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Health facility factors influencing utilization of premarital sickle cell trait screening services among the youth attending Entebbe regional referral hospital, Wakiso district. A cross-sectional study.

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Abstract

Background

The study aims to assess the health facility factors influencing uptake of premarital sickle cell trait screening services.

Methodology

A descriptive cross-sectional study using quantitative methods was conducted among 40 youths aged 18 years and above. Convenience sampling was employed. Data were collected using structured and semi-structured questionnaires, checked for completeness, coded, and analyzed using Microsoft Excel. Findings were presented using frequencies, percentages, tables, and figures.

Results

33 (82.5%) of the respondents were unemployed, and 7 (17.5%) were employed. The majority, 36 (90%), had never received counselling about premarital sickle cell trait screening, and 4 (10%) had received counselling. 23 (57.5%) lived 3–5 km away from the facility, while the least 5 (12.5%) lived below 2 km. Concerning the availability of equipment, 37 (92.5%) did not know about the equipment, while at least 1 (2.5%) reported that it was not available. During other care, the majority, 35 (87.5%), were not educated about sickle cell trait screening, whereas at least 5 (12.5%) were educated. The majority (72.5%) of the respondents mentioned a few facilities offering sickle cell trait screening service as a factor influencing their uptake, while (12.5%) cited lack of reagents.

Conclusion

Health facility factors like long distances, few screening centers, and limited outreach influenced the uptake of premarital sickle cell trait screening.

Recommendation

Health Facilities should increase accessibility by establishing more centers that offer premarital sickle cell trait screening services, including outreach services for remote areas.

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Premarital Screening, Sickle Cell Trait, Health Facility Accessibility, Screening Uptake

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Background

In Tanzania, a study on determinants of perception and willingness to uptake premarital screening test found that those who were given information from health workers were more likely to have screened for SCT. Receiving information from healthcare professionals was significantly associated with good perception and intention to screen (Ndaigeze et al., 2025). In Nigeria, studies on knowledge and attitude regarding premarital screening for sickle

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cell reported that limited local availability of premarital/genotype testing facilities reduced uptake because many participants could not access testing where they lived (Isah et al., 2016). In Uganda, it has been found that geographic distance between health facilities and respondents' homes and inconvenient service hours were associated with lower use of screening services (Houwing et al., 2019). A study on the socio-economic burden of sickle cell disease on families attending sickle cell trait in Nigeria found that out-of-pocket costs and the wider financial burden of sickle cell disease are barriers that discourage premarital screening uptake (Beli et al., 2024). Poor integration of genotype screening into routine primary and premarital health services limited program reach and reduced uptake (Orelaru et al., 2019). Limited supply of laboratory reagents, few facilities offering screening services, and inadequate test kits at peripheral facilities are system constraint that interrupts screening programs (Abioye et al., 2019). In Nigeria, studies revealed that the lack of trained staff to perform testing and provide genetic counselling limited service delivery and discouraged clients (Adeyemo et al., 2017). The study aims to assess the health facility factors influencing uptake of premarital sickle cell trait screening services

METHODOLOGY

Study design and rationale

This study utilised a descriptive cross-sectional design because the research was a snapshot (cross-sectional) and involved data collected only once in a given time allocated for research, and utilized a Quantitative study design in data analysis because the study involved the application of mathematical and statistical methods to numerical data to understand the meaning and patterns of the data.

Study setting and rationale

The study was conducted in Entebbe Regional Referral Hospital in Wakiso District, Central Region of Uganda, about 37 km southwest of Mulago National Referral Hospital in Kampala, by road. It had a 200-bed facility with both public (free) and private (fee-for-service) wings, offering a wide range of medical services, including pediatrics, radiology, maternity, immunization, general surgery, internal medicine, orthopedics, laboratory services, and reproductive services. The study area was chosen because the researcher was familiar with the local language, the clients were easily obtained, and hence, a big population of clients to sample, and it was easily accessible by the researcher, which minimized the costs of transport during data collection.

Study population

The population of interest was all youths aged above 18 years in the Outpatient Department at Entebbe Regional Referral Hospital.

Sample Size Determination and rationale

The population of interest was 45. The sample size was calculated using Slovin's formula to get sample size.

n=N/(1+Ne2) where

n=sample size

and N=population of interest =45 (youths)

e=level of precision (maximum allowed error at 95% confidence interval in estimating the population size) =5%=0.05 Substituting the formula $n=45/(1+45 \times 0.05^2)$

n is approximately 40.4, therefore n=40

Therefore, the sample size was 40 respondents. The sample size was selected because it was adequate enough to generate the information needed for the study, it was relatively cheap and manageable for the researcher in terms of time and finances.

Sampling Technique and Procedure

The convenience sampling method was used since we were not sure of the actual number of youths who consumed the services from the hospital, and therefore, it was hard to obtain a sampling frame to facilitate probability sampling. Besides, it was a suitable method for collecting data in populations where individuals seek health services in isolated patterns; therefore, this method was used to recruit participants based on their availability and willingness to participate in the study.

