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Original Article

Knowledge, attitude and practice on personal hygiene among students of Maruzi Secondary School, Apac District. A cross-sectional study.

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Abstract

Background:
Personal hygiene is crucial for preventing disease and promoting health among school-going adolescents. However, hygiene-related illnesses remain prevalent in many Ugandan schools. This study assessed the Knowledge, Attitude, and Practice (KAP) of personal hygiene among students at Maruzi Seed Secondary School in Apac district.

Methodology:
A descriptive cross-sectional study was conducted among 136 Senior One students, selected via simple random sampling. Data were collected using a structured, self-administered questionnaire covering socio-demographics, knowledge, attitudes, and practices. Data were analyzed using Microsoft Excel and presented using descriptive statistics.

Findings:
The study revealed that while a majority of students demonstrated good foundational knowledge of hygiene, critical gaps existed in specific areas such as menstrual health and worm infestation. Attitudes were mixed; students felt personally responsible for their hygiene, yet this was undermined by significant gender-based misconceptions and the belief that a lack of facilities justified poor practices. A clear theory-practice gap was observed: knowledge often failed to translate into consistent action, particularly in the use of soap for handwashing and twice-daily toothbrushing. Inadequate access to hygiene materials was a key barrier.

Conclusion:
Students possess basic hygiene knowledge, but this is insufficient to drive optimal practices due to attitudinal barriers and resource constraints. The study concludes that improving hygiene requires a coordinated approach that addresses knowledge gaps, transforms harmful attitudes, and improves access to essential hygiene resources.

Recommendations:
Targeted health education, reliable provision of soap and sanitary products, and school-wide campaigns to address misconceptions are recommended to bridge the identified gaps. School nurses should move beyond assessing illness to routinely conducting KAP assessments on hygiene to identify local gaps.

Keywords: *Knowledge, Attitude, Practice, Personal hygiene, Maruzi Seed Secondary School.*
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Background
Personal hygiene is the practice of maintaining cleanliness and promoting and preserving physical health. The term "hygiene" comes from the Greek word "Hygeia," which means goddess of health, cleanliness, and sanitation. Maintaining a high level of personal hygiene can help increase confidence and self-esteem, leading to a healthy lifestyle (Al-Rifaai et al., 2018). While the failure to keep up a standard of hygiene may have many implications. Not only is there a high risk of getting an illness or infection, but there are also many social and psychological issues that are possible due to poor hygiene (Al-Rifaai et al., 2018).

Globally, personal hygiene, particularly in relation to water, sanitation, and hygiene (WASH), remains a major public health concern. Improved sanitation and hygienic practices are crucial for reducing the risk of communicable disease transmission and enhancing overall public health, especially among students (Thakadu et al., 2018). School children are particularly vulnerable to parasitic infections due to behaviors such as playing in or handling contaminated soil, eating with unwashed hands, practicing poor toilet hygiene, and consuming contaminated food and water (Ahmed et al., 2016).

In many African countries where access to modern healthcare technology and resources is limited, promoting education on good personal hygiene plays a critical role in disease prevention (Seun et al., 2020). Poor sanitation, inadequate water supply, and lack of awareness often contribute to the rapid spread of infectious diseases. By

equipping communities, especially schoolchildren, with knowledge and skills related to personal hygiene, the incidence of diseases such as cholera, typhoid, and parasitic infections can be significantly reduced (Seun et al., 2020).

In East Africa, promoting hand washing behavior in institutions of higher learning has been shown to significantly reduce child mortality rates. Proper hand hygiene can cut deaths from diarrhea, the second leading cause of child deaths, by nearly half, and from pneumonia, the leading cause of child deaths, by about one-quarter. These reductions demonstrate the powerful impact of hand washing on child health. Such evidence underscores the need to integrate hygiene promotion into educational settings. This simple practice remains a vital and cost-effective public health intervention (Temitayo, 2016)

In Ugandan universities and training institutions, there remains a significant lack of knowledge regarding the correct indications for hand disinfection. Hand washing is often neglected, yet it is one of the leading preventive measures against diseases, especially those of oral origin, within communities. In educational settings, hand hygiene goes beyond just promoting health; it represents freedom from harmful germs, control of communicable diseases, and the fostering of a healthy learning environment. This study assessed the Knowledge, Attitude, and Practice (KAP) of personal hygiene among students at Maruzi Seed Secondary School in Apac district.

