

KNOWLEDGE AND ATTITUDE REGARDING HIV/AIDS AMONG YOUTH IN URBAN SLUMS OF JORHAT, ASSAM: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: India bears the world's third-largest HIV burden, with an estimated 2.4 million people living with the virus. The Youth (15–24 years) remain particularly vulnerable due to biological, behavioural, and sociocultural factors. The Northeast, including Assam, continues to report higher prevalence rates, with urban slum populations being disproportionately affected. The present study aimed to assess the knowledge and attitudes regarding HIV/AIDS among youth residing in the urban slums of Jorhat, Assam, and to examine the factors associated with them. **Materials and Methods:** An observational cross-sectional study was conducted from April to September 2024 among 110 youth aged 15–24 years in the urban slums of Jorhat district, Assam. Participants were selected through a two-stage sampling method. Data were collected using a predesigned, pretested questionnaire. Knowledge and attitude scores were computed and categorized into levels for analysis. **Result:** Of the respondents, 31.8% demonstrated a high level of knowledge, 37.3% had a moderate level, and 30.9% reported a low level of knowledge regarding HIV/AIDS. Positive attitudes towards people living with HIV/AIDS (PLHIV) were observed in 70% of participants. Socioeconomic status showed a significant association with knowledge levels ($p=0.038$), while gender was significantly associated with attitudes towards PLHIV ($p=0.035$). A declining trend in attitudes was noted with decreasing knowledge levels. **Conclusion:** Knowledge on HIV transmission and prevention remains inadequate among youth in Jorhat's urban slums, with misconceptions persisting. However, positive attitudes towards PLHIV, especially among women, are encouraging. Targeted community-based interventions are urgently required to enhance awareness, dispel myths, and promote supportive attitudes to reduce vulnerability.

INTRODUCTION

Human Immunodeficiency Virus (HIV) and its clinical manifestation, Acquired Immunodeficiency Syndrome (AIDS), remain a significant public health challenge of the twenty-first century. Despite ongoing global efforts over the past four decades, the epidemic continues to impact the mortality, morbidity, and socioeconomic development. As of 2024, approximately 40.8 million individuals worldwide were living with HIV, and an estimated 630,000 deaths were linked to AIDS-related complications.^[1] This burden is disproportionately concentrated in low- and middle-income countries, where prevention, diagnosis, and treatment services are inconsistent and unevenly distributed. Although antiretroviral therapy (ART) has successfully transformed HIV into a manageable chronic condition, deep-seated barriers—including stigma,

cultural beliefs, structural inequities, and misinformation—continue to obstruct progress toward epidemic control.^[2]

India carries the world's third-largest burden of HIV, with nearly 2.4 million people living with the virus as of 2021.^[3] The country has witnessed a steady decline in adult HIV prevalence from 0.54% in 2000 to 0.22% in 2020, reflecting the successes of successive phases of the National AIDS Control Programme (NACP).^[4] However, the epidemiological profile of HIV in India is marked by regional heterogeneity. The Northeast, including Assam, continues to report higher prevalence rates relative to the national average. Factors contributing to this include substance use, particularly injecting drug use, sociocultural dynamics, and infrastructural vulnerabilities that facilitate ongoing transmission.^[5] The adult HIV prevalence in states of north east region like Mizoram (2.04%), Manipur (1.43%),

Nagaland (1.15%) etc. is much higher than average national prevalence (0.22%) in India.^[6]

Adolescents and young adults (15–24 years) are especially susceptible to HIV due to intersecting biological, behavioural, and sociocultural risks. Biological vulnerabilities, such as immature genital mucosa, combine with behavioural patterns like early sexual initiation and high-risk practices. Additionally, structural gaps—including the absence of comprehensive sexuality education, misinformation spread through peers and media, and insufficient parental or institutional guidance—further heighten vulnerability. According to the National Family Health Survey (NFHS-5, 2019–21), only 25.8% of respondents demonstrated comprehensive knowledge of HIV.^[7] Moreover, negative attitudes toward people living with HIV (PLHIV) remain prevalent, perpetuating stigma and discrimination.^[8] Evidence from other low- and middle-income settings, particularly in Africa and Asia, confirms the persistence of misconceptions such as transmission through casual contact, underlining the global challenge of strengthening HIV literacy and reducing stigma.^[9]

Urban slum populations are disproportionately vulnerable due to structural determinants such as overcrowding, poverty, low literacy, limited access to healthcare, and heightened exposure to high-risk behaviours, including substance use and unprotected sexual activity. In Assam, where HIV prevalence is higher than the national average, there is a paucity of empirical research addressing knowledge and attitudes of youth in slum settings.^[10] Given the convergence of poverty, youth vulnerability and a concentrated epidemic, these populations are critical for identifying awareness gaps and attitudinal obstacles.