Inclusion and Exclusion Criteria

Inclusion criteria

The study included all the Ugandan youth aged 18 years and above who were attending the outpatient

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department services at the hospital, all those who willingly consented and were mentally sane.

Exclusion Criteria
The study excluded all the youth who turned down the consent and withdrew from the study.

The Study Variables
A variable is a characteristic or value that varied in the study and when manipulated could have more than one possible value.

Dependent Variable
The dependent variable was uptake and factors influencing

Independent Variable
These are the outcome variables; uptake and factors influencing uptake of premarital sickle cell trait screening.

Research Instrument and rationale
This is the tool the researcher used for collecting data. It included structured and semi-structured questionnaires with both open and closed-ended questions that were designed in the English language. The researcher then pretested the questionnaire from outside the study area for validity and reliability of the questionnaire in Kajjansi Health Center IV. This enabled the removal of inappropriate or poor wording, unclear, embarrassing, and illogical questions. A final questionnaire was then developed for approval based on the pilot study.

Data Collection Procedure
The researcher obtained an introductory letter from the Institutional Research Committee that was presented to the Hospital Director of Entebbe Regional Referral Hospital. Having obtained permission to the study area, the researcher then introduced himself to the In-charge of OPD, who in turn introduced him to the youths. The researcher then introduced himself and obtained informed consent from the youths and explained the purpose of the study, benefits, as well as their voluntary acceptance to participate, taking keen interest to observe privacy, confidentiality, and respect for the rights of respondents. Questionnaires were filled in anonymously, and filled questionnaires were kept under lock and key and only accessed by the researcher.

Data management and analysis
The completed questionnaires were checked for completeness, accuracy, and consistency immediately after each respondent submitted the questionnaire, and clarification was sought before the researcher and respondents parted ways. The questionnaires were then kept under lock and key while waiting for analysis. Data was analyzed using the Microsoft Excel program to explain the meaning. It was then presented in the form of charts, figures, and tables.

Quality Control
Validity

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This was ensured by designing the questionnaire to match and clearly bring out the research objectives set. The research supervisor reviewed the questionnaire to check whether the questions had a direct relationship with the topic.

Reliability

This was assessed through pretesting with the tool with patients at Kajjansi Health Center attending the Outpatient Department. The feedback from the pilot study was used to make the necessary adjustments to ensure consistency, clarity, and authenticity of the tool before the actual study.

Ethical considerations

The researcher obtained an introductory letter from the school to take to the study area before going to collect data. Permission was sought for the area of conducting the research. The researcher obtained informed consent from all participants after explaining the objectives, significance, benefits, and their voluntary acceptance to participate. The researcher allowed those who were not willing to participate in the study to freely withdraw. Confidentiality, privacy, and respect for the rights of respondents were ensured by allowing the respondents to withhold their names and use codes instead. This study was approved by the research supervisor and the management of Mildmay Uganda School of Nursing and Midwifery.

Results

Socio-demographic data of the respondents

Table 1 shows distribution of respondents according to their socio-demographic characteristics ***(n=40)***

Variable	Responses	Frequency (f)	Percentages (%)
What is your gender	Male	17	42.5
	Female	23	57.5
What is your age	18-21 years	5	12.5
	22-25 years	8	20
	26-29 years	17	42.5
	30-35 years	10	24
What is your level of education	Primary	6	15
	Secondary	16	40
	Tertiary Institution	18	45
What is your religious status?	Christian	26	65
	Muslim	14	35
What is your employment status?	Employed	7	17.5
	Unemployed	33	82.5
Total for each variable		**40**	**100**

Source field findings (2025)

Table 1 shows that the majority, 23 (57.5%) of the respondents were female, while the least were 17 (42.5%) were male. Regarding age, the majority, 17 (42.5%) of the respondents were aged 26–29 years, whereas the least, 5 (12.5%) were aged 18–21 years. In terms of education, the majority, 18 (45%), had attained tertiary education, while the least 6 (15%) had primary education. Concerning religion, the majority, 26 (65%) were Christians, while the least were 14 (35%) were Muslims. Regarding employment status, the majority, 33 (82.5%), were unemployed, whereas the least 7 (17.5%) were employed.