Methodology

Study design and rationale

A descriptive cross-sectional study design was utilized. This design was appropriate as it enabled the researcher to collect data on the knowledge, attitudes, and practices regarding personal hygiene at a single point in time, providing a snapshot of the situation among the students.

Study setting and rationale

The study was carried out among students at Maruzi Seed Secondary School, Apac District. Apac district is bordered by Oyam district to the north east, Kole district to the north, Lira district to the north east, Dokolo district to the east, Amolatar district to the south, Nakasongola district to the south west, and Apac district to the west. Apac hospital is located approximately 62 kilometers (39 miles) by road, southwest of Lira and about 230 kilometers (140 miles) by road, north of Kampala, and its coordinates are 01o 58’42.0” N, 32o32’01.0” E (Latitude: 1.978325; Longitude: 32.533618).

The administration comprises the Head Teacher as the overall in charge, followed by Deputy Head Teachers and heads of departments. This setting was selected because it is the specific institution where an internal assessment had already identified a high prevalence of hygiene-related health issues (e.g., skin rashes, respiratory infections).

Study population

The study population consisted of students enrolled at Maruzi Seed Secondary School. The target population was specifically the Senior One students of the school.

Sample size determination

In this study, the sample size was calculated using a formula that was originally developed by

Yamane (1967) $n=\frac{N}{1+N(e)^2}$

$n=\frac{207}{1+207(0.05)^2}$

$n=\frac{207}{1.52}=136$

$n=136$

Where;-

n- the sample size

N- Number of senior one students at Maruzi seed

e- the acceptable sampling error

(95% confidence level and p =0.05 are assumed)

Therefore, the study population will be **136** participants, which is above the minimum number required by the Uganda Health Professions Assessment Board (UHPAB).

Sampling procedure

A simple random sampling method was employed to ensure each Senior One student had an equal chance of being selected. Slips of paper marked "YES" and "NO" were placed in a sealed container. Students who drew a "YES" slip were invited to participate until the daily target and the total sample size of 136 were achieved.

Inclusion criteria

The study included only Senior One students who were present on the days of data collection and who provided consent.

Exclusion criteria

Students not in Senior One and those in Senior One who did not consent to participate were excluded from the study.

Students in senior two and above, as the study specifically targets the foundational year group

Students who were severely ill or otherwise incapacitated and could not complete the questionnaire.

Dependent variable

Personal hygiene

Independent variables

Knowledge, Attitude, and Practices

Research instruments

Data was collected using a structured questionnaire and consisted of closed-ended questions about the knowledge,

attitude, and practices regarding personal hygiene among students of Maruzi Seed Secondary School in Apac District. The questionnaire has four parts, section A-socio demographic, Section B- knowledge, Section C- attitude D-practices.

Data collection procedure

Following the approval of the research proposal, an introduction letter was obtained from the Principal of Florence Nightingale School of Nursing and Midwifery. This letter was presented to the District Education Officer (DEO) of Apac and the Head Teacher of Maruzi Seed Secondary School to seek permission to conduct the study. Upon permission being granted, the researcher was introduced to the students. The purpose of the study was explained, confidentiality was assured, and written consent was obtained before the questionnaires were administered. Participants were identified using numbers rather than names to maintain anonymity.

Data management and analysis

Data management

Completed questionnaires were checked daily for accuracy, consistency, and completeness. The physical questionnaires were stored in a locked cabinet accessible only to the researcher and will be destroyed after three years. Electronic data was stored on a password-protected computer.

Data analysis

The collected data were cleaned, coded, and analyzed using Microsoft Excel. The results were presented using tables, graphs, and charts.

Quality assurance

To ensure validity, the questionnaire was developed based on a review of relevant literature and was reviewed by the research supervisor. A pilot study was conducted with five students (not included in the main sample) to test the clarity, reliability, and appropriateness of the instrument. Necessary modifications were made to the questionnaire based on the feedback from the pilot study.

Ethical considerations

Ethical approval was obtained from the relevant board of Florence Nightingale School of Nursing and Midwifery. Written informed consent was sought from all participants after a detailed explanation of the study. Participants were informed of their right to withdraw from the study at any time without penalty. Anonymity and confidentiality were maintained throughout the research process.

