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Prevalence and Factors Associated with HIV/AIDS among Motorcyclists in Lwamata Town Council Kiboga District

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ABSTRACT

HIV/AIDS is a major concern in all countries and all races of the world and it is a bigger problem in developing countries and especially in Sub-Saharan Africa and in Uganda. The prevalence of HIV among adults aged 15 to 64 in Uganda was 6.2% according to Uganda Population-Based HIV Impact Survey. This study was designed to determine the prevalence of HIV/AIDS among motorcyclists in Lwamata town council Kiboga district. This study employed a cross-section descriptive study design. It was conducted in Lwamata town council Kiboga district among 119 participants (motorcyclists) who were selected using a convenience sampling technique. A questionnaire was used to collect data and all collected data was coded, entered, and analyzed using SPSS version 25. A greater number of participants were aged 18-34 years (56.3%), by religion many were Catholics 45(37.8%), the majority 54(45.4%) were single, and by education, many 84(70.6%) were of secondary level. According to figure 1 below, 2.2(18.5%) tested HIV/AIDS positive while 97(81.5%) tested negative. Thus the prevalence of HIV/AIDS among study participants was 18.5%. The factor significantly associated with HIV/AIDS test results was the number of partners (3 Vs 1). Participants with one partner were 56% less likely to be HIV positive compared to those with 3 partners, (aOR=0.442, 95% CI=0.213-0.922). The prevalence of HIV/AIDS among motorcyclists in Lwamata town council Kiboga district is high which was significantly associated with a number of partners that is having more than one partner increases the chances of getting HIV/AIDS.

Keywords: HIV/AIDS, Motorcyclists, Lwamata town, Sexual partners, Prevalence.

INTRODUCTION

HIV/AIDS is a major concern in all countries and all races of the world and it is a bigger problem in developing countries and especially in Sub-Saharan Africa (SSA) [1, 2]. Since the start of the HIV epidemic, 77.3 million people have become infected with HIV and 35.4 million people have died from AIDS-related illnesses [3]. In the past 2 decades, the human immunodeficiency virus (HIV) has rampaged across the globe leaving virtually no country untouched and it is estimated that at the end of 2007, 33.2 million people were living with HIV [4]. Progress was achieved over a short period of time in supporting antiretroviral therapy (ART) for millions of persons in low and middle-income countries [5]. In developed countries, a study done in China showed the number of people affected by HIV was estimated between 430,000 and 1.5 million [6]. In developing countries, Africa accounts for 70% (26 million people living with HIV) in the world [7] and Sub-Saharan Africa (SSA) harbors 67% of the world's HIV

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infection [8]. Eastern Africa is the second most affected region by HIV and AIDS in the world after Southern Africa [9,10]. Among Kenyan men, having an HIV-negative sexual partner, being circumcised, increasing the number of condom-protected sex acts in the preceding month, being younger, and being a resident of Homa Bay, Kisumu, Siaya, and Busia counties compared to Migori County reduced the risk of HIV infection. For women, being married, having more children with the current spouse, having an HIV-negative sexual partner, and being a resident of Busia compared to Migori County reduced the risk of HIV infection [11]. According to Uganda Population-Based HIV Impact Survey (UPHIA), the prevalence of HIV among adults aged 15 to 64 in Uganda was 6.2% [12]. While a study conducted among motorcyclists in Kampala showed the prevalence of HIV to be 7.5% [13]. Regardless of the fact that HIV prevalence among motorcyclists is even higher than the national prevalence of HIV, little attention is given to commercial motorcyclists. Therefore, this research aims at determining the prevalence and factors associated with HIV/AIDS among motorcyclists in Lwamata town council Kiboga district. This place is with no documented information regarding the contribution of motorcyclists toward the HIV/AIDS burden.

METHODOLOGY

Study design

This was a cross-sectional study design.

