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Original Article

Individual, social and healthcare-related factors contributing to new HIV infections among women aged 15-24 years at Mukono General Hospital, Mukono district. A cross-sectional study.

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Abstract

Background:

Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (AIDS) continue to be a major global health tragedy despite intense efforts in international and local initiatives to address the pandemic. The study aimed at *identifying* the individual, social, and healthcare-related factors contributing to new HIV infections among women aged 15-24 years at Mukono General Hospital, Mukono district.

Methodology:

A cross-sectional research design was employed. The study population focused on women aged 15-24 years at Mukono General Hospital, Mukono district, with a sample size of 62 respondents using a simple random sampling method to select from the women aged 15-24 years. The researcher used Microsoft Excel to analyze the data.

Results:

39(63%) were single, 23(37%) were married. 52(84%) were well informed about the modes of HIV transmission. 50(81%) agree that using condoms can effectively prevent HIV transmission, unlike the 12(19%) who don't believe it, and lastly, 36(58%) feel like substance use affects their decision-making towards safe sexual practices.

46(74%) agreed that low education levels increase the risk of acquiring HIV. 35(56%) agreed that limited access to healthcare facilities contributes to new HIV infections. 48(77%) agreed that poverty limits access to HIV prevention services such as HIV testing. 39(63%) reported limited access to HIV prevention services, while 23(37%) reported not to have faced a limited access. 26(42%) had experienced stigma or discrimination from healthcare providers.

Conclusion:

Insufficient knowledge without behavioral empowerment and supportive environments has not consistently translated into safe sexual practices.

Recommendation:

Strengthen youth mentorship and peer-support programs. Peer educators can effectively reach young women with messages about risk reduction, safe sexual practices, and the importance of regular HIV testing.

Keywords: *Individual, social and healthcare-related factors, HIV infections, Human Immunodeficiency Virus, Acquired Immune Deficiency Syndrome, Mukono General Hospital.*
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Background of the study

Globally, there are approximately 39 million people with HIV, of whom 39 million are adults, and 1.5 million are children below 15 years old (Arisi *et al*.,2023). Developed nations in Europe and North America have achieved reductions in HIV incidence through improved education, prevention, and healthcare access (Haris & Abbas, 2024). Disparities still exist, with marginalized communities facing higher rates of infection. In contrast, in regions like Asia and parts of Eastern Europe, the prevalence of HIV among youths remains a significant concern, with challenges in accessing prevention and treatment services contributing to the persistence of the epidemic (Obeagu *et al*.,2023). Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (AIDS) continue to be a major global health tragedy despite intense efforts in international and local initiatives to address the pandemic. HIV is a significant global health concern, with young women aged 15-24 years affected. This age group contributed an estimated 1.2 million new HIV infections globally in 2021, with young women in sub-Saharan Africa particularly vulnerable. (Strathdee *et al.*,2021). Research shows that women and girls with poor school attendance, those with lower educational attainment, those exposed to intimate partner violence in some settings,

those who experience severe food insecurity, and those with older male partners are at higher risk of acquiring HIV. A lack of basic knowledge about sex and sexuality, and limited access to sexual and reproductive health and rights services for both boys and girls, adds to these vulnerabilities. Programmes need to draw together biomedical tools and behavioural, cultural, and structural interventions. Providing women with an enabling environment, the information and services they need, and social support is essential (2023 Global Aids Update FACTSHEET). In Sub-Saharan Africa, there were 210,000 new HIV infections among AGYW (aged 15–24 years). Women and girls (all ages) accounted for 63% of all new HIV infections.

Approximately 4000 adolescent girls and young women of 15–24 years worldwide were infected with HIV weekly in 2022, and over 3100 infections were in sub-Saharan Africa. Eighty-two per cent of adolescent girls and young women who acquired HIV in 2022 live in sub-Saharan Africa, including two-thirds in eastern and southern Africa. Long-standing gender inequalities, discrimination, and poverty deny many women and adolescent girls economic autonomy, deprive them of control over their sexual lives, and expose them to the risk of emotional and bodily harm. Mukono is one of the districts that have registered new infections of HIV, with 860 cases registered in 2023, making it among the top five districts with high HIV prevalence rates. (kanki & koofhethile,2023). The study aimed at identifying the individual, social, and healthcare-related factors contributing to new HIV infections among women aged 15-24 years at Mukono General Hospital, Mukono district.

