Original Article

Factors Associated with Knowledge and Attitudes of HIV Patients towards HIV-Based Services at Kibagabaga District Hospital

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Abstract

Background
HIV is still a significant global public health issue. World health organization (WHO) recommends that people infected with HIV should initiate HIV-based services as early as possible. The aim of this study was to assess the knowledge and attitude levels of HIV patients towards HIV-based services and associated factors.

Methods
A cross-sectional study was conducted on 274 HIV patients obtaining HIV-based services at Kibagabaga Hospital. Descriptive analysis, bivariate and logistic regression analysis were performed using SPSS version 21. P-value <0.05 was declared as significant.

Results
The majority of respondents were female 158 (57.7%) and 107 (39.1%) were aged 50 years old and more. Analysis revealed that 86.1% had good knowledge on HIV-based services and 81% exhibited positive attitudes. Respondents aged 40-49 years (AOR: 11.59; 95% CI: 1.560 - 86.063), aged 50 years (AOR: 16.44; 95% CI: 2.150 - 125.653), Urban (AOR: 7.05; 95% CI: 1.999 - 24.88) and engaged for more than 5 years (AOR: 13.29; 95% CI: 1.694 - 104.182) were more likely to exhibit good knowledge towards HIV-based services.

Conclusion
The study revealed favorable knowledge and attitudes towards HIV-based services, However, improved awareness is needed to improve uptake in rural communities.
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Keywords: Knowledge, Attitudes, HIV-based services, Rwanda

Introduction

The human immune deficiency virus (HIV), is a chronic virus that impairs the immune system and can cause acquired immune deficiency syndromes (AIDS) in those who have it. HIV has become a global health problem that can affects everyone .[1]
According to the World Health Organization (WHO), 79.3 million people have acquired HIV since the epidemic's start, and 36.3 million have died from it. At the end of 2020, there were 37.7 million persons living with HIV worldwide.[2] Even though the impact of the epidemic continues to differ greatly between different nations and areas, an estimated 0.7% of adults in the world between the ages of 15 and 49 are HIV positive.[3]
In Africa, 25.7 million people are living with HIV and around 1.1 million people are infected by every year.[4] Rwanda has a 370,000 HIV positive population equivalent to 3% of the general population, the prevalence, however, is higher in urban areas compared to rural areas, the city of Kigali has a 6% HIV prevalence compared to a 2 % prevalence in rural regions of the country.[5]

The studies in other settings have shown that overall high knowledge levels towards HIV-based services and these include knowing the name of antiretroviral therapy (ART), understanding the importance of timing and food intake when taking ART, and awareness of HIV prevention methods.[6] Attitudes towards HIV-based services have generally been positive, but there are also negative perceptions and misconceptions. Some patients believe that other treatment options are more effective than ART, and there is a perception of shame associated with using ART. These attitudes may stem from social stigma surrounding HIV and its treatment.[7]

Various factors are associated with knowledge and attitudes towards HIV-based services among HIV patients. Socio-demographic characteristics, such as education, occupation, and distance to health facilities, influence knowledge levels. Attitudes, including beliefs about the importance of HIV-based services, perception of side effects, conviction to continue using the services, and feelings of shame, also play a significant role.[8]
Different research conducted about HIV in Rwanda showed that moral acceptance of HIV-based services is part of their daily life and this is mainly because of different efforts conducted by the government of Rwanda in collaboration with other stakeholders to provide necessary services such as HIV-based services to different communities that are affected in various regions of the country.[9] Therefore, assessing the knowledge and attitude of HIV patients toward HIV-based services would fill a gap that is still available to develop new strategies in the provision of HIV-based services.

Methods and Materials

Study design

The study applied a cross-sectional design to assess the knowledge levels and attitudes of HIV patients towards HIV-based services from July to August 2023.
Study population and sample
The target population for this study were 866 HIV patients receiving HIV-based services at Kibagabaga hospital. Yamane, Taro formula which is better for sample size calculation when the Population is known was used to calculate the sample size required for this study.[10]
The formula is given by:

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

Where:
N: The population size (866 HIV Patients).
n: is the sample size to be determined
e: is the marginal of error (0.05)
Therefore, the sample size was given by:

$$n = \frac{866}{1 + 866(0.05^2)} = 274$$

From the formula above, the sample size is equal to 274 HIV patients that were selected to participate in the study.

