

## Research Article

# Assessment of HIV knowledge and awareness in adults of a slum area of Mumbai, India: a cross-sectional study

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## ABSTRACT

**Background:** HIV/AIDS is not only a health problem but also one of the most important social, economic, political and cultural problem. Previous studies have demonstrated low HIV knowledge and awareness among adults living in slum areas of India. The aim and objective of this study was to assess the extent of knowledge, attitude and awareness about HIV/AIDS in adults of urban slum area of Mumbai, India.

**Methods:** A cross-sectional, quantitative, observational questionnaire-based survey on HIV-KQ-18 was conducted at one of the most populated slum area of Mumbai, India between July-September, 2015. The questionnaire comprised of 18 questions. Correct answers equal to or less than 13 meant low level of knowledge.

**Results:** The present study showed that in general 67.77% of the adults gave more than 13 correct answers. Mean correct answers from males was 13.69 while that from females was 13.06 out of 18. Overall, females had less knowledge as compared to that of males. Adults in age group from 31 to 45 years had the maximum knowledge regarding HIV/AIDS followed by age group 18 to 30 and 45 to 60 years.

**Conclusions:** Overall, the knowledge of HIV/AIDS in adults of urban slum was good and slightly better than the lower knowledge margin. The awareness of HIV has improved substantially over the last decade but it is not yet enough to prevent the spread of HIV. Further qualitative studies should be performed and new initiatives should be started in order to curb the ever increasing incidence and prevalence of HIV/AIDS.

**Keywords:** HIV, AIDS, Awareness, Knowledge, HIV-KQ-18, Slum, Adults, India

## INTRODUCTION

India is the second largest populous country in the world with a population of over 1.21 billion.<sup>1,2</sup> Approximately 31.2 percentage of the total Indian population resides in urban areas, with a surge of 3.4 percent in the share of urban population during 2001-11.<sup>1,3</sup> In absolute numbers, India has the second largest slum population in the world after China.<sup>4</sup> It was reported that 17.4% of the urban population lives in slum areas in 2011, increasing from

15% in 2011.<sup>1</sup> Of these, around 38% of the population lives in million-plus cities..<sup>5</sup>

For a better job and life style perspective, many people migrate to urban areas from all over the country. These migrants are often from rural areas and poor family background. Due to limited availability of funds, they are not able to afford the higher cost of living in urban cities like Mumbai, and thereby are forced to settle in slums, resulting in an increase of the slum population.<sup>5,6</sup>

People living in slums are often deprived of health care facilities, making them vulnerable to several health issues and infections. One of the most fatal infections is HIV/AIDS and moreover, many are not even aware of available services for the treatment of such fatal diseases, especially HIV/AIDS.<sup>4</sup>

Acquired Immuno-Deficiency Syndrome (AIDS) is one of the most fatal diseases of the world. It is caused by a virus known as Human Immuno-deficiency Virus (HIV). HIV slowly and progressively destroys the immune system, leaving an individual susceptible to a variety of other opportunistic infections. AIDS is the last stage of HIV infection.

While India has witnessed a decline in the rate of adult HIV prevalence during the past decade, HIV prevalence rates in Mumbai are on all-time high.<sup>7</sup> Many studies have been done in non-slum areas of urban cities but very few studies have been conducted in slum areas.

The objective of this study is to examine awareness and knowledge among adults in slum areas of Mumbai, India.

## METHODS

A cross-sectional quantitative, observational questionnaire based survey on HIV-KQ-18 was conducted at one of the most populated slum area of Mumbai, India between July-September, 2015. Out of 18 questions, we used 13 correct answers as the margin on the HIV-KQ-18 to rule out low knowledge.

Data was collected through the questionnaire from 180 adults after telling them the importance of the study and taking informed consent. The questionnaire was explained in their own language which was either Hindi or Marathi, if they did not understand English.

Out of 180 samples, 82 were from females and 98 were from males. Statistics were drawn with the help of Excel and SPSS 19. Data was expressed in actual number, mean±standard deviation, and percentage. Pearson's Chi-Square test was used for categorical data. 'P' value of less than 0.05 was considered as statistically significant.

### Inclusion criteria

- All adults from 18 years of age up to 60 years who were present during the time of survey.
- Who willingly participated?

### Exclusion criteria

- Adults who did not give their consent.
- Adults who were absent during the survey.

- Incompletely filled questionnaire.
- Below 18 and above 60 years of age.

## RESULTS

A total of 180 completely filled questionnaires out of 202 distributed were analysed. The overall response rate of survey was 89.10%. Out of 180 adults surveyed, 54.44% were males (98/180) and 45.56% were females (82/180). The mean age of the adults was 34.16±10.94 years.