Methodology

Study design

This study employed a cross-sectional research design. Data was collected from respondents at a single point in time without repetition from the representative population. It was used because it reduced time wastage and costs, and it also gave useful conclusions in the form of statistics and in-depth details about the study. The study adopted the quantitative method where the researcher used questionnaires that were filled out by the selected women aged 15-24 years in Mukono.

Study area

The study was conducted at Mukono General Hospital, Mukono district. The hospital was chosen because Mukono was among the districts that registered high new infections of HIV, especially among youths, as evidenced by statistics from the Uganda Virus Research Institute, which revealed that Mukono was among the top five districts that registered high cases of HIV infection in 2023 at 860 new cases.

Study Population

The study population focused on women aged 15-24 years at Mukono General Hospital, Mukono district.

Sample size determination

A sample is a subgroup that is representative of the target population from whom findings can be generalized about the population. Sample size was determined by the formula developed by Burton.

Sample size=QR/O

Where, Q=Total number of days that will be spent on data collection (31 days)

R=Maximum number of respondents to be interviewed per day (2 respondents)

O=Maximum time that will be spent on each respondent (1 hour)

Sample size= (31*2)/1

Sample size = 62 respondents of 15-24 years

Sampling Technique

The researcher used a simple random sampling method to select from the women aged 15-24 years.

Sampling Procedure

The researcher obtained the list of women who are 15-24 years old, willing to participate in the study, and used 20 pieces of paper written with YES/NO, then put them into the box. The box was shaken, and respondents were asked to pick the papers, and only those who picked YES proceeded with the interview of the study, and those who picked NO were excluded from the study. The researcher repeated the procedure until 62 respondents were obtained.

Data collection method

The researcher employed a quantitative research method. Quantitative research method was used because it was more reliable and objective, it helped the researcher in the use of statistics to generalize the findings and help in testing theories/ hypotheses, and lastly, it helped in determining the relationship between the two variables. Therefore, a quantitative research approach was used to gather statistical data from the selected women aged 15-24 years living in Mukono district with the help of researcher-administered questionnaires. Quantitative research method would help to collect statistical data on all three objectives of the study.

Data collection tools

A questionnaire survey is a set of questions designed by the researcher for the purpose of collecting data. The questionnaire included closed-ended questions, which required the respondent to give straightforward answers. They also gave the respondents the opportunity to express their opinion in a free-flowing manner, giving them time to

think before answering questions, since it avoided personal contact.

Data collection procedure

The researcher obtained an introductory letter from the School of Clinical Medicine, Kampala Institute of Health Professionals, after which he sought permission from the hospital administration. The researcher then approached various respondents to conduct interviews and distribute the questionnaires after their consent.

Study variables

The independent variable was a potential risk factor that contributed to new HIV infections, and the variable here was AGE, "15-24" years. The dependent variable was the outcome being measured, and the independent variable was "New HIV infections".

Quality control

Pretesting of the research tool

The questionnaire was pretested among 5 respondents at the hospital who met the inclusion criteria but were not part of the final sample. Necessary adjustments were made based on their feedback**.**

Training of research assistants

The researcher shared with the research assistants all the basic information that was received from the supervisor on the appropriate administration of questionnaires and ethical conduct during data collection.

Giving ample time for data collection

The study was carried out for one month to ensure enough time was given to all respondents.

Inclusion criteria

The study included all women aged 15-24 years attending services at Mukono General Hospital who consented and voluntarily accepted to participate in the study.

Exclusion criteria

The study excluded all women below 15years or above 24 years and those who declined to provide consent.

Adherence to SOPS

Confidentiality and privacy of respondents were maintained.