Therefore, having accurate knowledge about HIV/AIDS is important to reduce misconceptions and stigma and to create a more humanitarian attitude and compassionate response towards HIV/AIDS. Taking these facts into consideration, this study was undertaken among the youth living in the urban slums of Jorhat, Assam to assess their knowledge and attitudes regarding HIV/AIDS and study the factors associated with them.

MATERIALS AND METHODS

Study design and study setting: An observational cross-sectional study was carried out in the urban slums of Jorhat District, Assam among the youth in the age group of 15–24 years from April to September 2024.

Sample size: Considering the prevalence of youth having correct knowledge and attitude of HIV/AIDS as 50%, an absolute precision of 10% and a nonresponse rate of 10%, the required sample size was calculated to be 110.

Sampling technique: The study participants were enrolled in the study by two stage sampling. In the first stage, a simple random sampling technique was

adopted for selection of the slums. Considering that Jorhat district has five registered urban slums, two were selected by using random number table. Dhakaipatty and Rajamaidam were the two selected slums. In the second stage, equal number of participants was selected from each selected slum by visiting every consecutive household. From each household, one eligible youth was chosen. Data were collected till the required sample size was achieved. However, those who did not want to participate, not cooperating, guests visiting the slum at the time of data collection or inability to respond due to illness, cognitive impairment, or communication barriers were excluded from the study.

Data collection procedure: All the participants who were enrolled in the study were briefed about the purpose of the study. Written informed consent was obtained from all participants; in the case of those younger than 18 years, assent was obtained alongside parental consent. The participation was voluntary and purpose of the study was briefed. Confidentiality was strictly maintained through anonymization of data and secure handling of study records. Participants were informed of their right to withdraw from the study at any time. All the questions were well explained to the participants and data were collected by personal interview in a separate room using a pre designed, pre tested structured questionnaire. The items in the questionnaire were prepared after an extensive review of previously validated instruments used in similar studies.^[11,12] Content validity was established through expert review by faculty members in Community Medicine, and the tool was pre-tested among a small group of students not included in the final study to ensure clarity, reliability, and contextual appropriateness. Necessary modifications were made before final administration. The questionnaire consisted of a section on socio-demographic information. Information on knowledge about HIV consisted of 20 questions and was divided into 4 subheadings (Basic knowledge of HIV, mode of transmission, misconceptions about modes of transmission and prevention and control). Attitude domain contained 10 questions. The socio-economic status of the family was assessed by using the Modified Kuppuswamy's socio-economic status scale.^[13] After the data collection, any queries relating to HIV/AIDS that the participants may have had were answered.

Scoring: To evaluate knowledge and attitude, respondents were asked to answer “yes” or “no” to every knowledge and attitude related question. Each correct answer for knowledge related question was awarded 1 point and zero was given for each incorrect answer. For attitude questions, a score of 1 was assigned for positive answer and zero for negative answer.

Scores were summed up to obtain an overall score for each participant. So a respondent could score a maximum of 30 points and minimum of 0.

Levels of knowledge were categorized into

- “Low” for respondents who scored $\leq 50\%$ (score 1-10)
- “Moderate” for those who scored between 51% and 74% (score 10.1-14.9)
- “High” for those who scored $\geq 75\%$ of total score for knowledge (score 15-20).^[11,12]

The scores for attitudes were categorized into two segments based on their mean scores:

- Score < mean score - “negative” attitude
- Score equal and more than mean score - “positive” attitude.^[11,12]

Ethical Considerations: Ethical clearance was obtained from the Institutional Ethics Committee of Jorhat Medical College. Permissions were also secured from relevant municipal and community authorities

Statistical analysis: Statistical analysis was done using Microsoft excel comprising of calculating proportion, mean and standard deviation. Association was determined using chi-square test with Yates correction or Fisher’s exact test, as appropriate. P value <0.05 was considered significant for all tests.

