

Responses	**Frequency**	**Percentage %**
I drink between 2.7 to 3.7 liters of water every day to stay hydrated to reduce the risk of developing kidney disease		
Strongly Disagree	81	21.1
Disagree	125	32.6
Uncertain	73	19.1
Agree	86	22.5
Strongly agree	18	4.7
Total	383	100.0
I engage in regular physical activity or exercise at least three times a week to reduce the risk of developing kidney disease		
Strongly Disagree	64	16.7
Disagree	88	23.0
Uncertain	47	12.3
Agree	100	26.1
Strongly agree	84	21.9
Total	383	100.0
I maintain a balanced diet with low salt and processed foods like bread, cereals etc. to reduce the risk of developing kidney disease		
Strongly Disagree	118	49.1

Disagree	121	31.6
Uncertain	24	6.3
Agree	89	23.2
Strongly agree	31	8.1
Total	383	100.0
I limit my intake of high-protein foods to reduce stress on my kidneys, and reduce the risk of developing kidney disease		
Strongly Disagree	78	20.4
Disagree	92	24.0
Uncertain	101	26.4
Agree	52	13.8
Strongly agree	60	15.7
Total	383	100.0
I monitor my blood pressure and blood sugar levels at least once every month to reduce the risk of developing kidney disease		
Strongly Disagree	115	30.0
Disagree	171	44.6
Uncertain	18	4.7
Agree	54	14.1
Strongly agree	25	6.5
Total	383	100.0
I manage stress through meditation or relaxation to reduce the risk of developing kidney disease		
Strongly Disagree	95	24.8
Disagree	84	21.9
Uncertain	36	9.4
Agree	75	19.6
Strongly agree	93	24.3
Total	383	100.0

I avoid smoking, and drinking alcohol and sugar-sweetened beverages to reduce the risk of developing kidney disease		
Strongly Disagree	91	24.8
Disagree	111	29.0
Uncertain	22	5.7
Agree	87	22.7
Strongly agree	72	18.8
Total	383	100.0

Source: Researcher's Field Work, 2025

The data on lifestyle choices, as illustrated in Table 3, suggest unhealthy lifestyle choices that can increase the risk of kidney disease among the sampled students.

Test of hypotheses

Decisions on the effect of the level of exposure to risk information about kidney disease on knowledge of kidney disease, risk perception, and lifestyle choices among university students were reached at $P<0.05$.

Table 4: Chi-square statistics showing the effect of the level of exposure to risk information about kidney disease on knowledge

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.524E2[a]	54	.000
Likelihood Ratio	791.195	54	.000
Linear-by-Linear Association	330.700	1	.000
N of Valid Cases	383		

The p-value (.000) in Table 4 is less than 0.05. Therefore, the null hypothesis was rejected. Hence, the level of exposure to risk information has a significant effect on knowledge of kidney disease.

Table 5: Chi-square statistics showing the effect of the level of exposure to risk information about kidney disease on risk perception

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.595E2[a]	48	.000
Likelihood Ratio	799.990	48	.000
Linear-by-Linear Association	326.811	1	.000
N of Valid Cases	383		

The p-value (.000) in Table 5 is less than 0.05. This suggests that the level of exposure to risk information has a significant effect on the risk perception of kidney disease. Thus, the null hypothesis was rejected.

Table 6: Chi-square statistics showing the effect of the level of exposure to risk information about kidney disease on lifestyle choices

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.418E2[a]	56	.000
Likelihood Ratio	780.167	56	.000
Linear-by-Linear Association	329.733	1	.000
N of Valid Cases	383		

The p-value (.000) in Table 6 is less than 0.05. This implies that the level of exposure to risk information about kidney disease has a significant effect on lifestyle choices among university students. Therefore, the null hypothesis was rejected.

DISCUSSION OF FINDINGS

High Level of Exposure to Risk Information about Kidney Disease

This study examined the level of exposure to risk information about kidney disease among university students and its effects on knowledge, risk perception, and lifestyle choices. The findings showed a high level of awareness and exposure to risk information about kidney diseases among the sampled students, confirming a past report about a high level of awareness of kidney health among university students (Sowtali et al., 2019). Social media is the predominant channel through which students' access risk information about kidney disease, followed by television and radio. In addition, non-government organisations are the highest source of information, followed by family and friends, and private individuals/institutions, whereas health workers, social media influencers, and government agents scored low. This result corroborates Danguilan et al.'s (2013) account that family, friends, and relatives are vital sources of kidney health awareness. Thus, healthcare workers in the university health centres can do better in providing kidney health awareness campaigns on campus.