Data analysis and Presentation

The researcher used the Microsoft Excel spreadsheet program to analyze the data. Editing of data was done in the field to ensure accuracy and completeness of results. The results obtained were presented through descriptive statistics, figures, and tables.

Ethical consideration

The ethical principles included: honesty, objectivity, respect for intellectual property, confidentiality, nondiscrimination, among many others. This involved assuring participants of voluntary participation and informed consent. All participating caretakers were selected based on informed consent and were informed of their right to withdraw from the study at any time without any penalty.

Results

Table 1: Showing descriptive statistics on the biodata of respondents. n=62

Item	Description	Frequency	Percentage(%)
Marital status	Single	**39**	**63**
	Married	**23**	**37**
	Total	**62**	**100**
Education level	Primary	**8**	**13**
	Secondary	**31**	**50**
	Tertiary	**23**	**37**
	Total	**62**	**100**
Occupation	Student	**28**	**45**
	Unemployed	**10**	**16**
	Working with the government	**6**	**10**
	Working with the private sector	**8**	**13**
	Business person	**10**	**16**
	Total	**62**	**100**
Religion	Protestants	**18**	**29**
	Catholics	**26**	**42**
	SDA	**6**	**10**

	Muslim	**8**	**13**
	Pentecostal	**4**	**6**
	Total	**62**	**100**

Table 1 signifies 39(63%) were single, 23(37%) were married. The education level of the respondents varies, with the highest percentage having secondary education at 31(50%), tertiary education at 23(37%), and primary level at 8(13%). 28(45%) were students, 8(13%) working privately, 6(10%) working with government constitute, 10(16%) unemployed make up while those who are business persons 10(16%). 26(42%) were Catholics, followed by protestants 18(29%), Muslims 8(13%), SDA 6(10%) and Pentecostals 4(6%).

Individual factors contributing to New HIV Infections

Table 2. Showing response to individual factors contributing to new HIV infections. n=62

STATEMENT	RESPONSE	FREQUENCY(f)	PERCENTAGE(%)
Are you informed about the modes of HIV transmission?	YES	52	84
	NO	10	16
	TOTAL	**62**	**100**
Have you attended HIV/AIDS awareness programs in the last year?	YES	41	66
	NO	21	34
	TOTAL	**62**	**100**
Do you know where to access HIV testing services?	YES	47	76
	NO	15	24
	TOTAL	**62**	**100**
Do you believe that using condoms can effectively prevent HIV transmission?	YES	50	81
	NO	12	19
	TOTAL	**62**	**100**
Do you feel like substance use affects your decision-making regarding safe sex practices?	YES	36	58
	NO	26	42
	TOTAL	**62**	**100**

Table 2, the majority, 52(84%), agreed that they are well informed about the modes of HIV transmission. 41(66%) agreed that they have attended HIV/AIDS awareness programs in the last year, unlike the 21(34%). 47(76%) of women know where to access HIV testing services in their community, unlike the 15(24%) who didn't know. 50(81%) agree that using condoms can effectively prevent HIV transmission, unlike the 12(19%) who don't believe it, and lastly, 36(58%) feel like substance use affects their decision-making towards safe sexual practices.

Social factors contributing to new HIV infections

Table 3: Showing respondents' responses on social factors contributing to new HIV infections. n=62

STATEMENT	Response	Frequency(f)	Percentage(%)
Do you think a low education level increases the risk of acquiring HIV?	YES	46	74
	NO	16	26
	TOTAL	**62**	**100**
Do you believe limited access to healthcare facilities contributes to new HIV infections?	YES	35	56
	NO	27	44
	TOTAL	**62**	**100**

Have you engaged in transactional sex?	YES	34	55
	NO	28	45
	TOTAL	**62**	**100**
Does poverty limit access to HIV prevention services such as HIV testing?	YES	48	77
	NO	14	23
	TOTAL	**62**	**100**

Table 3, 46(74%) agreed that low education levels increase risks to acquiring HIV. 35(56%) agreed that limited access to healthcare facilities contributes to new HIV infections. 34(55%) had ever engaged in transactional sex while 28(45%) didn't agree. 48(77%) agreed that poverty limits access to HIV prevention services such as HIV testing.

