

# Impact of Awareness Campaign on the Knowledge of Risk Factors of HIV & AIDS among Students of University of Gujrat, Pakistan

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## Author's Contribution

<sup>1,3</sup> Conception of study

<sup>1</sup> Experimentation/Study conduction

<sup>1,2</sup> Analysis/Interpretation/Discussion

<sup>1,2</sup> Manuscript Writing

<sup>2,3</sup> Critical Review

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## Abstract

**Background:** Individuals age 15-25 years are at the highest risk of HIV/AIDS due to the presence of high-risk behavior. Public health professionals are of the view that educational intervention is more successful in improving knowledge attitudes and preventive practices among the young rather than abstinence-only intervention. The aim of this study was to assess the knowledge regarding HIV/AIDS of students of the University of Gujrat, Gujrat and to find the effect of imparting education on these parameters.

**Methodology:** Pre-post quasi-experimental study design conducted at the University of Gujrat, Pakistan in the year 2015-2016. A sample size of 370 students was taken. A pre-structured self-administered questionnaire was used as a study tool, privacy and anonymity of the respondents were maintained. A comprehensive lecture and educational session were carried out that delivered information regarding HIV/AIDS disease nature, modes of transmission, myths associated with HIV/AIDS, and other disease facts. After an interval of three weeks, the same questionnaire again got filled from the same students. The pre-intervention knowledge was compared to the post educational intervention. Obtained data were evaluated by using SPSS version 20. Results were considered significant at a p-value of less than 0.05.

**Results:** The student of UOG had fairly moderate knowledge of HIV/AIDS that was significantly modified ( $p \leq 0.01$ ) after educational conditioning. And there was a clear presence of will to disseminate HIV information so that not only themselves but also their family members can be protected from this deadly infection.

**Conclusion:** Educational intervention statistically significantly conditioned students' knowledge of HIV/AIDS.

**Keywords:** HIV/AIDS, Knowledge assessment, Youth, Developing country.

## Introduction

Despite the enormous efforts taken both regionally and globally to prevent its spread, HIV deadly viral infection has put approximately 39 million people to eternal sleep to date.<sup>1</sup>

Currently, no treatment is present to combat this infection, however, antiretroviral drugs slow the disease progression and improve the living standard of infected individual.<sup>2</sup>

Thus the only key to meet the sixth-millennium development goal (MDG) of encountering HIV is through educational interventions and high-risk behavior reductions to reduce HIV spread from infected persons to the healthy population.

Until recently Pakistan was classified as a 'low prevalence high risk' country with the first AIDS case reported in 1987, but since mid-2000 Pakistan is in a 'concentrated phase' of the epidemic.<sup>3</sup> The National AIDS Control Program of the Government of Pakistan reports 120,000 HIV positive cases and an estimated HIV prevalence of 0.1%. An estimated person living with HIV in Punjab is 50,000 but the total number of reported HIV Positive cases in Punjab is 2,926.<sup>4,5</sup> The prevalence of HIV/AIDS in Gujrat, Pakistan amongst PWIDS is 46.2% mostly concentrated in a small town of Jalal Pur Jatta which is highest after Dera Ghazi Khan (49.6%) and Faisalabad (52.5%).<sup>5,6</sup> However, the reliability of available data is limited and actual rates of HIV/AIDS infection in Pakistan are much higher than the official report suggested. The danger of social solitariness, unawareness of the disease-bearing and non-registration of the infected people are among the few reasons for the paucity of the data.

The 13-24 years of the life of the individual is defined by the CDC as a young age.<sup>7</sup> As all around the world, youth and adults are curious about the unknown and engage in forbidden. Thus a number of researches have shown that greater improvement of this age group can be attained by focusing on factors that predispose to risk and harm.<sup>8</sup> A piece of good knowledge leads to a positive and optimistic attitude which turns out in ethical and appropriate action and practice.

Educational programs targeting the young vulnerable students of schools of various developing countries were productive in upgrading students' knowledge, attitudes and promoted certain preventive practices as reduction of sexual activity.<sup>9,10</sup> Even 30-45 minutes AIDS-related educational and informational lecture upgraded and improved knowledge and attitudes of 17000 Iranian university students.<sup>11</sup> A study carried

out among students of Kerala diagnosed a consequential gap in understanding HIV/AIDS especially among female and urban parts of the community. The author suggests involving teachers and parents in improving knowledge attitudes and practices regarding HIV.<sup>11</sup> Likewise in order to fill in gaps and promote an optimistic attitude toward disease patients, well established educational and informational training of medical staff should be provided at both under and post-graduate levels.<sup>13</sup> Nagamatsu, et al. inferred from their experimental study that adolescent is very receptive to an educational intervention that revised their knowledge, attitudes and sexual practices. The author also suggests that this educational intervention should be expanded to involve one's parents and teacher for more positive attitudes towards AIDS.<sup>14</sup> Likewise Behrozza and his colleagues concluded that in order to reform the negative attitudes of students, HIV education should be part of their curricula.<sup>15</sup> A review article quotes that studies with a control or comparison group that received information alone (basic intervention), adding another intervention strategy such as counseling or coping skill acquisition (experimental arms) was effective in changing attitudes and behaviors of people toward HIV positive cases.<sup>16</sup>