Area of Study

The study was carried out in Lwamata town council Kiboga district. Lwamata is a town in Kiboga East County, Kiboga District, in the Central Region of Uganda. The town is located on the Kampala–Hoima Road, approximately 7 kilometers (4 mi), southeast of the town of Kiboga, the location of the district headquarters. This is about 117 kilometers (73 mi) northwest of Kampala, the capital and largest city in the country. The coordinates of Lwamata are 0°53'15.0"N, 31°49'09.0"E (Latitude: 0.887494; Longitude: 31.819173). In 2012 Lwamata town council was estimated to have a total population of 28,700 people of which 14,400 were females and 14,300 were males. The basic source of people's livelihood is agriculture with over 85% of the population engaged in farming, of which the women constitute the bigger percentage. 82.4% of the households are thus involved in agricultural activities. 94.0% are directly involved in crop husbandry while 53.2% are involved in animal husbandry. 0.6% of the communities are involved in fish farming, a newly introduced farming alternative. However, 0.5% are generally involved in agricultural activities (NSDS [14]).

Study population

The study population included all motorcyclists in Lwamata town council Kiboga district during the period of the study. These were chosen following the criteria explained hereunder.

Inclusion criteria

This study only included motorcyclists in Lwamata town council Kiboga district during the period of the study who consented to take part in this study.

Exclusion criteria

This study excluded all non-motorcyclists in Lwamata town council Kiboga district and motorcyclists in Lwamata town council Kiboga district who were not available during the period of the study and those who didn't consent to take part in this study.

Sample size determination

Lwamata town council Kiboga district has about 170 motorcyclists. Therefore, the research used Kish and Leslie formula (1965) that was simplified by Yamane [15] to determine the sample size. This is illustrated as shown below.

$$\text{From } N = \frac{(PQ)Z^2}{D^2} \quad \text{to} \quad N = \frac{n}{1+nD^2}$$

Where:

n is the population to be used (170)

N is the sample size required

Z² is the abscissa of the normal curve that cuts off an area at the tails (1- α equals the desired confidence level, e.g., 95%),

P is the estimated proportion of an attribute that is present in the population

D is the desired level of precision (0.05)

Q is 1-P

$$N = \frac{170}{1+(170)0.05^2} = 119.29 \neq 119 \text{ motorcyclists}$$

Therefore, the study used a sample size 119 participants

Sampling method

Convenience sampling was used to recruit the participants until the required number is reached.

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Study variables

The study had both dependent, intervening and independent variables as shown below;

Dependent variable

The dependent variable in this study was the prevalence of HIV/AIDSs.

Intervening variables

The intervening variables in this study included environment factors such as sharing sharp objects like syringes and needles, stigma and discrimination, attitude, labor migration and policy environments.

Independent variables

The independent variables in this study were socio-economic factors such as parent's education, place of residence, marital status, religion, occupation, parental age, effectiveness of HIV infection prevention and programs, and heterosexual exposure.

Data collection methods/instruments

Regarding the prevalence of HIV/AIDSs, respondents were tested and results were recorded in the questionnaire they answered. Data regarding the factors associated with HIV/AIDSs among motorcyclists was collected using a pre-tested questionnaire with several close-ended questions. A questionnaire was used to collect both qualitative and quantitative data. Questionnaires were given to those who know English and could read and write. For those who did not know English and could not read and write, a direct translation of the questionnaire through verbal interviews was done by the research assistants.

Blood sample collection Procedure

- ✦ After counseling, the participant was positioned in the right position for the collection of blood samples while seated in a chair.
- ✦ The researcher observed standard precautions as described by WHO [16].
- ✦ The upper arm was tied with a tourniquet and visible veins were identified.
- ✦ The site was cleaned with a swab moistened with 70% alcohol in circular motion outwardly.
- ✦ Venus blood sample was collected using a sterile needle and syringe.
- ✦ Collected blood sample was transferred into a plain vacutainer labelled with participants' code number.
- ✦ Samples were allowed to clot for 15 minutes and serum was separated with the help of a centrifuge for 2 minutes at 4000 Revolution/minute.
- ✦ Testing was done at Hope medical clinic Lwamata town Council.

HIV testing procedure

- i. The research assistant checked testing kit before use. Used only items that had not expired or had not been damaged.
- ii. The kit and collected blood sample kept at room temperature was put to use.
- iii. The specimens were handled using universal safety precautions.
- iv. The work area was cleaned and organized always.
- v. One strip was used on every test while preserving the lot number on the remaining packet of strips.
- vi. Participants' code numbers were labeled on the test strip.
- vii. The protective foil cover was then Pulled off.
- viii. 50 µl of the specimen was collected using an automatic pipette.
- ix. The specimen was applied to the absorbent pad on the strip (sample area).
- x. Results were read and recorded on the participant questionnaire.