RESULTS

Socio- demographic profile of the respondents: In the present study, out of 110 participants, 33.63% were in the age group 15-18 years, 28.18% were between 18-21 years and 38.18% were between 21-24 years. Mean age was 19.636 ± 2.54 years. 61.82 % were females and 38.18% were males. Majority (52.72%) had passed high school, 14.54% were graduates and 2.72% of them were illiterate. Most of them (65.45%) were unmarried while 33.63% of them were married and one respondent (0.90%) was separated from her husband. 53.63% were Muslims and 46.37% of them were Hindus. Most of them (84.54%) belonged to nuclear families and 15.45% were from joint families. Majority had a family size of 4-5 members (53.63%) and 35.45% had 1-3 members in their family while 10.90% of them had more than six members in their families. According to Modified Kuppuswamy’s classification (2024), 54.5% of the youth belonged to upper lower socio-economic class (IV) followed by 32.8% who belonged to lower middle socio-economic class (III). However, none of them belonged to the upper socio-economic class.

Knowledge of respondents about HIV/AIDS: All the study participants had heard of the disease. However, awareness regarding the full form of AIDS was present in only 8.2% respondents. Majority (71.8%) knew that it is not a hereditary disease. Regarding the modes of transmission, 78.2% knew that HIV can be transmitted by unprotected sex, 77.3 % knew about blood transfusion, 75.5% had the knowledge that it can be transmitted by sharing syringe, needles or razors, 80% knew that HIV can be transmitted from mother to child and 69.1 % knew that the disease can be transmitted through breast

milk. However, only 47.3% respondents knew that body piercing for tattoos can also transmit the disease. [Table 1]

With respect to misconceptions regarding modes of HIV transmission, 68.2% of the participants correctly identified that HIV cannot be transmitted through mosquito bites. Similarly, 53.6% were aware that it cannot spread by sharing food or drinks, 67.3% knew it is not transmitted through hugging or handshakes, 65.4% recognized that sharing toilets does not cause transmission, and 60.9% correctly reported that sharing clothes or personal belongings does not transmit HIV. [Table 2]

Regarding knowledge on prevention and control of HIV/AIDS, 80.9% of participants recognized that transmission can be prevented by avoiding the sharing of needles and syringes. About 75.4% reported that having sexual relations with one faithful, uninfected partner reduces the risk, while 65.4% were aware that undergoing an HIV test before marriage could aid in prevention. Additionally, 72.7% correctly indicated that condom use decreases the risk of transmission. In contrast, only 50% of respondents were aware that no vaccine is currently available, 48.2% knew about the availability of dedicated testing facilities, and just 40.9% correctly identified that HIV/AIDS has no definitive cure. [Figure 1]

Although all respondents had heard about HIV/AIDS, their sources of information varied. As illustrated in Fig. 2, majority (60.9%) obtained their information on HIV/AIDS from Television which was followed by sex education in school (31.8%) and friends (31.8%).

Overall knowledge on HIV/AIDS: 31.8% of the respondents had a high level of knowledge regarding HIV/AIDS while 37.3% of them had a moderate level of knowledge and 30.9% had low level of knowledge regarding HIV/AIDS. The mean knowledge score was 12.52 ± 3.51 among the study population.

Respondent’s attitude towards people living with HIV/AIDS: The study revealed that majority (87.3%) of the respondents felt comfortable talking to a patient of HIV/AIDS. 80.9% would feel comfortable if they had to work with them, 97.3% felt empathy towards them and 98.2% felt that they all deserve free treatment. 70.9% had no problem buying vegetables from them and 74.5% had no issues living with them in the same house.