Results

Socio-Demographic Information of the Respondents

Table 1: Showing socio-demographic characteristics of the responsible

Variable	Frequency(N)	Percentage (%)
Age		
12-14	2	1.5
15-17	85	62.5
18 years and above	49	36
Sex		
Male	59	43.4
Female	77	56.6
Class Level		
Senior one	136	100
Others	0	0
Religion		
Christian	129	95
Muslim	7	5
Others	0	0
Residence		
Urban	49	36
Rural	87	64

Legend: Frequency (%), Percentage (%)

The majority of respondents (62.5%) were aged 15–17 years, while only 1.5% were between 12–14 years. Females made up 56.6% of participants compared to 43.4% males. Regarding the class of respondents, all respondents (100%) were Senior One students.

Regarding the religion of respondents, most respondents (95%) were Christians and only (5%) were Muslims. Concerning areas of residence, 64% lived in rural areas while only 36% lived in urban areas.

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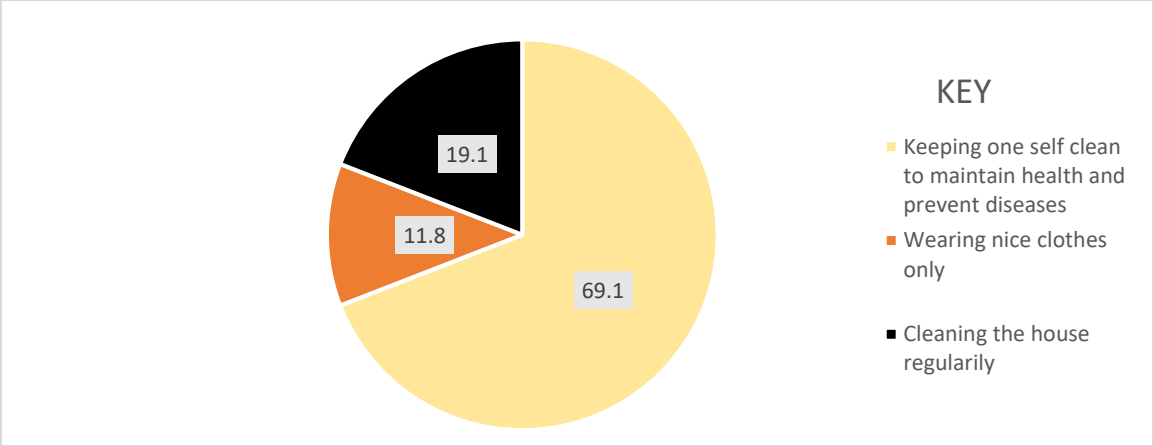
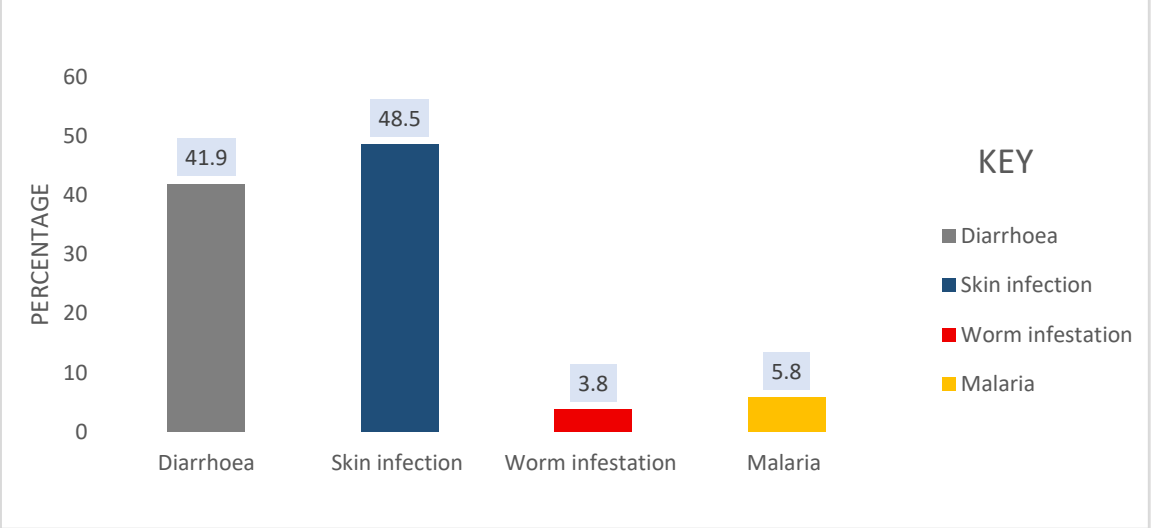
Knowledge of respondents on personal hygiene

Figure 1 shows the best description of personal hygiene.



