

Original Research Article

Towards UNAIDS 95-95-95: HIV knowledge and associated factors among young adults of 18 to 24 years age group in Northern Namibia

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ABSTRACT

Background: Young adults have been worst affected by the HIV epidemic, and in many countries, they contribute about 50% of new infections. The infections are driven by lack of HIV knowledge, which contributes to poor HIV testing uptake among the young adults. This study aimed to assess the level of HIV knowledge among young adults between the ages of 18 and 24 years who receive medical services at a private hospital in northern Namibia.

Methods: A single centre, hospital based, analytic cross-sectional study design was used for the study. 84 participants were selected using a simple random sampling method. A structured self-administered questionnaire adopted from the HIV-KQ-45 questionnaire was used for data collection. Statistical analysis included the use of Chi-square tests and logistic regression.

Results: The findings of the study indicated that respondents who had good HIV knowledge were 58%. Chi-square tests showed there were statistically significant associations between residence and the HIV knowledge of participants, and between education level and HIV knowledge of participants ($p < 0.01$). Logistic regression revealed that participants living in rural areas were statistically significantly less likely to have good HIV knowledge, OR = 0.24, 95% CI (0.10-0.61).

Conclusion: The low level of good HIV knowledge among young adults in northern Namibia is concerning, considering that the HIV/AIDS epidemic has been around for more than four decades. Our findings underscore the need for tailored HIV knowledge delivery strategies, especially for rural communities.

Keywords: HIV knowledge, Young adults, Namibia

INTRODUCTION

Since the first cases of HIV were diagnosed in 1981, 36.3 million people have died from illnesses related to HIV globally. Sub-Saharan Africa had the highest number of PLHIV in the world in 2021 at 20.6 million. The epidemic is driven largely by heterosexual intercourse. Young adults have been worst affected by the HIV epidemic, and in many countries, they contribute about

50% of new infections.¹ During young adulthood and adolescent ages, strategies to promote health attitudes and demeanour should be enforced to protect them from HIV as they are at an important phase of their social evolution. Since the beginning of the HIV epidemic, a number of strategies have been devised to reduce its transmission in the population globally. For these strategies to work, people should have enough knowledge about HIV. Knowledge about HIV should include how it is

transmitted, prevention measures and misconceptions that society might have about the disease. Increased HIV knowledge among young adults has been associated with reduced risky sexual behaviour, increased HIV testing and increased uptake of HIV treatment.²⁻⁴ There are significant gaps among young people in terms of reaching the 95-95-95 targets set by UNAIDS for the year 2025. Combined results from a population-based HIV survey done in 2016 to measure HIV incidence in Malawi, Zambia and Zimbabwe revealed that 46% of young people aged between 15 and 24 years were aware of their HIV status.

Among those who were aware of their status, 82% were on antiretroviral therapy, and of these, 79% had viral suppression. The results of older adults in these countries were much better as 78% knew their status, 90% of these were on antiretroviral therapy and of those on treatment, 90% were virally suppressed.⁵ Namibia is one of the countries in Sub-Saharan Africa that has been severely affected by the HIV epidemic. For both children and adults in the country, the main causes of death are AIDS-related illnesses. About 2,30,000 people were living with HIV while 3,900 died as a result of AIDS-related illnesses in Namibia in 2015.² As of 2020, there were about 2,10,000 PLHIV in Namibia. The prevalence rate of HIV among young adults aged between 15 and 49 years was 11.6% and there were 5,500 new infections in the same year. The prevalence of HIV in Namibia among young females was 5.1%, while among young males was 2.6%. This disparity has been attributed to early sexual debut and intergenerational relationships among young females. About 58% of young adults aged between 15 and 24 years in Namibia were reported to have comprehensive knowledge on HIV prevention in 2013.¹ Young adults are believed to be at an increased risk of getting infected with HIV due to a number of unhealthy behaviours. These behaviours include inconsistent use of condoms, abuse of alcohol and drugs, having multiple sexual partners, being involved in intergenerational sex and transactional sex, and having an early sexual debut.⁶