It was interesting to note that 95.5% respondents were willing to take care of an HIV positive person in the family or community if he or she becomes ill, 91% respondents were willing to continue friendship and agreed that HIV positive students and teachers should be allowed to continue studying and teaching in the same school. [Table 4]

Overall attitude about HIV/AIDS: Mean attitude score of the study population was 8.8 ± 1.63 out of a total score of 10 from attitude related questions. The attitude scores of the study participants ranged from a minimum score of 2 to a maximum score of 10. From the study it has been found that 70% of the

respondents had a positive attitude towards people living with HIV/AIDS (PLHIV) and 30% were classified as having a negative attitude towards PLHIV as they had scored less than the mean. [Table 5]

Association of knowledge scores with socio-demographic variables

[Table 4] shows that socio economic status of has a significant association with the level of knowledge about HIV/AIDS ($p=0.038$). 44.4% of respondents of lower middle socio-economic class had high knowledge regarding HIV/AIDS whereas no respondent of lower class had high knowledge regarding HIV/AIDS. It was also seen that most of respondents had a moderate knowledge regarding HIV/AIDS except the lower socio-economic class where majority of the respondents (66.7%) had a low level of knowledge on HIV/AIDS. However, age, gender, literacy status, marital status, type of family and religion had no significant association with the level of knowledge about HIV/AIDS. [Table 6]

Association of Attitude with Socio-Demographic variables

Gender was found to be significantly associated their attitude towards people living with HIV/AIDS ($p=0.035$). [Table 5]. 77.9% of the female respondents had a positive attitude whereas only 57.1% of male respondents had a positive attitude towards people living with HIV/AIDS. Other socio-demographic variables were not found to have significant association with the attitude of the study participants. [Table 7]

Relation of Knowledge with Attitude towards HIV/AIDS

Although there was no significant variation, higher the level of knowledge, more was the positive attitude towards HIV/AIDS. With a decline in the level of knowledge, the negative attitude towards HIV/AIDS increased. 74.3% respondents with high level of knowledge had a positive attitude towards PLHIV and 70.7% of the study participants with moderate knowledge had a positive attitude towards PLHIV whereas only 64.7% of the respondents with low level of knowledge had a positive attitude towards people living with HIV/AIDS. [Table 8]

Table 1: Knowledge of respondents about HIV/AIDS

Sl. no	Variable (correct response)	Males giving correct answer No. (%) N1=42	Females giving correct answer No. (%) N2=68	Total respondents with correct answer No. (%)
1	AIDS abbreviation (Acquired Immunodeficiency Syndrome)	5(11.9)	4(5.88)	9(8.2 %)
2	AIDS is a hereditary disease (No)	33(78.5)	46(67.6)	79(71.8%)
3	Unprotected sex can transmit HIV/AIDS (Yes)	37(88.1)	49(72)	86(78.2%)
4	Blood transfusion can transmit HIV/AIDS (Yes)	33(78.5)	52(76.5)	85(77.3%)
5	Sharing razors, needles or syringes can transmit HIV/AIDS (Yes)	33(78.5)	50(73.5)	83(75.5%)
6	Body piercing for tattoos can transmit HIV/AIDS(Yes)	23(54.7)	29(42.6)	52(47.3%)
7	Mother to child transmission (Yes)	35(83.3)	53(77.9)	88(80%)
8	Breast milk can transmit HIV/AIDS (Yes)	30(71.4)	46(67.6)	76(69.1%)

*includes multiple responses

Table 2: Misconception on modes of transmission

Sl no.	Misconception on modes of transmission (Correct answer)	Males giving correct answer No. (%) n1=42	Females giving correct answer No. (%) n2=68	Total respondents with correct answer No. (%) N=110
1	Mosquito bite can transmit HIV/AIDS (No)	29(69.04)	46(67.6)	75(68.2%)
2	Eating and drinking from the same plate and glass can transmit HIV/AIDS (No)	23(54.7)	36(52.9)	59(53.6%)
3.	Hugging/shaking hands can transmit HIV/AIDS (No)	27(64.3)	47(69.1%)	74(67.3%)
4.	Sharing toilet with HIV positive person can transmit HIV/AIDS (No)	28(66.6%)	44(64.7%)	72(65.4%)
5.	Sharing clothes and belongings like combs, towels with HIV positive persons can transmit HIV/AIDS (No)	24(57.1%)	43(63.2%)	67(60.9%)