Most respondents (69.1%) correctly defined personal hygiene, and only (11.8%) defined it as wearing nice clothes.

Figure 2: Showing diseases resulting from poor personal hygiene



Respondents most frequently mentioned skin infections (48.5%) as the common disease resulting from poor hygiene, while worm infestation was the least identified at (3.8%).

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Table 2: Showing the knowledge of respondents on Personal hygiene.

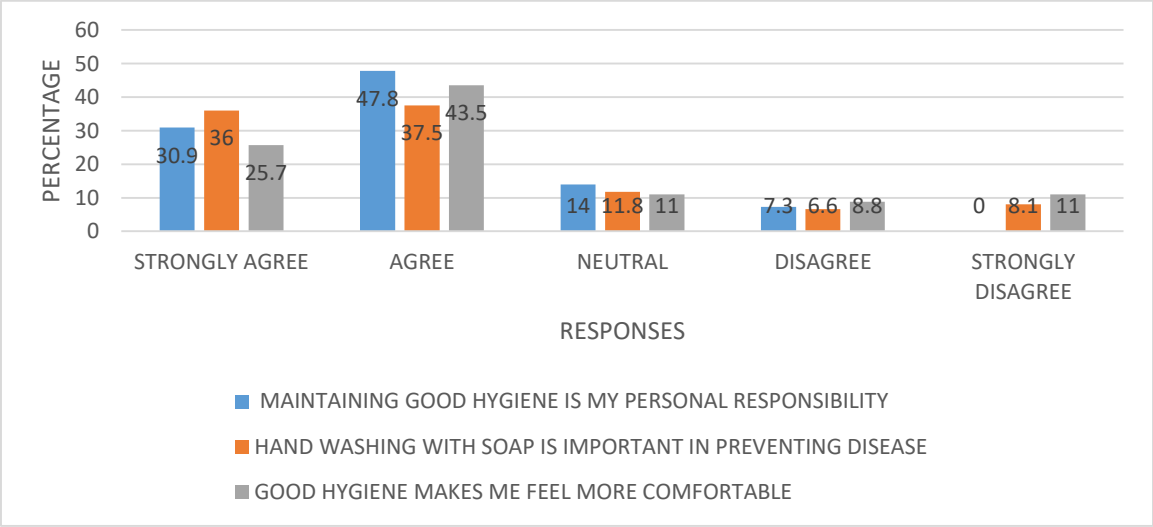
Variable	Frequency	Percentage
How often should you wash your hands with soap and water?		
Before eating and after using the toilet.	115	84.5
Only when hands look dirty	16	11.8
Once a day	5	3.7
Which of the following is correct about oral hygiene		
Brush teeth twice daily with fluoride toothpaste	109	80.1
Brush once a week	10	7.4
Using only water to rinse the mouth.	17	12.5

Legend: frequency (N), Percentage (%).

Regarding how often respondents washed their hands with soap and water, the majority (84.5%) reported washing their hands before eating and after using the toilet, while only (3.7%) washed their hands once a day. Concerning oral hygiene, (80.1%) reported brushing their teeth twice daily with fluoride toothpaste, and only (7.4%) brushed once a week.

Attitudes of respondents Towards Personal Hygiene

Figure 3: Showing the Attitude of respondents towards personal hygiene



Regarding personal hygiene responsibility, (47.8%) of respondents agreed, while (7.3%) disagreed. On the importance of handwashing with soap in preventing disease, (37.5%) agreed and (36%) strongly agreed, with the minority (8.1%) strongly disagreeing. Regarding the effect of hygiene on self-confidence, (43.5%) agreed, and only (11%) strongly disagreed.