The present study showed that in general, 67.77% of the adults gave more than 13 correct answers and 32.23% gave less than 13 correct answers. 69 out of 98 males i.e. 70.40% gave more than 13 correct answers out of 18 questions asked. 53 out of 82 females i.e. 64.63% gave more than 13 correct answers out of 18 questions asked. Mean correct answers from males was 13.69 while that from females was 13.06 out of 18.

Overall, the knowledge of HIV/AIDS in adults of urban slum was good and slightly above than low knowledge with regards to HIV in general. Most of the people faced difficulty or gave wrong answers in answering questions like are as follows.

*1. Can a person get HIV by sitting in a hot tub or a swimming pool with a person who has HIV?*

Here the percentage of correct answers was just 52.2% with almost equal knowledge amongst both the genders. 52% of males gave the correct answer while 52.43% of females gave the correct answer.

*2. Can a person get HIV by sharing a glass of water with someone who has HIV?*

Here the percentage of correct answers was just 36.1%. 47.85% males gave the correct answer while 21.95% females gave the right answers.

*3. Is there a female condom that can help decrease a woman's chance of getting HIV?*

The study showed that 61.1% gave the correct answers. Here 64.28% males had given the correct answer while 57.31% of females gave the correct answer.

*4. Do you think that a person will NOT get HIV if she or he is taking antibiotics?*

Here the percentage of correct answers was 70% and was almost equal amongst all.

*5. Do you think that taking a test for HIV one week after having sex will tell a person if she or he has HIV?*

The study showed that 62.7% gave correct answers. 55.1% males gave correct answers while 71.9% of females gave correct answers.

**Table 1: HIV awareness among adults in an urban slum.**

HIV-KQ-18 Questions	Answer	Male N	Female N	Correct Answer % Total	Chi Square Test	P value
Coughing and sneezing do not spread HIV.	True	86	53	77.2	15.15	0.0005
	False	7	23			
	Don't Know	5	6			
A person can get HIV by sharing a glass of water with someone who has HIV.	True	35	32	36.1	17.11	0.0001
	False	47	18			
	Don't Know	16	32			
Pulling out the penis before a man climaxes/cums keeps a woman from getting HIV during sex.	True	8	5	90.5	1.02	0.60
	False	87	76			
	Don't Know	3	1			
A woman can get HIV if she has anal sex with a man.	True	78	64	78.8	1.71	0.42
	False	16	11			
	Don't Know	4	7			
Showering, or washing one's genitals/private parts, after sex keeps a person from getting HIV.	True	12	4	85.5	5.15	0.07
	False	83	71			
	Don't Know	3	7			
All pregnant women infected with HIV will have babies born with AIDS.	True	14	14	75.0	5.42	0.06
	False	79	56			
	Don't Know	5	12			
People who have been infected with HIV quickly show serious signs of being infected.	True	8	4	78.3	0.82	0.66
	False	75	66			
	Don't Know	15	12			
There is a vaccine that can stop adults from getting HIV.	True	8	2	90.0	4.43	0.10
	False	84	78			
	Don't Know	6	2			
People are likely to get HIV by deep kissing, putting their tongue in their partner's mouth, if their partner has HIV.	True	4	9	82.2	3.18	0.20
	False	83	65			
	Don't Know	11	8			
A woman cannot get HIV if she has sex during her period.	True	0	19	75.5	30.58	0.000
	False	88	48			
	Don't Know	10	15			
There is a female condom that can help decrease a woman's chance of getting HIV.	True	63	47	61.1	1.52	0.46
	False	9	12			
	Don't Know	26	23			
A natural skin condom works better against HIV than does a latex condom.	True	7	4	86.1	4.33	0.11
	False	87	68			
	Don't Know	4	10			
A person will NOT get HIV if she or he is taking antibiotics.	True	15	19	70.0	2.24	0.32
	False	73	53			
	Don't Know	10	10			
Having sex with more than one partner can increase a person's chance of being infected with HIV.	True	76	63	77.2	4.05	0.13
	False	7	12			
	Don't Know	15	7			
Taking a test for HIV one week after having sex will tell a person if she or he has HIV.	True	12	9	62.7	6.321	0.042
	False	54	59			
	Don't Know	32	14			
A person can get HIV by sitting in a hot tub or a swimming pool with a person who has HIV.	True	24	31	52.2	7.46	0.02
	False	51	43			
	Don't Know	23	8			
A person can get HIV from oral sex.	True	82	76	87.8	4.11	0.12
	False	7	4			
	Don't Know	9	2			
Using Vaseline or baby oil with condoms lowers the chance of getting HIV.	True	19	8	76.1	3.40	0.18
	False	70	67			
	Don't Know	9	7			