Data collection instrument and procedures

Data were collected using a structured questionnaire, the interviewer-administered questionnaire was adapted from a previously validated KAP questionnaire in related reviewed questionnaires.[11] It consisted of three main sections. The first section comprised of demographic characteristics of respondents. The second section contained questions with responses being "Yes" and" No", which were covering questions related to knowledge on HIV-based services. The third section contained Likert scale questions with responses being "strongly agree", disagree", "agree", "strongly disagree" consisted of questions on attitudes of respondents regarding the HIV-based services.

Data analysis

The raw data were entered, cleaned and analyzed using Statistical Package for Social Science (SPSS) version 21. The descriptive analysis was performed to understand the socio-demographic characteristics of respondents, knowledge level and attitudes towards HIV-based services. The knowledge level was assessed by adding cumulative scores 1=" Yes" and 0=" No", a respondent was expected to correctly answer more than a half of questions, a participant who was able to answer at least 50% of the statements correctly was classified as having good knowledge. The Likert scale measurement was used to assess the attitudes of HIV the participants regarding HIV-based services (1: Strongly disagree, 2: Disagree, 3: Neutral, 4: Agree and 5: Strongly Agree), the mean and standard deviations were calculated from scores to assess attitudes level. To identify the factors associated with knowledge of HIV-based services among HIV patients, the logistic regression, crude odds ratio at bivariate level and adjusted odds Ratio at multivariate level with95% confidence intervals were generated with p-value<0.05.

Ethical consideration

Mount Kenya University through School of public health issued an ethical approval (Letter number: MKU/ETHICS/28/8/2023(9)) and approval letter was obtained from Kibagabaga district hospital. Informed consents were signed by respondents before conducting the research.

Results

Socio-demographic characteristics of HIV Patients

The study was conducted on 274 HIV patients. The age distribution revealed a diverse representation, with the majority falling in the 40-49 age group 94 (34.3%) and 50 and above age group 107(39.1%). Notably, a smaller proportion of respondents are aged less than 30 (11.7%). Regarding gender, the sample is relatively balanced, comprising 158 (57.7%) females and 116 (42.3%) males. In terms of education level, a significant majority of respondents have no formal education 178 (65%), while 79 (28.8%) have completed primary education, and 17 (6.2%) have attained a secondary education level.

The UBUDEHE category distribution indicates that the majority fall into categories II 138 (50.4%) and III 100 (36.5%), with a smaller representation in categories I 36 (13.1%). In the occupational context, a notable portion of respondents are unemployed 122 (44.5%), followed by self-employed individuals 120 (43.8%) and students 18 (6.6%). Examining the household characteristics, a higher proportion of households are headed by males 162 (59.1%), with the majority of respondents having a relationship with the household head as husbands 230 (83.9%). The religious composition reveals a predominantly Protestant affiliation 151 (55.1%), followed by Catholics 114 (41.6%) with no religious affiliation 3 (1.1%).

In terms of residence, the majority of respondents reside in urban areas (92.3).