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Personal Hygiene Practices among Respondents

Table 3: Showing Personal Hygiene Practices among Respondents

Variable	Frequency(N)	Percentage (%)
How often do you bathe		
Twice a day	68	50
Once a day	40	29.4
2-3 times a week	28	20.6
Once a week	0	0
How often do you wash your hands before eating		
Always	102	75
Sometimes	22	16.2
Rarely	12	8.8
Do you use soap when washing your hands?		
Always	94	69.1
Sometimes	37	27.2
Never	5	3.7
How often do you brush your teeth?		
Twice a day	47	34.6
Once a day	79	58
Occasionally	10	7.4
How often do you change sanitary pads during menstruation (for girls only)		
Every 4-6 hours	17	20
Twice a day	40	54
Once a day or less	20	26
Do you have access to clean water at school for personal hygiene?		
Yes	110	81
No	26	19

Regarding bathing frequency, (50%) of respondents reported bathing twice a day, while none bathed only once a week. Concerning handwashing before eating, (75%) always washed their hands, and only (8.8%) rarely did. Concerning the use of soap when washing hands, (69.1%) always used soap, and only (3.7%) never used it.

Regarding oral hygiene, (58%) of respondents brushed their teeth once a day, and only (7.4%) brushed occasionally. On menstrual hygiene management (for girls only), (54%) changed their sanitary pads twice a day, and the least (20%) changed them every 4–6 hours. Lastly, most respondents (81%) reported having access to clean water at school for personal hygiene, while (19%) did not.

Discussion

Socio-Demographic characteristics of respondents

The study engaged Senior One students from Maruzi Seed Secondary School, whose demographic profile provides a crucial context for interpreting the Knowledge, Attitude, and Practice (KAP) findings. The majority of respondents fell within the 15-17 years age bracket, a period of adolescence where personal habits are solidified, and peer influence is pronounced. This age group is particularly receptive to health education but is also vulnerable to adopting risky behaviours, making them a critical target for interventions aimed at establishing lifelong healthy practices.

The gender distribution of the sample, with a slightly higher proportion of female students, is reflective of the general

enrolment trends in Ugandan secondary schools. A notable finding was that a large majority of the students reported residing in rural areas. This rural predominance is a critical factor, as it aligns with the findings of Manyara & Okube (2023) in Kenya, who reported a clear urban-rural disparity in hygiene knowledge and access to facilities. Students from rural areas often have less exposure to structured health information and may face greater challenges in accessing resources like reliable, clean water and soap, which can directly impact their hygiene practices (UNICEF, 2018).

Knowledge of Personal Hygiene among Students

The study found that a majority of students at Maruzi Seed Secondary School could correctly define personal hygiene and identify key handwashing times, indicating a solid foundational knowledge. This finding aligns with the study by Temitayo (2016b) in Nigeria, which also reported that a significant portion of secondary school students demonstrated average to good knowledge of hygiene topics. However, the study also revealed critical and specific gaps. Knowledge regarding menstrual hygiene was a particular concern, with a substantial number of students believing its importance was solely for comfort or that it held no health significance. This finding directly correlates with the observations of Musa, Kamal, and Bello (2021), who noted that curriculum content in many regions, including Nigeria, lacks sufficient depth on menstrual hygiene, leaving students with misconceptions. Furthermore, the very low identification of worm infestation as a consequence of poor hygiene mirrors the vulnerabilities highlighted by Ahmed et al. (2016) in Eritrea, where school children's poor knowledge of parasitic infections was a concern. This suggests that while general knowledge is fair, understanding of specific health risks remains inadequate in Apac, similar to other resource-limited settings.

Attitudes Towards Personal Hygiene

The attitudes of students presented a complex interplay of personal responsibility and external blame. A strong sense of personal responsibility for maintaining hygiene was reported by most students, a positive finding that echoes the study by Mangal et al. (2019) in Southern Rajasthan, where students also largely agreed that hygiene was essential.

In contrast, a deeply entrenched misconception was observed, with an overwhelming majority of students agreeing that menstrual hygiene is exclusively a female concern. This gender-based stigma is a significant barrier and finds strong resonance with the work of Okello and Kalungi (2022) in Uganda, who documented similar attitudes where male students associated certain hygiene practices with femininity. This indicates that this harmful misconception is not isolated to Maruzi but is a broader issue within the Ugandan context. Additionally, most students strongly believed that a lack of facilities justified poor hygiene practices. This rationalization of behavior based on environmental constraints is a powerful attitudinal barrier and is strongly supported by the findings of Nuwagaba et al. (2021) in Uganda, who identified inadequate facilities as a primary demotivator for handwashing, suggesting this is a common challenge across Ugandan educational institutions.