Table 3: Distribution of respondents according to overall knowledge on HIV/AIDS

Knowledge regarding HIV/AIDS	Number of respondents	Percentage (%)
Low	34	30.9%
Moderate	41	37.3%
High	35	31.8%
Total	110	100

Table 4: Respondent's attitude towards people living with HIV/AIDS

Sl. no.	Variables	Males with positive attitude No. (%) n 1=42	Females with positive attitude No. (%) n 2=68	Total respondents with positive attitude No. (%) N =110
1	Will feel comfortable talking with AIDS patient	36(85.7%)	60(88.2%)	96(87.3%)
2	Will feel comfortable working with AIDS patient	30(71.4%)	59(86.7%)	89(80.9%)
3	Feels empathy towards AIDS patient	40(95.2%)	67(98.5%)	107(97.3%)
4	Feels AIDS patient deserves free treatment	40(95.2%)	68(100%)	108(98.2%)
5	Will buy vegetables from AIDS patient	24(30.7%)	54(69.3%)	78(70.9%)
6	Will feel comfortable living with AIDS patient in same house	30(71.4%)	22(32.3%)	52(47.5%)
7	Willing to take care of HIV positive relative who becomes ill in their house or community	42(100%)	63(92.6%)	105(95.5%)
8	Will continue friendship with HIV positive friend	39(92.8%)	61(89.7%)	100(91%)
9	Feels that HIV positive student should be allowed to continue studying in school	37(97.3%)	63(92.6%)	100(91%)
10	Feels that HIV positive teacher should be allowed to continue teaching in school	37(97.3%)	63(92.6%)	100(91%)

Table 5: Distribution of respondents according to overall attitude on HIV/AIDS

Attitude regarding HIV/AIDS	Frequency	Percentage
Positive attitude	77	70%
Negative attitude	33	30%
Total	110	100

Table 6: Association of knowledge scores with socio-demographic variables

Age in years	Total	Knowledge on HIV/AIDS			P value
		High (%)	Moderate (%)	Low (%)	
15-18	37	10(27%)	13(35.2%)	14(37.8%)	$\chi^2= 8.7781$, p= .066891
18-21	31	6(19.3%)	12(38.7%)	13(42%)	
21-24	42	19(45%)	16(38%)	7(17%)	
Gender					
Male	42	14(33.4%)	19(45.2%)	9(21.4%)	$\chi^2=3.1812$ p= .203804
Female	68	21(30.8%)	22(32.3%)	25(36.9%)	
Literacy Status					
Illiterate	3	0(0%)	2(66.7%)	1(33.3%)	$\chi^2=0.2879$ p= .865916
Literate	107	35(32.7%)	39(36.4%)	33(31%)	
Marital status					
Married	37	11(29.7%)	16(43.2%)	10(27.1%)	$\chi^2=2.99$ p= .95083
Unmarried	72	23(32%)	25(34.7%)	24(33.3%)	
Divorced	1	1(100%)	0(0%)	0(0%)	
Type of family					
Joint	17	2(11.7%)	9(53%)	6(35.3%)	$\chi^2=3.991$ p= .25436
Nuclear	93	33(35.5%)	32(34.4%)	28(30.1%)	
Religion					
Hinduism	51	17(33.3%)	17(33.3%)	17(33.3%)	$\chi^2=1.734$ p= .5612
Islam	59	18(30.5%)	24(41%)	17(28.5%)	
Socio economic status					
Upper Middle	5	1(20%)	2(40%)	2(40%)	$\chi^2=17.321$ P= .038*
Lower Middle	36	16(44.4%)	17(47.2%)	3(8.4%)	
Upper Lower	60	18(30%)	19(31.7%)	23(38.3%)	
Lower	9	0(0%)	3(33.3%)	6(66.7%)	
Total	110	35	41	34	

*Result is significant at $p < .05$

Table 7: Association of Attitude with Socio-Demographic variables

Age in years	Total	Attitude		P value
		Positive (%)	Negative (%)	
15-18	37	24(64.8%)	13(35.1%)	$\chi^2= 1.295$ p= 0.686
18-21	31	24(77.4%)	7(22.5%)	
21-24	42	29(69%)	13(30.9%)	
Gender				
Male	42	24(57.1%)	18(42.8%)	$\chi^2=5.348$ p=0.035*
Female	68	53(77.9%)	15(22%)	
Literacy status				