Healthcare factors contributing to new HIV infections

Figure 1: A pie chart showing responses to healthcare factors contributing to new HIV infections.

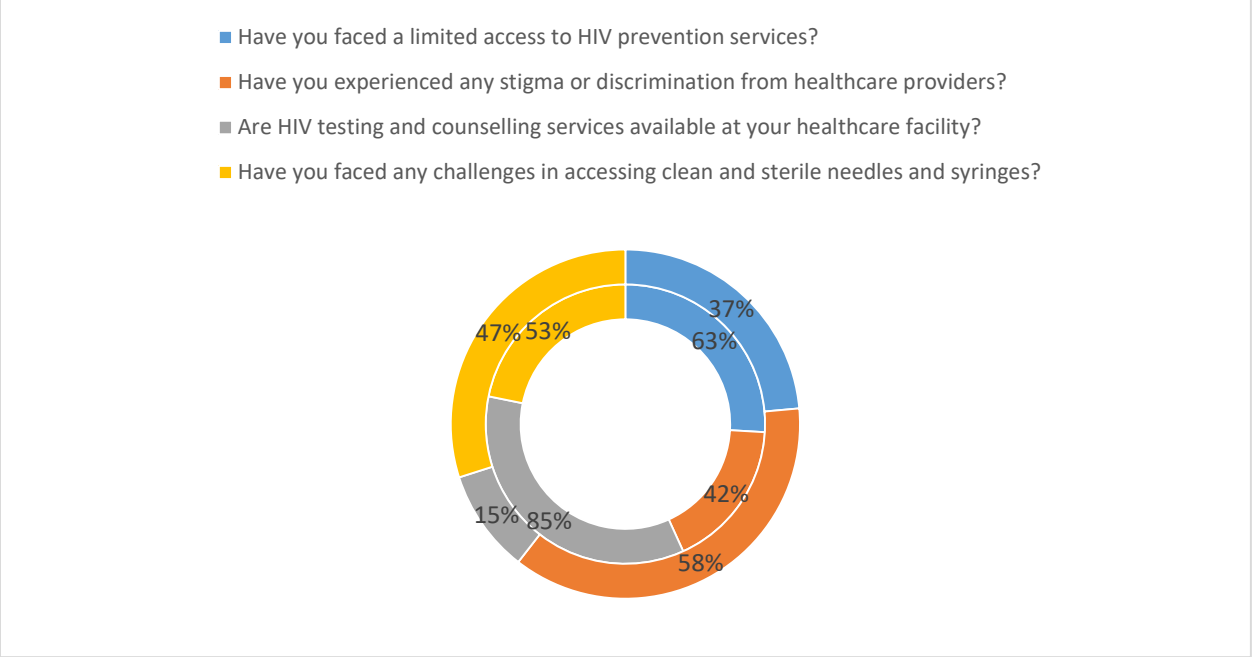

Figure 1 shows 39(63%) reported limited access to HIV prevention services, while 23(37%) reported not having faced limited access. 26(42%) had experienced stigma or discrimination from healthcare providers. 53(85%) acknowledged that HIV testing and counseling services are available, and more than half, 33(53%), experienced challenges in accessing clean and sterile needles or syringes.

Discussion

Individual Factors Contributing to New HIV Infections

According to the results, 52(84%) of respondents reported being informed about the modes of HIV transmission. This reflects a commendable level of basic HIV knowledge and aligns with (Obeagu et al. 2023), who found similarly high levels of awareness (over 95%) among Ugandan secondary school learners. The persistence of new infections among young women despite high awareness indicates a gap between knowledge and actual prevention practices.