Result Interpretation

- 2 lines of any intensity appear in both the control and patient areas indicating reactive (positive) results.
- 1 line appears in the control area and no line in the patient area implies non-reactive (negative) results.
- No line appearing in the control area implies invalid results. Such results were not reported and thus the test was repeated with a new test device even if a line appears in the patient area.
- All specimens were given rapid test 1 (using Determine). If the first test was negative, report the specimen as HIV-negative.
- If the rapid test 1 (using Determine) result is positive, do rapid test 2 (using Stat Pak). Be aware that rapid test 2 were a different type of test kit from rapid test 1.
- If both rapid test 1 and rapid test 2 results were positive, the specimen was reported as HIV-positive.
- If rapid test 1 was positive and rapid test 2 was negative, we sent out for or did rapid test 3 (using Bio Line) (a different test kit from rapid tests 1 and 2)
- Lastly, post-testing counseling was done accordingly.

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Data analysis and presentation

Data was checked for completeness and then entered into a computer software called Microsoft excel. The entered data was then exported into SPSS version 25 for analysis or STATA Version 14.2. The analyzed data was presented as means of standard deviation in form of tables, charts and figures.

RESULTS

Socio demographic data

A greater number of participants were aged 18-34 years (56.3%), by religion many were Catholics 45(37.8%), majority 54(45.4%) were single and by education, many 84(70.6%) were of secondary level.

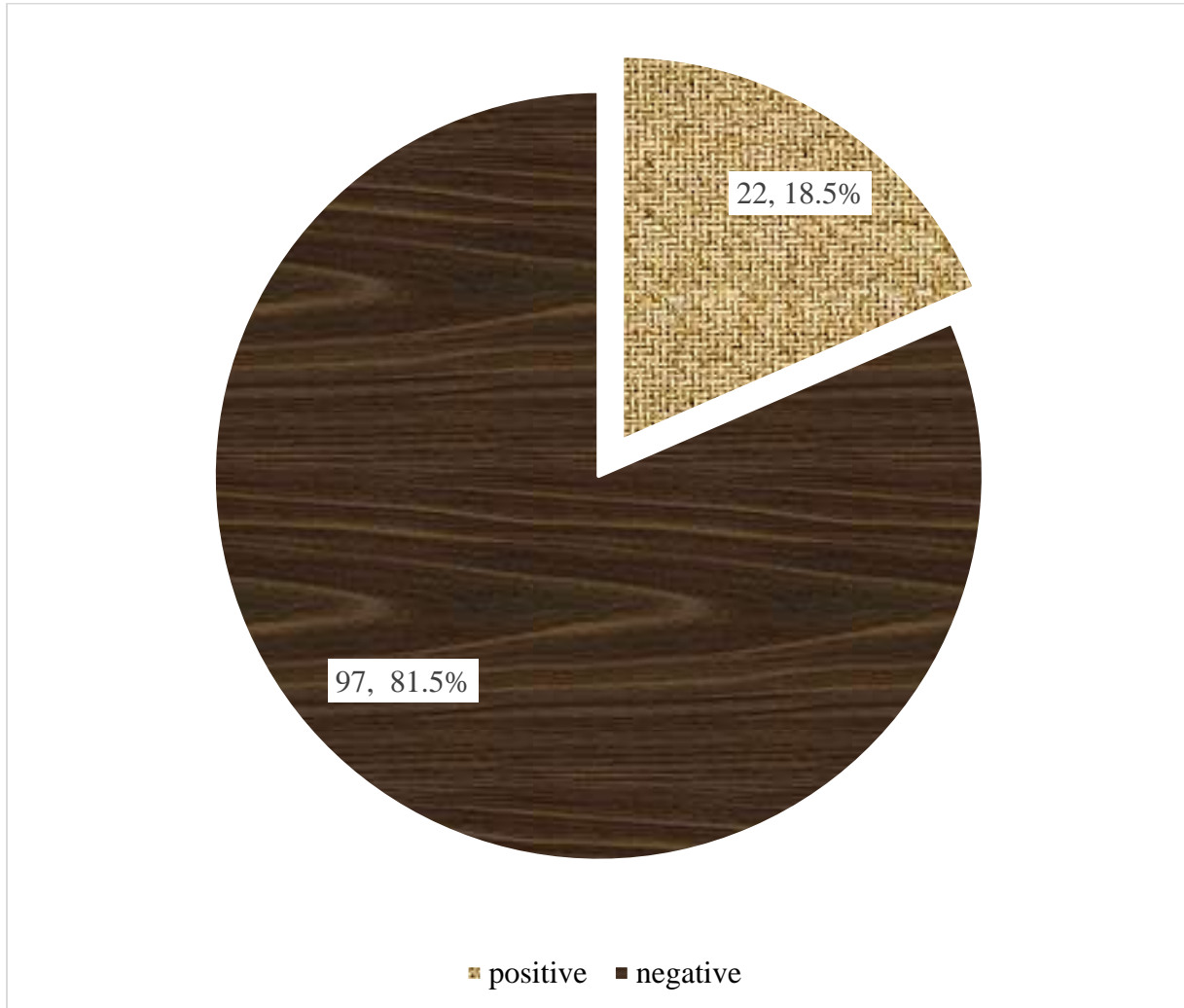
Table 1: shows socio-demographic factors of study participants