According to the Global AIDS Monitoring (GAM) indicators, comprehensive and accurate knowledge of HIV is defined as the percentage of young people aged between 15 and 24 years who can accurately recognise ways of avoiding sexual transmission of HIV and reject major misconceptions about HIV transmission.⁷ Given that young people are at a higher risk of contracting HIV as a result of lack of knowledge and engaging in risky sexual behaviour, increasing their HIV knowledge can be an effective intervention in trying to reduce HIV transmission. Furthermore, since young adulthood is an important stage in social development, it should be used to promote healthy attitudes and behaviours.⁸

Although knowledge on its own is less likely to change risky sexual behaviour, there is growing evidence of an association between increased comprehensive HIV knowledge and reduction in HIV incidence and

prevalence in regions that have high HIV prevalence.⁹ Some of the factors associated with accurate HIV knowledge among young adults include their educational status, socioeconomic status, access to mass media, employment status, age, gender, and presence of family members living with HIV and whether they live in a rural area or an urban area.¹⁰ Several studies have been carried out globally to determine the sources of HIV knowledge among young adults. A study done in India among adolescents revealed that 85% got HIV information through television, 39.5% got it through radio, 47.4% through the newspapers and 39.5% from friends. About 6% revealed that they got their information from street plays and 11.2% from non-governmental organisations.¹¹ Another study also done in India revealed that the most common source of HIV knowledge among adolescents was through television, with 91.2% of the participants reporting that they got their information from the source. Other sources included the radio at 54.7%, newspapers at 18.2%, health care workers at 1.5% and friends at 26.5%.¹² A number of strategies have been suggested to improve HIV knowledge among young adults. Experts agree that activities to improve HIV knowledge among adolescents and young adults should take place in academic institutions and organisations that serve the youth. These activities should concentrate on improving resilience and decision making. The education imparted to the young adults should be evidence based and should include aspects of HIV transmission, testing protocols, prevention strategies, and treatment and care of those living with HIV.¹³

METHODS

Study area and study period

The study was conducted at a private hospital in northern Namibia. The hospital was established in 2008 and it has since grown to become one of the biggest private facilities in the region. The hospital attends to at least five hundred young adults per month.

Study design and population

A cross-sectional survey was used in this study. The target population included all patients between 18 and 24 years of age who receive medical services at a private hospital in northern Namibia.

Sample size

The sample size was determined using Yamane's formula;

$$n = N / (1 + e2N)$$

Where n is the sample size, N is the population size and e is the margin of error. The margin of error used for the study was 5% because the researcher wanted a confidence

level of 95%. For this study, the population size, N=500, resulted in the sample size, n=84.

Inclusion and exclusion criteria

Participants who were included in the study were young adults between the ages of 18 years and 24 years who were patients at the private hospital during April to September 2019. Young adults trained in a health-related field were excluded from the study.

Sampling method

A simple random sampling method was used to select the participants through the use of Microsoft excel. This method was used to ensure that the selected sample was representative of the study population.

Data collection

A self-administered questionnaire was chosen as the data collection instrument. It was adopted from the HIV knowledge questionnaire (HIV-KQ-45) which was developed by Carey, Morrison-Beedy and Johnson in 1997.¹⁴ Questions were administered in both English and Oshiwambo. The questionnaire consisted of different sections and the sections had questions on socio-demographic characteristics of the participants and HIV knowledge statements.

Reliability

A test-retest method was used to determine the reliability of the questionnaire. The questionnaire was administered on two different occasions to the same participants during the pilot study. A test-retest reliability coefficient of 0.83 was obtained, and this coefficient shows that the questionnaire had good reliability since a reliable questionnaire should have a coefficient which is between 0.80 and 0.90.

Validity

Content validity was ensured by consulting experts in the field of HIV. Construct validity was also ensured by comparing the scores of the study's questionnaire with those of an established HIV and AIDS knowledge questionnaire, HIV-KQ-45.