The study revealed 41(66%) of respondents had attended HIV/AIDS awareness programs in the past year. Attendance at such programs is beneficial because structured awareness efforts often improve risk perception and promote responsible behavior. However, 21(34%) had not participated in any program, pointing to gaps in public health outreach and the uneven distribution of youth-focused education. The study showed majority, 47(76%) of respondents knew where to access HIV testing services, indicating strong service visibility within the community. Although this suggests that knowledge of service points is not a major barrier, the remaining 15(24%) who lack this

information remain at heightened risk due to limited opportunities for early testing, counseling, and prevention support. Testing is a key point of entry for prevention interventions, and those who do not know where to test may remain unaware of their risk status or fail to receive important prevention messaging. 50(81%) believed condoms effectively prevent HIV transmission. This aligns with earlier studies in Uganda demonstrating general acceptance of condoms as effective preventive tools (Obeagu et al., 2023). Consistent condom use among young women is often compromised by factors such as partner resistance, trust dynamics, or fear of judgment. Younger women, in particular, may lack the confidence or negotiation power required to demand condom use consistently, making belief in effectiveness insufficient for protection. Substance use emerged as a significant contributing individual factor. 36(58%) of the respondents agreed that substance use affects their decision-making regarding safe sex practices. Alcohol and other substances impair judgment, reduce inhibitions, and increase the likelihood of unprotected sex, particularly when sexual encounters occur spontaneously or under peer influence. (Kiunyu, 2015) highlights that alcohol use among youths is strongly associated with risky sexual behavior, including inconsistent condom use and engagement in unplanned sexual encounters. In Mukono, substance use may also co-occur with other risk factors such as peer pressure, nightlife culture, and risky social contexts where young women feel less in control of their decisions.

Social Factors Contributing to New HIV Infections

High levels 46(74%) agreed that low education levels increase the risk of acquiring HIV. This means individuals with lower educational attainment cannot often accurately assess sexual risks or negotiate safe practices. This finding aligns with Nastiti *et al.* (2024), who found that higher education among adolescent girls and young women (AGYW) consistently correlates with reduced HIV risk behaviors. The majority, 48(77%), showed that poverty limits access to HIV prevention services**,** including testing. Poverty exacerbates vulnerability by limiting access to transportation, health facilities, and preventive tools such as condoms or PreP. This finding is supported by Murewanhema et al. (2022), who emphasize that poverty increases dependency on older male partners—relationships characterized by unequal power and reduced condom negotiation ability.

A significant proportion, 34**(**55%), admitted to engaging in transactional sex, a clear and direct risk factor. Stoebenau *et al.* (2016) described transactional sexual relationships as deeply embedded in social norms, especially in African contexts where economic hardship intersects with cultural expectations. Partners in these relationships are often older men who may themselves be engaged in multiple sexual relationships, further increasing HIV risk.

Limited healthcare accessibility was another major social factor. More than half 35**(**56%) of respondents believed that limited access to healthcare facilities contributes to new infections**,** reflecting the challenges that young women face in reaching health services. Social barriers include long distances to facilities, lack of money for transport, parental restrictions, and negative community attitudes toward young women seeking sexual health services. Dellar *et al.* (2020) emphasize that structural barriers hinder HIV testing and treatment uptake among young women across sub-Saharan Africa.

Healthcare-Related Factors Contributing to New HIV Infections

53**(**85%) of the respondents reported that HIV testing and counseling services were available**;** the study revealed substantial barriers that reduced young women's ability to effectively utilize these services. Availability does not always equate to accessibility or quality. 39**(**63%) of respondents indicated that they faced limited access to HIV prevention services**,** including condoms, testing kits, counseling services, and youth-friendly outreach programs. This suggests that while facilities exist, the accessibility of these services is hindered by issues such as long waiting times, inconvenient operating hours, and understaffing. Risher et al. (2021) emphasize that in many African settings, health systems are constrained by resource shortages, making it difficult for young women to obtain timely and confidential services. Stigma reported by 26**(**42%) of respondents **is** one of the most profound healthcare-related barriers. Health workers sometimes display moral judgment, especially toward unmarried young women seeking reproductive health services. This is consistent with Nasrullah et al. (2021), who found that stigma from providers discourages adolescents from HIV testing and treatment adherence.