Variables	Frequency (n)	Percentage (%)
Age		
18-34 years	67	56.3
≥ 35 years	52	43.7
Religion		
Catholic	45	37.8
Muslim	41	34.5
Anglican	19	15.9
Born again	7	5.9
SDA	7	5.9
Marital status		
Single	54	45.4
Married	44	37.0
Divorced/separated	21	17.6
Education		
Primary	21	17.6
Secondary	84	70.6
University/tertiary	14	11.8

Prevalence of HIV/AIDS among motorcyclists in Lwamata town council Kiboga district

According to figure 1 below, 22(18.5%) were test HIV/AIDS positive while 97(81.5%) were tested negative. Thus the prevalence of HIV/AIDS among study participants was 18.5%.

Figure 1: A graph illustrating prevalence of HIV/AIDS among motorcyclists in Lwamata town council, Kiboga district.



Factors associated with HIV/AIDS prevalence among motorcyclists in Lwamata town council Kiboga district.

Socio-demographic factors associated with HIV/AIDS prevalence among participants.

Bivariate analysis of socio-demographic factors associated with HIV/AIDS prevalence.

Table 2 shows that none of the socio demographic factor has p-value less than 0.2. Thus the multivariate analysis was not carried which makes it conclusive that none of the socio-demographic factors is associated with HIV/AIDS.

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Table 2: Bivariate analysis of socio-demographic factors that are associated with HIV among youth aged 18-35 years.

Variables	HIV/AIDS TEST		Odd ratio	P-value
	Positive	Negative		
Age				
18-34 years	15	52	1.355	0.628
≥ 35 years	7	45		
Religion				
Catholic	7	38		
Muslim	6	35		
Anglican	9	10	0.971	0.880
Born again	0	7		
SDA	0	7		
Marital status				
Single	9	45		
Married	10	34	1.111	0.695
Divorced	3	18		
Education				
Primary	6	15		
Secondary	15	69	0.973	0.584
University/tertiary	1	13		

Behavioral and psychosocial factors associated with HIV/AIDS prevalence among participants
Bivariate analysis of behavioral and psychosocial factors associated with HIV/AIDS prevalence among participants

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Table 3 shows above shows that distribution of condoms and guidance provided on use of condoms together with the number of partners had a p-value less than 0.2. Thus were proceeded with multivariate analysis.