Data analysis

Pre-coded responses were entered into SPSS version 26 for windows. One-sample non-parametric tests were used to determine if the frequencies of the different responses to each statement given by the participants were statistically significant. Overall HIV knowledge of participants scores of the ten HIV knowledge responses. HIV knowledge was broadly classified into three groups. The three groups were poor, average, and good. Respondents who scored 90% and above were regarded

as having good HIV knowledge, 70% but below 90% as having average HIV knowledge, and below 70% as having poor HIV knowledge. Chi-square tests and logistic regression were used to assess the associations between HIV knowledge and the socio-demographic characteristics of the participants. Selection of reference groups used in logistic regression was informed by information in the literature review. Confidence intervals at 95% and Chi-square test p values were used to determine the significance of the findings.

RESULTS

Socio-demographic characteristics

A total of 84 selected young adults participated in the study. The majority of the participants (n=40; 47.6%), were in the >20-22 years age group, while the least number of participants (n=20; 23.8%) were in the 18-20 years age group. There were more male participants (n=44; 52.4%) than female participants (n=40; 47.6%). The majority of the participants (n=144; 57.6%) had secondary education while a few participants (n=14; 16.7%) had primary education. The majority of the participants were single (n=67; 79.8%) while few were divorced (n=3; 3.5%). The majority of the participants (n=50; 59.5%), stayed in urban areas, while fewer (n=34; 40.5%), stayed in rural areas. More details are presented in (Table 1).

Table 1: Frequency distribution of socio-demographic characteristics.

Characteristic	N	%
Age (years)		
18-20	20	23.8
>20-22	40	47.6
>22-24	24	28.6
Sex		
Male	44	52.4
Female	40	47.6
Marital status		
Single	67	79.8
Married	14	16.7
Divorced	3	3.5
Education		
Primary	14	16.7
Secondary	50	59.5
Tertiary	20	23.8
Residence		
Urban	50	59.5
Rural	34	40.5

Participants' responses to HIV knowledge statements

Overall, all the ten statements had participants' responses that were statistically significantly different ($p < 0.01$). The majority of the participants gave correct responses to the ten statements. More details are presented in (Table 2).

Table 2: Frequency distribution of participants' responses to HIV knowledge statements.

Statement	Response	Total		One-sample Chi-square test		
		N	%	Test statistic	Degree of freedom	P value
HIV can be transmitted through mosquito bites.						
Strongly disagree		52	61.9	68.86	3	<0.01
Disagree		21	25.0			
Do not know		4	4.8			
Agree		7	8.3			
Strongly agree		0	0.0			
All HIV positive pregnant women will transmit the virus to their unborn babies						
Strongly disagree		50	59.5	56.67	3	<0.01
Disagree		18	21.5			
Do not know		9	10.7			
Agree		7	8.3			
Strongly agree		0	0.0			
HIV can be spread by kissing.						
Strongly disagree		38	45.2	58.02	4	<0.01
Disagree		27	32.1			
Do not know		14	16.7			
Agree		4	4.8			
Strongly agree		1	1.2			
HIV can be spread by sharing food or utensils with someone who is HIV positive						
Strongly disagree		52	61.9	103.74	4	<0.01
Disagree		20	23.7			
Do not know		5	6.0			
Agree		4	4.8			
Strongly agree		3	3.6			
Consistent use of condoms does not reduce chances of HIV transmission.						
Strongly disagree		46	54.7	94.10	4	<0.01
Disagree		29	34.5			
Do not know		5	6.0			
Agree		3	3.6			
Strongly agree		1	1.2			
There is a cure for HIV.						
Strongly disagree		49	58.3	91.36	4	<0.01
Disagree		22	26.2			
Do not know		6	7.1			
Agree		3	3.6			
Strongly agree		4	4.8			
Antibiotics reduce chances of HIV transmission.						
Strongly disagree		44	52.5	63.14	4	<0.01
Disagree		20	23.8			
Do not know		8	9.5			
Agree		6	7.1			
Strongly agree		6	7.1			
Having multiple sexual partners does not increase chances of HIV transmission.						
Strongly disagree		50	59.5	92.19	4	<0.01
Disagree		16	19.0			
Do not know		14	16.7			
Agree		2	2.4			
Strongly agree		2	2.4			

Continued.