Illiterate	3	1(33.3%)	2(66.6%)	$\chi^2=1.884$ p=0.4607
Literate	107	76(71%)	31(28.9%)	
Marital status				
Married	37	26(70.2%)	11(29.7%)	$\chi^2=2.358$ p= 0.899
Unmarried	72	51(70.8%)	21(29.1%)	
Divorced	1	0(0%)	1(100%)	
Type of family				
Joint	17	12(70.5%)	5(29.4%)	$\chi^2=0.003$ p= 0.8179
Nuclear	93	65(69.8%)	28(30.1%)	
Religion				
Hinduism	51	39(76.4%)	12(23.5%)	$\chi^2=1.896$ p= 0.2426
Islam	59	38(64.4%)	21(35.5%)	
Socio- economic status				
Upper Middle	5	4(80%)	1(20%)	$\chi^2= 6.72$ p= 0.08
Lower Middle	36	25(69%)	11(31%)	
Upper Lower	60	45(75%)	15(25%)	
Lower	9	3(33.3%)	6(66.7%)	
Total	110	77(70%)	33(30%)	

*Result is significant at $p < .05$

Table 8: Relation of Knowledge with Attitude towards HIV/AIDS

Knowledge on HIV/AIDS	Total	Attitude towards HIV/AIDS		p value
		Positive (%)	Negative (%)	
High	35	26(74.3%)	9(25.7%)	$\chi^2=0.77$ p=0.6804
Moderate	41	29(70.7%)	12(29.3%)	
Low	34	22(64.7%)	12(35.3%)	
Total	110	77(70%)	33(30%)	

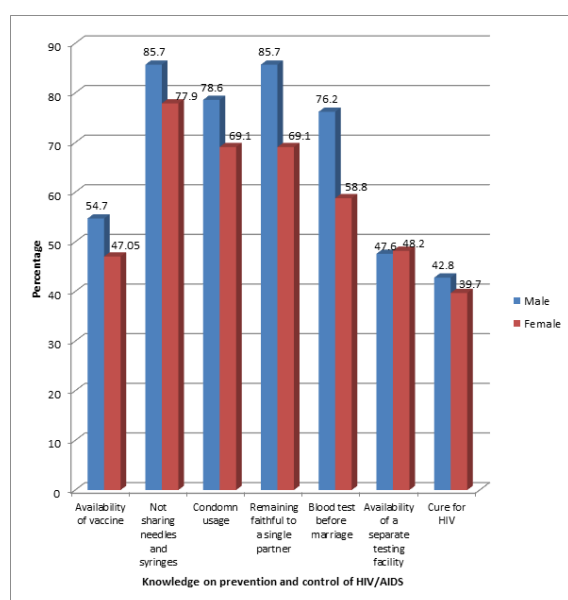


Figure 1: Knowledge on prevention and control of HIV/AIDS

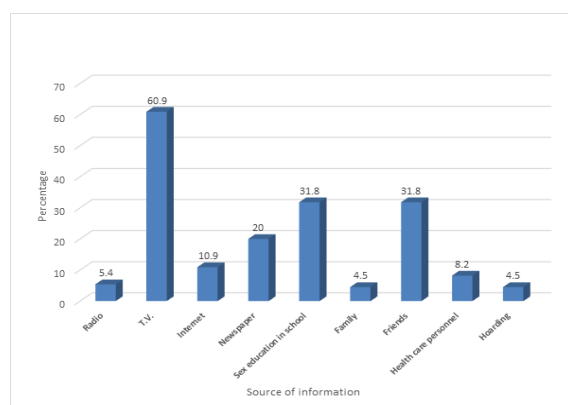


Figure 2: Source of information of respondent regarding HIV/AIDS (%)