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Health facility factors influencing uptake of premarital sickle cell trait screening services among the youth

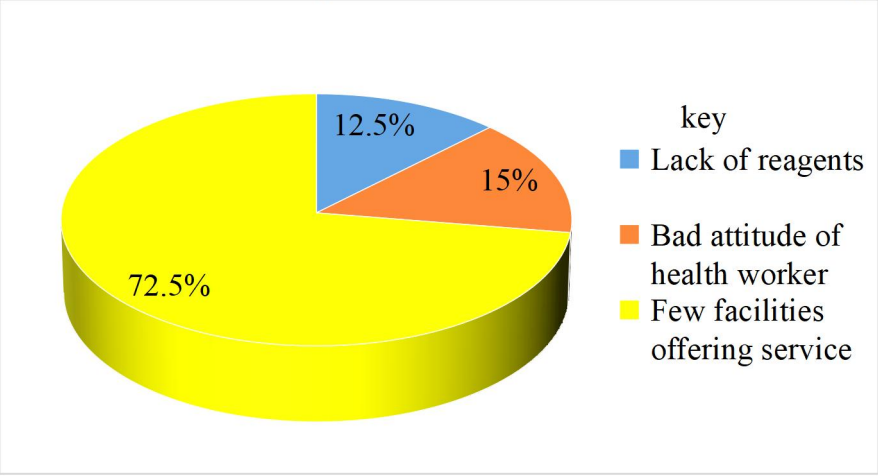
Table 2 shows distribution of respondents according to their other health facility factors influencing uptake of premarital sickle cell trait screening services (n=40)

Source field findings (2025)

Variable	Responses	Frequency (f)	Percentage (%)
Have you ever received counselling from health worker about premarital screening for sickle cell trait?	Yes No	4 36	10 90
What is the distance of you home to the health facility were they perform sickle cell trait screening	Below 2 km 3-5 km 5-6 km	5 23 12	12.5 57.5 30
How do you rate the availability of sickle cell trait screening equipment's in the hospital	Always available Not there I do not know	2 1 37	5 2.5 92.5
During receiving of other care, are you always educated about sickle cell trait screening?	Yes No	5 35	12.5 87.5
Total of each variable		**40**	**100**

Table 2 shows that the majority, 36 (90%) of respondents had never received counselling about premarital sickle cell trait screening, while the least 4 (10%) had received counselling. Regarding distance to the facility, the majority, 23 (57.5%), lived 3–5 km away from the facility, while the least, 5 (12.5%), lived below 2 km. Concerning the availability of equipment, the majority, 37 (92.5%), did not know about the equipment, while the least 1 (2.5%) reported that it was not available. During other care, the majority, 35 (87.5%), were not educated about sickle cell trait screening, whereas at least 5 (12.5%) were educated.

Figure 1 shows distribution of respondents according to the heath facility factor which limits them from screening for sickle cell trait (n=40)



Source field findings (2025)

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Figure 1 shows that the majority (72.5%) of the respondents mentioned a few facilities offering sickle cell trait screening service as a factor influencing their uptake, while the minority (12.5%) mentioned lack of reagents.

Discussion

The study also found that (57.5%) lived 3–5 km away from the facility, which is far away from the facility, hindering them from utilizing sickle cell trait screening. The researcher attributes this to the limited availability of screening centers in the community, inadequate transportation options, and the cost and time required to travel long distances, which reduce accessibility and discourage youths from seeking the service.

The study results are consistent with a study conducted in Uganda by Houwing et al. (2019), which found that long distances between health facilities and respondents' homes and inconvenient service hours were associated with lower use of screening services. The study further found that (72.5%) of the respondents mentioned that a few facilities offering sickle cell trait screening service limited their utilization of sickle cell trait screening. This is possibly because insufficient health centers are providing the service, existing facilities are centralized in urban areas, and many youths lack information about where to access screening, making it difficult to obtain the service conveniently. The results of this study are in agreement with a study conducted by Abioye et al. (2019), which revealed that the few facilities offering screening services discourage many from utilizing the screening.

Study limitations

The study involved only 40 participants, which limited the generalizability of the findings to the wider youth population.

Convenience sampling introduced selection bias because participants were chosen based on their availability rather than random selection.

The study relied on self-reported information collected through questionnaires, which is prone to recall bias and social desirability bias.

The study was conducted in only one health facility, Entebbe Regional Referral Hospital, which may not reflect the situation in other regions of Uganda.

Conclusion

Health facility factors like long distances, few screening centers, and limited outreach influenced the uptake of premarital sickle cell trait screening.

Recommendation

Health Facilities should increase accessibility by establishing more centers that offer premarital sickle cell trait screening services, including outreach services for remote areas.

Health facilities should implement reminder systems, outreach programs, and informational materials at facilities to inform youths about available services and how to access them.

Acknowledgment

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List of Abbreviations

OPD: Outpatient department
PSCTS: Premarital sickle cell Trait screening

Source of funding

The study was not funded

Conflict of interest

The author did not declare any conflict of interest

Data availability

Data is available upon request

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Author contribution

Nicholas Mujulizi Ahebwa collected data and drafted the manuscript of the study
George Masette supervised the study
Hasifa Nansereko supervised the study
Immaculate Naggulu supervised the study
Jane Frank supervised the study

Author biography

Nicholas Mujulizi Ahebwa is a student of diploma in nursing at Mildmay Uganda School Of Nursing And Midwifery
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