Statement	N	%	Test statistic	Degree of freedom	P value
After contracting HIV, the HIV test becomes positive within a week.					
Strongly disagree	48	57.2	52.59	3	<0.01
Disagree	21	25.0			
Do not know	6	7.1			
Agree	9	10.7			
Strongly agree	0	0.0			
A woman who has anal sex with a man who is HIV positive will not get infected with HIV too.					
Strongly disagree	55	65.5	79.62	3	<0.01
Disagree	19	22.5			
Do not know	5	6.0			
Agree	5	6.0			
Strongly agree	0	0.0			

Frequency distribution of HIV knowledge levels of participants

The majority of the participants (n=49; 58.3%) had good HIV knowledge while few (n=17; 20.2%) had poor HIV knowledge. More details are presented in (Figure 1).

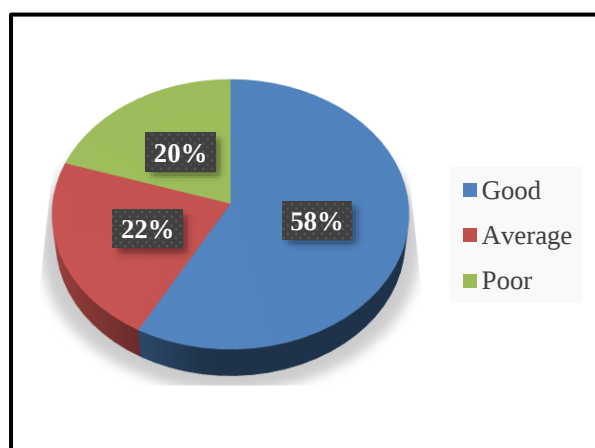


Figure 1: Frequency distribution of knowledge levels of participants.

Association between HIV knowledge levels and socio-demographic characteristics of participants

The Chi-square tests performed revealed there were statistically significant associations between residence and the knowledge level of participants regarding HIV, and between education level and HIV knowledge of participants ($p < 0.01$).

Participants living in rural areas were statistically significantly less likely to have good HIV knowledge, OR=0.24, 95% CI (0.10-0.61). This means that participants staying in rural areas were 76% less likely to have good HIV knowledge compared to those staying in urban areas. More details are presented in (Table 3).

DISCUSSION

The current study showed that the proportion of participants who thought mosquito bites can transmit HIV infection was much higher than that found in a study conducted in Cameroon, which was 23.3%.¹⁵ This may be attributed to the fact that HIV education programmes in Namibia are not correcting this misconception. There was less knowledge about the aspect of transmission of HIV from women to their unborn babies in this study compared to a study in South Africa which showed that 91% of the participants knew that not all HIV positive women can transmit the virus to their unborn babies.¹⁶

The proportion of participants who knew that HIV cannot be transmitted through kissing in this study was higher than that found in an earlier study done in Nigeria, which was 53.7%.¹⁷ This difference may be explained by the different information used in HIV prevention campaigns in the different settings.

A lower proportion of participants in this study knew that HIV cannot be transmitted through sharing food or utensils with people who are HIV positive compared to those who participated in a study conducted in South Africa, where it was found out that 88.1% knew that the virus could not be transmitted through sharing food or utensils with people who are HIV positive.¹⁶ Considering that most young adults in Namibia and South Africa have family members who are HIV positive, this may be common knowledge among them.

The current study revealed that most participants knew that condoms could prevent HIV transmission. This finding is consistent with a study conducted in Nigeria, which showed that 76.6% of participants knew the role of condoms in HIV prevention.¹⁷ The high level of knowledge about condoms may be attributed to the fact that condoms have been promoted as a means of reducing HIV since the epidemic started.

Table 3: Crude odds ratios by socio-demographic characteristics of participants.