Table 1. Socio-demographic characteristics of HIV patients

Characteristics	Frequency (N=274)	Percent (%)
Age (Years)		
Less than 30	32	11.7
30-39	41	15
40-49	94	34.3
50 and above	107	39.1
Gender		
Male	116	42.3
Female	158	57.7
Education level		
No Education	178	65
Primary	79	28.8
Secondary	17	6.2
UBUDEHE Category		
Category 1	36	13.1
Category 2	138	50.4
Category 3	100	36.5
Occupation		
Unemployed	122	44.5
Student	18	6.6
Self-employed	120	43.8
Servant	14	5.1
Gender of Household Head		
Male	162	59.1
Female	112	40.9
Relationship with Household head		
Spouse	230	83.9
Brother/Sister	19	6.9
Grand-parent & cousins	25	9.1
Religion		
No religion	3	1.1
Protestants	151	55.1
Catholic	114	41.6
Muslim	6	2.2
Residence		
Rural	21	7.7
Urban	253	92.3
Marital Status		
Never in onion	86	31.4
Married	131	47.8
Ever married	57	20.8
Have health insurance		
Yes	245	89.4
No	29	10.6
Duration on HIV-based services (years)		
Less than 1 year	21	7.6
1 year - 3 years	44	16.1
3years - 5 years	36	13.1
More than 5 years	173	63.1
Distance from Home to Health facility		
0-1 Kilometer	76	27.7
2-3 Kilometers	105	38.3
4kms and more	93	34

Source: Primary data, 2023

Marital status is diverse, with a substantial number of respondents being married (44.2%), followed by those who have never been in union (31.4%). The overwhelming majority of respondents have health insurance coverage 245 (89.4%). Regarding the duration of engagement with HIV-based services, a significant portion of respondents have been utilizing these services for more than 5 years 173 (63.1%), followed by 1 year - 3 years (44 (16.1%).Finally, the distance from home to the health facility varies, with the highest percentage of respondents residing at a medium distance (2-3 kilometers, 105, 38.3%)(Table 1).

The knowledge level towards HIV-based services among HIV patients at Kibagabaga hospital

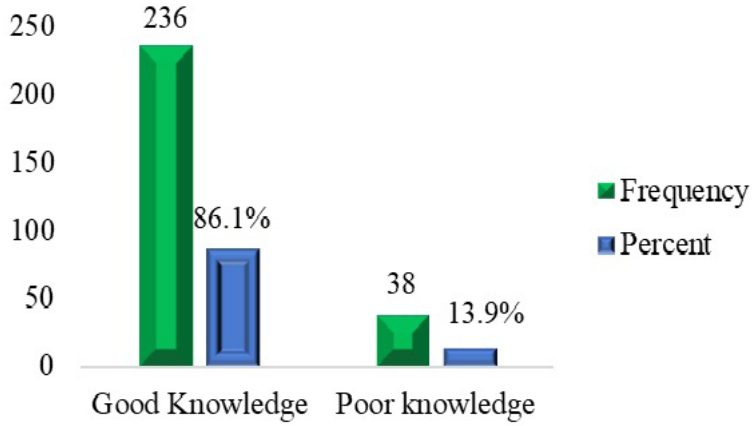
The participants' knowledge regarding HIV-based services, with each statement evaluated for the proportion of respondents who answered "Yes" or "No.", to uncover the depth of understanding and awareness among participants regarding key aspects of HIV-based services. The results (Table 2) revealed that approximately 110 (40.1%) of respondents correctly identified antiretroviral drugs as antivirals, while 59.9% did not. This suggests a moderate level of awareness, indicates some variations in responses. A substantial majority 258 (94.2%) correctly acknowledged the presence of triple types of drugs in ARV combinations, while only 16 (5.8%) responded otherwise. Regarding the understanding of HIV-based services as lifelong treatment, participants demonstrated a well-established consensus, with 269 (98.2%) correctly recognizing this fact, and only 5 (1.8%) holding a contrary view. For the awareness of potential side-effects of taking ARV drugs, the table reveals that only 33 (12%) correctly identified these side-effects, while 241 (88%) did not. Concerning the importance of consulting physicians to manage ARV drug side-effects, participants displayed a strong consensus, with 267 (97.4%) correctly acknowledging the need for medical consultation. Lastly, in defining treatment adherence, participants demonstrated near-universal consensus, with 273 (99.6%) correctly defining treatment adherence.