In this study, association between HIV awareness and gender in regards with their knowledge about topics like whether coughing and sneezing spread can or cannot spread HIV, whether a person can get HIV by sharing a glass of water with someone who has HIV, whether a woman can or cannot get HIV if she has sex during her period, taking a test for HIV one week after having sex will tell a person if she or he has HIV and a person can get HIV by sitting in a hot tub or a swimming pool with a person who has HIV, found to be significant ( $P < 0.05$ ).

In other questions, males and females both had good knowledge about the HIV. In general males had better knowledge as compared to that of females. The data has been depicted in Table 1.

We divided the population in 3 groups depending upon their age 18-30 years, 31-45 years and 46-60 years, in order to correlate the knowledge in regard to correct answers with different phases of life. We found that people from the age range of 31-45 had the highest knowledge. The data has been depicted in Table 2.

**Table 2: Mean Correct Answers in relation to Age (N = 180).**

Age range	N	Mean correct answers out of 18 questions	SD
18-30	67	13.44	6.03
31-45	95	13.70	6.06
46-60	18	12.44	5.63

## DISCUSSION

The AIDS population today is nearly about 46 million in the world.<sup>8</sup> Every day new HIV infections are raising substantially in Asia-Pacific region than anywhere else in the world.<sup>9</sup> Southeast Asia stands second only to sub-Saharan Africa with more than 6 million positive cases.<sup>8</sup> HIV in India has become a leading public health issue.<sup>10</sup>

According to a recent UNAIDS release, there is a lack of evidence that the epidemic of HIV/AIDS is being curbed in India.<sup>8</sup> Serious epidemic surveys and studies are currently going on in several states including Maharashtra, Tamil Nadu, Nagaland and Manipur. 56% of STD clinic attendees in Manipur are found to be HIV positive.<sup>11</sup> In Mumbai, about 1% of pregnant females were also found to be HIV positive.<sup>8</sup>

The main reason of spread of HIV infection is lack of awareness. Previous studies have shown low HIV knowledge and awareness among residents of slum areas in India. Hence, the present study was conducted.

This study provided really important insights regarding the knowledge of HIV/AIDS amongst urban slum adults. This study reveals that there has been an improvement of HIV education and knowledge amongst the slum population, but it is yet not up to the mark.

This study showed that 69 out of 98 males i.e. 70.40% gave more than 13 correct answers out of 18 questions asked as per HIV-KQ 18 questionnaire while 53 out of 82 females i.e. 64.63% gave more than 13 correct answers out of 18 questions asked. Average correct answers from males were 13.69 while that from females was 13.06 out of 18. Hence, this study proved that the HIV knowledge amongst the slum areas in Mumbai has been substantially improved.

Generally adults living in slum areas migrate from rural areas and hence, it becomes equally important to educate them in their school age while they are in rural areas. In yester years, rural population, especially adolescents were not much aware about these dreadful diseases. But due to improvement in health education in rural areas, especially in school children; the health awareness regarding sexually transmitted diseases has been improved substantially and this has been observed in our previous studies.<sup>12</sup> Hence, today the awareness and knowledge regarding HIV/AIDS in urban slums has been all time high due to improvement of awareness in their school time, supporting the present study.

The present study also proved that females overall, had less knowledge as compared to males. This is in proportion with the study conducted by Kalasagar.<sup>11</sup>

Jha had conducted a study, and it showed that urban slums had better knowledge in regards with HIV awareness as compared to that of non-urban slums. Also there has been improvement in the statistics regarding the knowledge.<sup>13</sup> The present study also observed the improvement in the education and awareness among the urban slum population. But if we aim to eradicate this fatal disease, we need nearly 100% of awareness which is yet far away.

The present study proved that the adults between 31-45 years of age had the highest knowledge possible which is also in the support of the previous studies conducted by Jha.<sup>13</sup>

## CONCLUSION

Overall, the knowledge of HIV/AIDS in adults of urban slum was good and slightly better than the lower knowledge margin. The awareness of HIV has improved substantially over the last decade but it is not yet enough to prevent the spread of HIV. Further qualitative studies should be performed and new initiatives should be started

in order to curb the ever increasing incidence and prevalence of HIV/AIDS.

#### **Limitations of the study**

- The Survey was conducted at a single slum area.
- Limited sample size.
- Quantitative survey.

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