DISCUSSION

This study assessed the HIV/AIDS-related knowledge and attitude among youth living in the urban slums of Jorhat, Assam. While general awareness of HIV was nearly universal, comprehensive knowledge remained markedly limited. Only one-third (31.8%) of respondents demonstrated a high level of knowledge regarding HIV/AIDS which included an accurate understanding of transmission pathways and preventive strategies in addition to basic knowledge about HIV. Misconceptions regarding modes of transmission such as mosquito bites, sharing utensils, clothes and casual social contact were also present. These myths continue to reinforce stigma and illustrate the persistence of community-level misinformation despite ongoing public health awareness campaigns. Socio economic status had a significant association with the level of knowledge about HIV/AIDS. Similar finding was observed in a study carried out in Maharashtra.^[14]

Nationally, these findings are consistent with NFHS-5 data, which showed that only 25.8% of Indian youth possess comprehensive knowledge of HIV/AIDS, with disparities by sex, education, and socioeconomic status.^[15,16] Evidence from other urban slum populations in Assam corroborates this picture that while HIV awareness is nearly universal, fewer than half of youth can correctly identify major transmission routes.^[10] Such patterns might be due to various barriers in health information dissemination and acceptance of existing HIV communication strategies.

A majority of females demonstrated a lower level of knowledge regarding HIV/AIDS (36.8%), whereas most males exhibited a moderate level of knowledge

(45.3%). According to findings from NFHS 5, male gender contributed to a greater comprehensive knowledge of HIV compared to women.^[16] This disparity may be attributed to the prevailing social taboos surrounding discussions on sexual and reproductive health, which are more pronounced among women. Additionally, the traditionally submissive role of women in relationships, particularly those from lower socio-economic backgrounds, may further limit their access to accurate information and awareness.

Encouragingly, however, nearly 70% of respondents expressed positive attitude towards people living with HIV (PLHIV) in this study, underscoring the difference between knowledge deficits and relatively supportive social attitudes. However, a study in Mumbai has found that only 45.13% of students had a positive attitude towards HIV/AIDS.^[17] A study based on the findings of NFHS 5 revealed that only 26.54% showed a positive attitude towards HIV.^[16] A recent meta-analysis has reported that the overall knowledge about HIV in India among the general population is 75%, while the positive attitude towards HIV is far lesser among them (60%) which is in contrast to the findings of our study^[18]. This reflects that a higher proportion of study participants have a positive attitude towards HIV compared to other studies.

A study in Kamrup (Metro), Assam, found that more than half of adolescents exposed to the Adolescent Education Programme (AEP) had high knowledge and supportive attitudes toward HIV and PLHIV.^[19] In contrast, our study demonstrated substantially lower knowledge, which may be related to reduced access to structured information and increased reliance on informal sources. Comparable studies in Dhaka slums revealed a similar trend, high awareness but poor depth of understanding.^[20] Collectively, these findings point to the profound influence of socio-structural vulnerabilities like economic deprivation on HIV knowledge outcomes among marginalized youth residing in the slums.

With regard to attitude, almost all respondents (97%) expressed compassion toward PLHIV, and a large majority (91%) supported equal rights in education and employment. However, a small proportion continued to show hesitation in casual social interactions, indicating that acceptance often coexists with underlying discomfort. These variations are likely to be influenced by persistent myths about transmission. Evidence from a recent review among Indian adolescents highlights that misconceptions regarding non-sexual transmission remain widespread and underscore the urgent need to address them through strengthened educational interventions.²¹ Comparable findings were reported by Thanavanh B et al.^[12]

In this study, all of the study participants had heard of the disease. In a study carried out in Maharashtra,^[14] 89.78% of males and 85.37% of females said that they were aware of HIV/AIDS. In another study from Vadodara, 81% of the boys and

77% of the girls gave an affirmative response.^[22] The most common source of information about HIV/AIDS was Television (60.9%) which was followed by sex education in school (31.8%) and friends (31.8%). Other studies reported that television,^[23] mass media,^[24] and school textbooks^[14] were the most common source of information about HIV. Thus, we see that one-way means of communication such as mass media is a major contributor to knowledge and awareness.

Sex education in school is also an important source of information of HIV/AIDS. This can be attributed to the mandatory inclusion of HIV in school curriculum and an active participation of teachers in imparting such valuable knowledge. There is scope that sex education in schools can contribute to enhancing the knowledge about HIV. However, family contributed to only a very meagre proportion of source of information (4.5%) which might be due to stigma and a sense of discomfort to discuss about sexually transmitted diseases which are considered a taboo in our social context.