Table 2. The Knowledge level of HIV Patients towards HIV-based services

Statement about knowledge regarding exclusive breastfeeding	Yes		No	
	Frequency (N)	Percent (%)	Frequency (N)	Percent (%)
Antiretroviral drugs are Antivirals	110	(40.1)	164	(59.9)
There are triple types of drugs in the ARV combinations	258	(94.2)	16	(5.8)
HIV-based services are lifelong treatment.	269	(98.2)	5	(1.8)
Taking ARV drugs has side-effects such as Rash, headache/dizziness, nausea/ vomiting, diarrhea, stomachache, anemia, hepato-renal toxicity, etc.	33	(12)	241	(88.0)
To manage the side-effects of taking ARVs need consultation with physicians.	267	(97.4)	7	(2.6)
Treatment adherence is taking the right medicine, right dose, at the right time, in the right way, and re-examine on time	273	(99.6)	1	(0.4)

Source: Primary data, 2023

Overall knowledge level of participants regarding the HIV-based services



The overall knowledge levels among participants regarding HIV-based services reveals a predominantly positive picture, with a substantial 236 (86.1%) displaying good knowledge. This high percentage underscores a robust understanding of key aspects related to HIV care within the majority of respondents (Figure 1).

Figure 1. Overall knowledge level of HIV Patients towards HIV-based services

Source: Primary data, 2023

The attitudes' level towards HIV-based services among HIV patients at Kibagabaga hospital

The results (Table 3) showed that the majority of participants 157 (57.3%) strongly disagreed (mean attitude score = 1.83), indicating a prevailing negative attitude towards this notion. The standard deviation (SD) of 1.276 suggests some variability in responses but still leans towards a negative stance.

Participants displayed a high level of confidence in the effectiveness of ART, with 226 (82.5%) expressing strong agreement (mean attitude score = 4.71). Similarly, a significant proportion 226 (82.5%) strongly disagreed with the idea that ART does more harm than good (mean attitude score = 4.15). The commitment to continue ART was remarkably high, with 256 (93.4%) strongly agreeing (mean attitude score = 4.93), demonstrating an overwhelmingly positive attitude towards medication adherence.

Regarding immediate medication initiation upon testing positive for HIV, a majority 238 (86.9%) expressed strong agreement (mean attitude score = 4.84). On the topic of feeling ashamed to take ART, the majority 181 (66.1%) strongly disagreed (mean attitude score = 1.53. Concerning the timing of medication intake, most participants 162 (59.1%) strongly disagreed with the idea that HIV patients should only take antiretroviral medication when feeling ill (mean attitude score = 1.64), suggesting a generally negative attitude towards this statement.

In terms of HIV prevention, a substantial majority 238 (86.9%) strongly agreed that HIV patients should use condoms during sexual intercourse with uninfected individuals (mean attitude score = 4.82), demonstrating broad support for this preventive measure. Lastly, participants displayed strong agreement 242 (88.2%) regarding the benefits of knowledge provided during HIV-based services at health facilities (mean attitude score = 4.8), emphasizing a positive attitude towards the perceived advantages of such services.

Table 3. The attitudes of HIV Patients towards HIV-based services

Statement about attitudes towards HIV-based services	Strongly agree N (%)	Agree N(%)	Neutral N (%)	Disagree N (%)	Strongly disagree N (%)	Mean	SD
I believe that there are other more effective methods to treat HIV than ART	28 (10.2)	8 (2.9)	11 (4.0)	70 (25.5)	157 (57.3)	1.83	1.276
Are you convinced of the effectiveness of ART?	226 (82.5)	31 (11.3)	7 (2.6)	6 (2.2)	4 (1.5)	4.71	0.752
Do you think that taking ART does more harm than good?	226 (82.5)	31 (11.3)	7 (2.6)	6 (2.2)	4 (1.5)	4.15	1.349
Are you convinced that you should continue your ART?	256 (93.4)	18 (6.6)	0 (0.0)	0 (0.0)	0 (0.0)	4.93	0.248
People should start medication immediately when they test positive for HIV	238 (86.9)	31 (11.3)	3 (1.1)	2 (0.7)	0 (0.0)	4.84	0.446
Do you feel ashamed to take your ART?	15 (5.5)	2 (0.7)	3 (1.1)	73 (26.6)	181 (66.1)	1.53	0.988
HIV patients should take their antiretroviral medication when they feel ill only	15 (5.5)	8 (2.9)	1 (0.4)	88 (32.1)	162 (59.1)	1.64	1.037
HIV patients should be using condoms during sexual intercourse with uninfected person	238 (86.9)	32 (11.7)	0 (0.0)	0 (0.0)	4 (1.5)	4.82	0.566
HIV patients benefit from the knowledge that is provided to them when given HIV-based services at health facilities	242 (88.2)	23 (8.4)	2 (0.7)	0 (0.0)	7 (2.6)	4.8	0.695