Characteristics	Crude Odds ratios	95% CI*	Chi-square test summary		
			Test statistic	Degree of freedom	P value
Age (years)					
18-20	0.90	0.27-3.04	0.377	2	0.828
Above 20-22	0.73	0.26-2.06			
Above 22-24	Reference	Reference			
Sex					
Male	Reference	Reference	1.069	1	0.301
Female	0.63	0.26-1.51			
Marital status					
Single	0.51	0.16-1.62	1.317	1	0.251
Married and divorced	Reference	Reference			
Education					
Primary	0.94	0.30-3.01	19.782	2	<0.01
Secondary and tertiary	Reference	Reference			
Residence					
Rural area	0.24	0.10-0.61	9.493	1	<0.01
Urban area	Reference	Reference			

The current study revealed that few participants thought that there was a cure for HIV. The proportion of participants who thought there was a cure for HIV in the current study was lower than that found in a study done in Cameroon, which was 18.1%.¹⁵ The difference in the two studies may reflect the differences in the overall HIV knowledge between the two settings. The proportion of participants who knew that having multiple sexual partners increases chances of HIV transmission in this study was similar to that found in a study in Nigeria, which showed 74%.¹⁸ The high proportion of young adults who knew that having multiple partners increases chances of HIV transmission can be attributed to the fact that most HIV prevention programs being carried out in Namibia emphasise this aspect of HIV transmission.

The current study findings show that the proportion of participants who knew that HIV test does not become positive within a week after contracting the virus was higher than that of a study conducted in Nigeria, which was 23%.¹⁸ This may be attributed to the fact that HIV testing centres are easily available in Namibia, and this information is provided as part of pretest counselling.

The findings of the current study show that a higher proportion of participants knew that antibiotics do not reduce chances of HIV transmission compared to respondents in a study done in Nigeria, which revealed that only 59% of participants knew that antibiotics do not reduce the chances of HIV transmission.¹⁸ This difference might reflect the differences in knowledge about what antibiotics are in the different settings.

The findings of the current study show that there was greater knowledge about anal sex and HIV transmission among participants compared to a study conducted in Nigeria which found out that 57.1% of the study participants knew that women who have anal sex with

HIV positive men can also get infected with HIV.¹⁸ This shows that knowledge regarding women having anal sex and HIV transmission has been improving over the years, possibly because young adults have been opening up to discuss the issue. Anal sex was previously regarded as taboo because some traditional leaders and elderly people in Namibia regarded anal sex as an evil act which could result in punishment from God in the form of drought and animal diseases.¹⁹

The findings of the current study show that the proportion of participants who had good knowledge about HIV was higher than that found in a study conducted in Sub-Saharan Africa, which was 36%.⁷ The high level of HIV knowledge among the participants in this study may be attributed to a lot of donor-funded HIV prevention campaigns being carried out in Namibia.

This study showed that the level of HIV knowledge was associated with the residence and the educational level of the participants. These results concur with findings of a study conducted in Ghana.²⁰ These results can be explained by the fact that people who stay in towns are more exposed to different kinds of media. This results in them coming across correct information on HIV. Furthermore, people with higher educational levels are more likely to have good HIV knowledge since HIV is taught in schools and colleges.

Limitations

The study had several limitations. One of the limitations of the study was it was conducted at only one private hospital. This makes it impossible to generalise the results to all young adults receiving medical services at all private hospitals in northern Namibia. Furthermore, the study was not able to factor out external events like

training and media programs that might have influenced the HIV knowledge of participants in the study.

CONCLUSION

The current study revealed that the level of good HIV knowledge among participants was 58%. There were associations between HIV knowledge and the residence and educational level of the participants. Participants staying in rural areas were less likely to have good knowledge compared to those staying in urban areas. It is therefore important that health care workers discuss HIV with young adults when they attend to them, teachers and lecturers are trained on HIV so they can discuss HIV with students, and workshops on HIV are organised for young adults. There is a need for tailored HIV knowledge delivery strategies, especially for rural communities.

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