Personal Hygiene Practices among Students

A central finding of this study is the pronounced disconnect between knowledge and practice, a theme consistently reported in the literature. For instance, while most students knew the critical times for handwashing, a significant portion did not report always using soap. This theory-practice gap is almost identical to the findings of Sultana et al. (2016) in Bangladesh, where high knowledge of hand hygiene did not translate into regular practice.

This gap was further evident in oral hygiene, where the knowledge of twice-daily brushing was not reflected in the actual practices of a majority of students, who brushed only once a day. The situation regarding menstrual hygiene was particularly concerning, as a considerable number of female students reported changing sanitary pads only once a day or less, a risky practice that aligns with the challenges documented by Manyara and Okube (2023) in Kenya, where similar resource constraints led to unhygienic management. While access to clean water at the school was good for most students, this strength was negated by the critical lack of other essentials, such as consistent soap availability. This finding corroborates with Kumwenda (2019) in Ghana, who emphasized that the presence of water alone is insufficient without other complementary resources like soap to enable good hygiene practices.

Conclusion

Knowledge of personal hygiene among students at Maruzi Seed Secondary School is generally fair but incomplete, with critical gaps in specific areas like menstrual health and parasitic infections, rendering them vulnerable to associated health risks.

Attitudes are contradictory; while students feel a sense of responsibility, this is significantly undermined by pervasive gender-based misconceptions and a rationalization of poor practices due to a lack of facilities, mirroring attitudinal barriers identified in other Ugandan and regional studies.

Practices are sub-optimal and demonstrate a clear disconnect from knowledge levels, primarily hindered by environmental constraints such as the lack of consistent access to soap and affordable sanitary products, a situation previously noted in studies from Bangladesh, Kenya, and Ghana.

Recommendation

The School Administration should implement targeted, interactive education sessions focusing on the identified gaps, particularly comprehensive menstrual hygiene education that includes boys, to dismantle misconceptions,

drawing on the successful elements of school health programs.

Establish a reliable and sustained supply of soap at all hand washing stations and explore partnerships to provide affordable sanitary pads.

Health Practitioners and Stakeholders should design and support "demonstration and practice" sessions to bridge the knowledge-practice gap, moving beyond information dissemination to build practical skills.

Launch school-wide campaigns, involving peer educators, to challenge the misconception that menstrual hygiene is only a girls' issue, leveraging the known influence of peers.

Policymakers should standardize, implement, and make a practical and comprehensive school health education curriculum that adequately covers all aspects of personal hygiene, including menstrual hygiene management, addressing the curriculum gaps.

Implications for Nursing Practice

School nurses should move beyond assessing illness to routinely conducting KAP assessments on hygiene to identify local gaps. They must act as advocates, presenting evidence to school management on the specific resource gaps that are hindering health promotion efforts.

Nurses are uniquely positioned to deliver culturally sensitive and age-appropriate education on topics like menstrual hygiene, creating a safe environment for students to learn and ask questions, thereby directly addressing the attitudinal and knowledge gaps identified.

The findings underscore the need for nurses to promote a systematic, evidence-based approach to school health, moving to structured programs that include regular monitoring and evaluation of hygiene practices.

Acknowledgement

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Lastly, I convey my sincere appreciation to all the respondents who voluntarily participated and provided valuable information. Without their contribution, this research would not have been successfully completed.

List of abbreviations

AIDS Acquired Immune Deficiency Syndrome
DEO District Education Officer
HIV Human Immunodeficiency Virus
KAP Knowledge, Attitude, and Practices
SPSS Statistical Package for the Social Sciences
UNICEF United Nations International Children's Emergency Fund
WASH Water, Sanitation, and Hygiene
WHO World Health Organization

Source of funding

The study was not funded.

Conflict of interest

The author declares that there was no conflict of interest.

Author contributions

JE- Developed and investigated the study.
MO- Supervised the study.
RA- Supervised the study.
FMO- Supervised the study.

Data availability

Data is available upon request.

Informed consent

Written informed consent was obtained from all participants prior to their inclusion in the study. Participants were informed about the purpose of the study, procedures involved, potential risks and benefits, and their right to withdraw at any time without penalty.

Author biography

Jacob Esanu is a student at Florence Nightingale School of Nursing and Midwifery, pursuing a diploma in nursing.

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