Source: Primary data, 2023

Multivariable analysis of factors associated with knowledge level towards HIV-based services

Table 4. The factors associated with knowledge level of HIV Patients towards HIV-based services

Characteristics	Total (N=274)	Knowledge towards HIV-based services					
		Good Knowledge N (%)	Poor Knowledge N (%)	COR, 95%CI	P-Value	AOR 95%CI	P-Value
Age (Years)							
Less than 30	32 (11.7)	18 (7.6)	14 (36.8)	1		1	
30-39	41 (15)	29 (12.3)	12 (31.6)	8.3 [3.8 - 14.7]	0.083	7.6 [0.9 - 64.4]	0.061
40-49	94 (34.3)	87 (36.9)	7 (18.4)	14.4 [10.2 - 117.9]	0.033	11.5 [1.5 - 86.0]	0.017
50 and above	107 (39.1)	102 (43.2)	5 (13.2)	17.4 [1.9 - 142.6]	<0.001	16.4 [2.1 - 125.6]	0.007
Gender of respondent							
Male	116 (42.3)	100 (42.4)	16 (42.1)	1		1	
Female	158 (57.7)	136 (57.6)	22 (57.9)	0.9 [0.6 - 1.4]	0.151	0.7 [0.4 - 1.2]	0.132
Education level							
No Education	178 (65)	156 (66.1)	22 (57.9)	1		1	
Primary	79 (28.8)	68 (28.8)	11 (28.9)	1.2 [0.4 - 2.6]	0.128	0.8 [0.3 - 2.4]	0.114
Secondary	17 (6.2)	12 (5.1)	5 (13.2)	1.6 [0.5 - 2.7]	0.091	1.4 [0.3 - 2.1]	0.032
UBUDEHE Category							
Category 1	36 (13.1)	34 (14.4)	2 (5.3)	1			
Category 2	138 (50.4)	121 (51.3)	17 (44.7)	1.2 [0.5 - 1.9]	0.082	1.1 [0.6 - 1.6]	0.067
Category 3	100 (36.5)	80 (34.3)	19 (50)	2.6 [0.7 - 4.9]	0.216	2.2 [0.3 - 4.7]	0.181
Occupation							
Unemployed	122 (44.5)	106 (44.9)	16 (42.1)	1		1	
Student	18 (6.6)	13 (5.5)	5 (13.2)	1.1 [0.3 - 3.8]	0.164	0.9 [0.4 - 2.7]	0.084
Self-employed	120 (43.8)	105 (44.5)	15 (39.5)	1.3 [0.8 - 4.3]	0.271	1.1 [0.4 - 3.4]	0.152
Servant	14 (5.1)	12 (5.1)	2 (5.3)	2.7 [0.4 - 7.1]	0.087	1.9 [0.6 - 5.1]	0.091
Gender of Household Head							
Male	162 (59.1)	135 (57.2)	27 (71.1)	1			
Female	112 (40.9)	101 (42.8)	11 (28.9)	0.7 [0.2 - 2.7]	0.218	0.8 [0.6 - 2.5]	0.103