Another significant barrier was difficulty accessing sterile needles and syringes**,** reported by 33**(**53%) of respondents**.** While injecting drug use may be less common among young women, this indicator reflects supply chain issues and stockouts across public health facilities. Stockouts also often affect condoms, HIV testing kits, and PreP supplies, which are key prevention commodities. When essential supplies are insufficient or inconsistent, young women are more likely to engage in risky sexual behavior or miss opportunities for preventive care.

Moreover, although youth-friendly corners are a key national strategy to address HIV among youths, these services are often inadequately funded, poorly staffed, or not fully functional**.** Young women may not find health facilities welcoming, confidential, or safe, thereby avoiding seeking services. Dellar et al. (2020) emphasize that adolescent-friendly services must be nonjudgmental, confidential, accessible, and respectful, conditions that are not always met in resource-limited settings. Finally, the broader health

system constraints, such as limited funding, uneven distribution of skilled health workers, and insufficient community outreach, further restrict the system's ability to prevent new infections. Many young women rely on health facilities located several kilometers away, which poses a challenge in terms of transportation costs and safety.

Conclusion

The study concludes that reducing new HIV infections among young women requires holistic, multi-level interventions that address not only individual behaviors but also the broader social and structural conditions that shape vulnerability. Strengthening sexual health education, expanding economic empowerment programs, reducing stigma, and improving youth-friendly, accessible healthcare services are essential steps toward curbing the rising incidence of HIV infections among adolescent girls and young women in Mukono District.

Recommendation

Strengthen youth mentorship and peer-support programs. Peer educators can effectively reach young women with messages about risk reduction, safe sexual practices, and the importance of regular HIV testing. Promote regular HIV testing and early health-seeking behaviors and encourage routine testing through school outreaches, community testing drives, and digital campaigns targeted at young women. Increase accessibility of age-appropriate information in digital spaces. Platforms such as social media, WhatsApp groups, and mobile health apps should share youth-friendly HIV prevention content to combat misinformation and improve risk perception.

Increase community sensitization to reduce stigma and harmful gender norms and engage cultural leaders, religious institutions, and local councils in campaigns addressing gender inequality, stigma toward young sexually active women, and unsafe norms around masculinity.

Strengthen girls' access to formal education and re-entry programs and **e**xpand support for school retention among girls through scholarships, material support, mentorship, and safe-school initiatives. Promote positive parenting and family communication, and encourage parents to engage in open discussions about sexual health. Community-based parenting sessions can help caregivers support young women without judgment or stigma.

Strengthen community-based safe spaces for adolescent girls and young women (AGYW) by **c**reating structured safe spaces where young women receive mentorship, skills training, HIV education, and psychosocial support.

Strengthen youth-friendly corners at all health facilities and ensure that youth-friendly corners are fully functional, well-staffed, confidential, nonjudgmental, and open during hours convenient for young women. Ensure consistent availability of prevention commodities and maintain a steady supply of condoms, PreP, HIV testing kits, and sterile syringes. Stockouts directly hinder HIV prevention efforts and must be urgently addressed. Introduce digital health solutions for appointment reminders, self-testing support, and education. Mobile platforms can help young women access information, schedule tests, and receive reminders while preserving privacy.

Limitations of the study.

The respondents were always reminded not to leave any item in the questionnaires unanswered, and would be closely followed up on as to the date of retrieval.

Financial constraints also limited the desired scope of the study and sample size.

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List of Abbreviations

AGYW: Adolescent Girls and Young Women
AIDS: Acquired Immunodeficiency Syndrome
HIV: Human Immunodeficiency Virus
PreP: Pre-exposure prophylaxis
WHO: World Health Organization

Source of funding

The study was not funded.

Conflict of interest

The author reports no conflict of interest.

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 contributions;

Benjamine Luube collected data and compiled the study report.

John Kibirige Paul supervised all levels of the research project.

Author Biography

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