Poor Knowledge of Kidney Disease

The results showed poor knowledge of primary functions of the kidneys, the risk factors for kidney disease, signs of the disease, prevention of kidney disease through lifestyle changes, as well as the available treatment options, confirming previous findings about poor knowledge of kidney disease among university students (Okwuonu et al., 2015; Ngendahayo et al., 2019; Wolide et al., 2019; Loo et al., 2022; Imran et al., 2025). This implies that many students may be at risk of developing kidney disease due to poor knowledge of the risk factors, signs of the disease, and preventive measures. Even though the relationship between students' academic discipline and knowledge level was not measured in this study, it is worth noting that 60.6% of the study population are non-medical programmes. This could have an impact on knowledge as previous studies report that students in health-related programmes generally exhibit higher knowledge scores (Sowtali et al., 2019; Wolide et al., 2019).

Poor Risk Perception of Kidney Disease

In addition, the majority perceived kidney disease as a serious ailment that can affect anyone, and the outcome affects patients and their families, but exhibited poor perception of self-efficacy for preventive lifestyle measures that will reduce the chances of kidney disease. The finding substantiates accounts about poor risk perception of kidney disease among university students, even in high-risk populations (Morrow et al., 2024). Poor risk perception of kidney disease could result in negligence of kidney health, increased long-term health risks, and delayed diagnosis.

Poor Lifestyle Choices for Prevention of Kidney Diseases

The study found poor lifestyle choices among university students despite a high level of awareness and perceived severity of kidney disease. This finding corroborates earlier reports that lifestyle risk factors such as physical inactivity, poor diet, and low engagement in preventive health behaviors are common among university students (Ngendahayo et al., 2019; Cicekli & Eskin, 2025), and inconsistency in recommended lifestyles even among those with good knowledge (Akokuwebe & Idemudia, 2022). Poor knowledge expressed in this study could contribute to poor risk perception and poor lifestyle choices, even though increased knowledge does not always lead to improved risk perception or healthier lifestyle choices.

Another remarkable finding of this study is the significant effects of the level of exposure to risk information about kidney disease on knowledge, risk perception, and lifestyle choices among the university students at $p<0.05$. This finding highlights the need for deliberate and persistent interventions to improve knowledge, risk perception, and lifestyle choices among university students.

CONCLUSION AND RECOMMENDATIONS

This study examined the correlation between access to risk information about kidney disease and knowledge, risk perception, and lifestyle choices among university students. The results established that university undergraduate students in Ekiti state have a high level of awareness of kidney disease and substantial exposure to risk information about kidney disease, through social media platforms, and non-governmental organizations as a source of information. However, the students expressed poor knowledge of kidney disease, poor risk perception, and poor lifestyle choices, indicating the need for university-based kidney interventions. These results have severe implications. First, students with limited knowledge of kidney disease are less likely to recognize early symptoms, adopt preventive behaviors, or seek timely care, reducing the effectiveness of interventions aimed at early detection and prevention. Secondly, poor risk perception leads to underestimation of personal vulnerability, making students less likely to engage in healthy behaviours or participate in screening programmes.

Based on the findings, the study recommends that university health centres, government agencies, non-government organisations, university management, and students' unions should conduct deliberate and persistent university-based kidney interventions, as frequent and sustained health promotion is associated with better retention of information and behaviour change. The university-based kidney interventions could address the gaps in knowledge, risk perception, and lifestyle through interactive communication strategies such as practical workshops and group discussions. Effective interventions should focus not just on designing and implementing communication interventions to promote awareness and knowledge of kidney issues, but also on strategies to increase risk perception and support behavior change among students, as well as subsidized or free kidney screenings to ensure early detection of kidney problems. Integrating these interventions within the university health services could increase participation and impact.

Limitations and suggestions for further studies

Participants in this study were selected based on convenience sampling rather than random selection. Therefore, the results of this study may not be generalized to the entire university student population due to the potential biases in the selection process. Furthermore, self-reported data from survey respondents are prone to biases as data may be marred by poor recall, errors, careless responses, or socially acceptable responses.

Future studies could engage qualitative methods for a more nuanced understanding of university students' knowledge and beliefs about kidney diseases, and barriers to the adoption of healthier lifestyles that can promote better kidney health. In addition, there is a lack of kidney intervention research specifically focused on university students in Nigeria. Studies in this direction could highlight practical and policy perspectives on university-based kidney interventions.

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