Table 3: Bivariate analysis of other factors that are associated with HIV among youth aged 18-35 years

Variables	HIV/AIDS TEST		Odd ratio	P-value
	Positive	Negative		
Trained on issues related to HIV/AIDS control in the last five years				
Yes	4	28	0.678	0.641
No	18	69		
Is there distribution of condoms and guidance provided on use of condoms				
Yes	3	34	0.261	0.148
No	19	63		
At what age did you have your first sexual intercourse				
Before 15 years	4	11	1.365	0.771
After 15 years	18	86		
Number of partners				
1	8	73	0.180	0.060
2	9	21		
3	5	3		
Do you regularly use condoms				
Yes	2	16	0.824	0.839
No	20	81		
Have you ever tested for HIV				
Yes	7	20	0.869	0.921
No	15	77		
Do you use any drug before sex				
Yes	6	18	0.010	0.999
No	16	79		
Do you inject yourself with drugs (IDU)				
Yes	4	20	0.205	0.999
No	18	77		
Do you share objects like needles, and razor blades among others				

Yes	8	28	0.070	0.999
No	14	69		
Have many sex partners did you have last year				
One	12	65	1.224	0.767
Two	7	24		
More than two	3	8		
Have you ever had sex with your sex mate (man to man)				
Yes	3	6	2.641	0.415
No	19	91		
Have you ever had sex with prostitutes				
Yes	14	17	4.911	0.998
No	8	80		

Multivariate analysis of behavioral and psychosocial factors associated with HIV/AIDs prevalence among participants

From the table below, number of partners (3 Vs 1), was significant to HIV/AIDS test results. Participants with one partner were 56% less likely to be HIV positive compared to those with 3 partners, (aOR=0.442, 95% CI=0.213-0.922).

Table 4: Multivariate analysis: of other factors that are HIV among youth aged 18-35 years

	aOR	95%CI	p-value
Is there distribution of condoms and guidance provided on the use of condoms			
Yes	1.00		
No	0.226	0.047-1.080	0.062
Number of partners			
3	1.00		
2	1.652	0.916-2.840	0.27
1	0.442	0.213-0.922	0.03

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DISCUSSION

The prevalence of HIV/AIDS among Motorcyclists in Lwamata town council Kiboga district

In this study, prevalence among motorcyclists in Lwamata town council Kiboga district was 18.5%. This is low compared to the finding in a study done in urban Vietnam which revealed that the prevalence of HIV among male motorcyclists was 20.6% [17]. The reasons for the high prevalence of HIV could be due to the fact that the Vietnam study was done in an urban setting, unlike Kiboga which is a rural setting. However, it was high compared to the incidence of HIV in China which was 4.2 per 100 000 individuals in 2017 [18-21]. HIV prevalence in India is estimated at 0.22% (0.16% – 0.30%) in 2017 [18-21]. A study done in Abuja Nigeria among 379 Okada riders (motorcyclists) found that the prevalence of HIV was 2.02% [19]. The reason for the high/low prevalence of HIV cannot be ruled out by study population and geographical location as it differs from one country to another, from place to place in the same country, and among similar populations such as motorcyclists. Therefore, the study prevalence of HIV/AIDS among motorcyclists in Lwamata town council Kiboga district is high compared to many studies.

Factors associated with HIV/AIDS prevalence among motorcyclists in Lwamata town council Kiboga district.

In this study, the number of partners was significant with the prevalence of HIV/AIDS among motorcyclists in Lwamata town council Kiboga district that is motorcyclists with one partner were 56% less likely to be HIV positive compared to those with 3 partners. This is in line with the finding by Huy *et al.* [17] who showed that participants having a lower number of partners were 44% less likely to have HIV compared to their counterparts. Another agreement with the study finding was shown by Linda [13] who found having 4-6 lifetime partners increased the chances of having HIV by 2.2 in Kampala Uganda. Regardless of the fact that multiple partners increase in getting HIV/AIDS, UNAIDS [8] found that in many African countries including Uganda, there was a significant increase in the number of sexual partners in some countries. Therefore, having more than one partner increases the chances of getting HIV/AIDS.

CONCLUSION

The study prevalence of HIV/AIDS among motorcyclists in Lwamata town council Kiboga district is high which was significantly associated with number of partners, that is, having more than one partner increases the chances of getting HIV/AIDS.

RECOMMENDATION

- Motorcyclists should be educated on the benefits of having one sexual partner, using condoms always, and abstaining if they can, in order to reduce the chances of getting HIV/AIDS by having more than one partner.
- The government and potential health workers should consider availing programs to slow down HIV/AIDS among the youth aged 18-35 years such as seminars, radio/TV shows, and WhatsApp groups, among others.
- Academicians, researchers, and organizations should carry out more studies related to the incidence of HIV/AIDS among youth aged 18-35 years.

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