Relationship with Household head							
Spouse	230 (83.9)	201 (85.2)	29 (76.3)	1		1	
Brother/Sister	19 (6.9)	13 (5.5)	6 (15.8)	6. 2 [0.2 - 71.1]	0.421	4.2 [0.3 - 66.9]	0.313
Grand-parent & cousins	25 (9.1)	22 (9.3)	3 (7.9)	1.3 [1.7 - 55.8]	0.993	1.1 [0.0 - 41.6]	0.963
Religion							
No religion	3 (1.1)	2 (0.8)	1 (2.6)	1		1	
Protestant (ADEPR,EMLR,EAR,EPR,etc)	151 (55.1)	134 (56.8)	17 (44.7)	11.7 [0.1 - 42.8]	0.805	10.4 [0.0 - 34.1]	0.674
Catholic	114 (41.6)	96 (40.7)	18 (47.4)	31.6 [0.7 - 82.6]	0.176	11.5 [0.2 - 32.1]	0.104
Muslim	6 (2.2)	4 (1.7)	2 (5.3)				
Residence							
Rural	21 (7.7)	8 (3.4)	13 (34.2)	1		1	
Urban	253 (92.3)	228 (96.6)	25 (65.8)	43.93	<0.001	7.1 [1.9 - 24.9]	0.002
Marital Status							
Never in onion	86 (31.4)	70 (29.7)	16 (42.1)	1		1	
Married	131 (47.8)	105 (44.5)	16 (42.1)	3.8 [0.3 - 9.4]	0.067	3.5 [0.6 - 7.3]	0.053
Ever married	57 (20.8)	52 (22.03)	5 (13.2)	2.8 [0.8 - 11.8]	0.132	2.3 [0.9 - 8.6]	0.081
Have health insurance							
Yes	245 (89.4)	211 (89.4)	34 (89.5)	1		1	
No	29 (10.6)	25 (10.6)	4 (10.5)	0.3 [0.1 - 2.8]	0.061	0.2 [0.0 - 2.5]	0.133
Duration on HIV-based services (months)							
less than 1 year	21 (7.6)	9 (3.8)	12 (31.6)	1		1	
1 year - 3 years	44 (16.1)	35 (14.8)	9 (23.7)	13.5 [0.2 - 44.9]	0.077	7.1 [0.9 - 51.1]	0.052
3years - 5 years	36 (13.1)	30 (12.7)	6 (15.8)	7.3 [0.4 - 38.2]	0.083	5.6 [0.7 - 41.2]	0.091
More than 5 years	173 (63.1)	162 (68.6)	11 (28.9)	18.3 [1.6 - 109.3]	<0.001	13.3 [1.7 - 104.2]	0.014
Distance from Home to Health facility							
0-1 Kilometers	76 (27.7)	66 (28)	10 (26.3)	1		1	
2-3 Kilometers	105 (38.3)	90 (38.1)	15 (39.5)	0.7 [0.3 - 4.4]	0.124	0.8 [0.2 - 3.9]	0.087
4km and more	93 (34.0)	80 (33.9)	13 (34.3)	1.2 [0.4 - 5.3]	0.291	1.1 [0.2 - 4.2]	0.328