Most of the respondents were aware that unprotected sexual relations (78.2%), blood transfusion (77.3%), sharing razors, needles or syringes (75.5%) and transplacental transmission (80%) can transmit HIV. 71.8% knew that it is not a hereditary disease. However, knowledge regarding breastfeeding and body piercing for tattoos as modes of transmission were 69% and 47.3% respectively. The findings are comparable with the findings of Khargekar et al,^[17] and Thanavanh B. et al.^[12] Data from the NFHS 5 also indicate similar results with 58% of people knowing that HIV can be transmitted from mother to her child.^[16]

In the present study, 68.2% of the participants knew that HIV cannot be transmitted by mosquito bite. Comparable findings were reported by other studies.^[14,25] Eating and drinking from the same plate and glass, hugging/shaking hands, sharing toilet, sharing clothes and belongings like combs, towels with HIV positive persons were some of the common misconceptions regarding modes of transmission of HIV. Another study reported that 23.69% of respondents from also chose kissing and handshake as transmission routes for HIV which indicates that still there is misconception and lack of proper knowledge even among college students.^[17] Comparable findings were also reported by Saluja et al,^[23] and Thanavanh B et al.^[12]

Knowledge regarding prevention and control included avoiding sharing of needles and syringes (80.9%), having sex with one faithful uninfected partner (75.4%), use of condoms (72.7%) and blood test for HIV before marriage (65.4%). Only 50% were aware that there is no vaccine available, very few knew about the availability of a separate testing facility (48.2%) and only 40.9% recognized that there is no cure for the disease. In a study conducted by Vijayageetha M et al,^[26] in Mysuru, it was seen that only 42.5% knew that there is no vaccine for HIV/AIDS. In a study conducted by Bagdey et al,^[27]

Yadav et al,^[28] and Lal et al,^[29] it was seen that 79.43%, 69.67% and 14.9% study subjects respectively knew the role of condoms in prevention of HIV. This reflects the wide variation in knowledge about the advantages of condom use in different part of the country which might be due to different time periods in which the studies were conducted, slight differences in the selection of age groups, variations in the study population and geographical areas selected in different studies. The study conducted by Vijayageetha M et al,^[26] showed that 68.4% knew about the presence of a separate testing facility and 54.8% knew that there is no cure for HIV. The findings are much higher compared to findings of the present study.

In this study, female respondents significantly expressed more favourable attitudes towards PLHIV which is consistent with other studies.^[26,30] This may reflect women's greater exposure to reproductive and maternal health communication and their participation in community programs. Conversely, young men often have fewer opportunities for structured engagement with health education activities, contributing to their relative deficits. These findings highlight the need for targeted, male-focused and peer-driven interventions designed to reshape their attitude and correct misinformation.

Overall, a declining trend of attitude was observed with decreasing level of knowledge. Similar findings were reported in another study.^[12] The observed positive relation between higher knowledge and more supportive attitudes reveals that interventions addressing both knowledge gaps along with stigma reduction simultaneously are more effective than knowledge-only approaches.^[31] For urban slum populations, this reinforces the need to prioritize initiatives that merge education with stigma-reduction strategies. The stigma will remain as an obstacle to realizing the goal of zero discrimination as one of the 2021–2026 goals of the Joint United Nations Programme on HIV/AIDS (UNAIDS)³². Therefore, a holistic approach is needed to bring about positive changes in people's knowledge and attitude towards HIV.^[16]

CONCLUSION

Overall, the findings highlight the urgent need for targeted, community-based interventions to strengthen HIV/AIDS awareness and promote positive attitudes among youth in urban slums of Jorhat. This needs to go hand in hand with efforts to raise their socio- economic status in order to empower them to make healthier choices and break the cycle of vulnerability. Targeted male focused interventions need to be designed to reshape their attitude and correct misinformation. Active involvement of parents, teachers, and community leaders and optimum utilization of mass media are essential to strengthen awareness and reduce stigma. Future research is needed to focus on evaluation of

such integrated approaches to develop evidence-based strategies that foster informed attitudes and promote risk-free healthy behavior among the vulnerable youth of the urban slums.

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