Source: Primary data, 2023

The logistic regression analysis revealed significant associations between certain demographic factors and the odds of having good knowledge levels among HIV patients towards HIV-based services. The results (Table 4) revealed that 87 (36.9%) individuals aged 40-49 and 102 (43.2%) of individuals aged 50 and above showed a good knowledge 102 (43.2%) where those 40-50 had 11.5 odds of possessing good knowledge compared to those below 30 (AOR:11.59, 95% CI: 1.560-86.063, p = 0.017) while individuals above 50 had 16.4 odds (AOR:16.44,95% CI: 2.150- 125.653, p = 0.007).

In terms of residence, the majority of individuals 228 (96.6%) from urban displayed good knowledge, moreover, urban residents displayed a notable increase in the odds of possessing good knowledge compared to their rural counterparts, with an odds ratio of (AOR: 7.05, 95% CI: 1.999-24.88, p = 0.002). The individuals who stayed longer (more than 5 years) in the program demonstrated good proportion of knowledge towards HIV-based services 162 (68.6%), these exhibited a significant increase in the odds of having good knowledge, with an odds ratio of (AOR:13.29, 95% CI: 1.694, 104.182, p = 0.014).

Other variables such as gender, ubudehe categories, occupation, gender of household head, relationship with household head, religion, marital status, having insurance and distance from home to health facility did not show any significance association with knowledge to HIV-based services. However, the majority of females 136 (57.6%), individuals from UBUDEHE category 2, 121 (51.3%), unemployed individuals 106 (44.9%), male-headed households 135(57.2%), respondents who were spouse to household head 201 (85.2%), participants from protestants religion 134 (56.8%), married individuals 105 (44.5%), individuals with insurance 211 (89.4%) and those who travel 2-3 kilometers to health facility 90 (38.1%) displayed good knowledge towards HIV-based services.

Discussion

This study sought to assess the knowledge and attitudes of 274 HIV patients as well as the associated factors towards HIV-based services. In this study, a substantial 86.1% of participants displayed good knowledge regarding HIV-based services. In contrast, [12] reported that 61.6% of their participants had good knowledge about HIV/AIDS. This discrepancy may be attributed to the different focus areas of the two studies, with our research specifically targeting knowledge related to HIV-based services.

Our study found that 86.1% of HIV patients exhibited good knowledge, while [13] identified deficits in understanding specific aspects of HIV transmission and prevention. Despite these knowledge gaps, both studies indicate a predominantly positive attitude towards HIV/AIDS. In the current study, 81% of HIV patients displayed a positive attitude, while above paper reported that approximately two-thirds of study exhibited a positive attitude towards people living with HIV/AIDS (PLWHA).[13]

In comparison with the study conducted in an emergency department in South Africa, both studies share a common focus on the impact of attitudes and knowledge on healthcare-related decisions, specifically HIV testing acceptance. While our study concentrates on HIV patients' knowledge and attitudes towards HIV-based services, the other one investigates the influence of attitudes, stigma, and confidentiality beliefs on HIV testing acceptance among emergency department patients. Notably, both studies highlight the significance of attitudes in shaping healthcare-related behavior. In our research, 86.1% of participants displayed good knowledge about HIV-based services. [14]

Additionally, residence location is another factor consistently associated with knowledge. Urban residents in our study exhibited significantly higher odds of having good knowledge (AOR: 7.052, 95% CI: 1.999 – 24.88, p < 0.001), which is in line with research in Jordan where urban participants demonstrated better knowledge and attitudes toward HIV/AIDS. This suggests that urban areas tend to have better access to information and resources related to HIV care.[13]

Age also emerges as an influential factor. In our study, individuals aged 40-50 years had significantly higher odds of having good knowledge (AOR: 11.59, 95% CI: 1.560 – 86.063, p = 0.017), and those aged above 50 years showed a trend toward better knowledge (AOR: 16.44, 95% CI: 2.150 – 125.65, p = 0.007).

This is consistent with a study conducted in South Africa which found that older individuals were more likely to accept HIV testing, possibly indicating greater knowledge and awareness among older populations.[14]

Study limitation

The study had certain limitations, primarily due to the fact that the sample in the research was chosen from just one district and in Kibagabaga district hospital, which makes it difficult to generalize the findings to all HIV positive people receiving HIV-based services in other health facilities in Rwanda. The wider the confidence intervals in the findings indicate that the sample size was slightly small for the study.

Conclusion

This study was conducted at Kibagabaga hospital and found that 86.1% demonstrated good knowledge and 81% exhibited positive attitudes towards HIV-based services. Participants aged more than 30 years, having secondary education, coming from urban areas and receiving HIV-based services more than 5 years increased the odds of good knowledge to HIV-based services.

While the findings are promising, targeted awareness campaigns, especially in rural areas and among younger populations, are essential. The study emphasizes the need for sustained efforts to enhance awareness, service uptake, and early initiation of HIV-based services to mitigate the ongoing impact of the virus.

Authors' contribution

The study was conceptualized by APK, designed the methodology, research tools and contributed to the manuscript writing. CN and AKA provided supervision for the study, made significant contributions to the research protocol while TK did data analysis and contributed to Manuscript writing.

Conflict of interest declaration

The study's authors state that they had no relationships or affiliations that would have created a conflict of interest. They came to an agreement to submit the study to the current journal, accepting full accountability for all elements of the work, and giving their final go-ahead for the report to be published.

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