All these study outcomes and author's recommendations led to carry an educational intervention study in our areas of young university students. We carried out this study among students of the University of Gujrat keeping in view the predominance of high-risk behavior in youth and the University of Gujrat's location nearby the town of Jalal Pur Jatta where 46% of PWID populations are estimated to be living with HIV/AIDS.

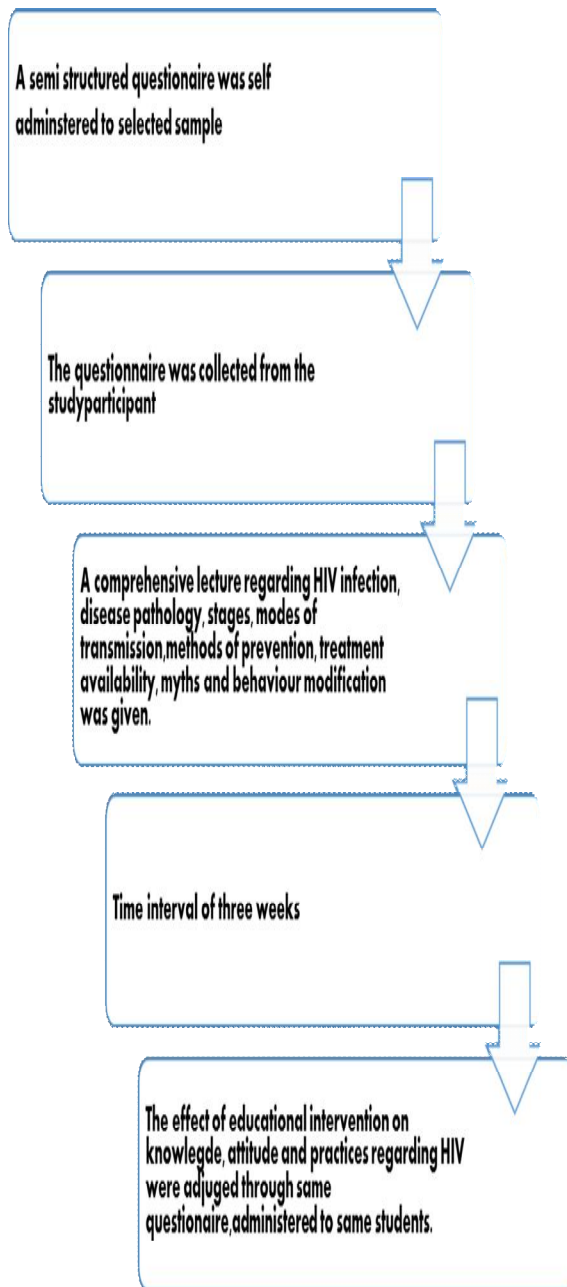
## Aims and Objectives of the study

The purpose of this study is to assess the level of knowledge and awareness about the risk factors of HIV/AIDS among non-medical students of the University of Gujrat, Gujrat, and the impact of educational intervention on them.

## Research Methodology

### Study Design

It was a pre and post-quasi-experimental study. The outline of the study design is given below:



All data were collected on specially designed perform and analysis was done using SPSS version 14. Both qualitative, as well as quantitative variables were accessed by employing descriptive statistics. For variables like age, mean and standard deviation were collected.

#### Study Setting and Population:

The study was carried out at the University of Gujrat, Pakistan in 2015-2016 that caters to the higher education in medicine, social sciences, art and designs,

law, management, computer sciences, etc. This university was selected because:

1. The predominance of high-risk behavior in youth
2. The University of Gujrat is located very nearby to the town of Jalal Pur Jatttan where 46% of PWID populations are estimated to be living with HIV/AIDS.

#### Sampling Technique: Convenient Sampling

**Sample Size:** As there was no existing data on KAPs among University students of Gujrat, we calculated the sample size based on the estimate that 50% of students may have enough knowledge on HIV/AIDS. The precision was set at 5%. For P-value 0.05% and 95% power of the study, our expected sample size was 370 students. Following formula was used  $n = N \cdot X / (X + N - 1)$ , where,  
 $X = Z_{\alpha/2} \cdot \sqrt{p \cdot (1-p)} / MOE^2$ ,  
 $Z_{\alpha/2}$  is the critical value of the Normal distribution at  $\alpha/2$  (for a confidence level of 95%,  $\alpha$  is 0.05 and the critical value is 1.96),

MOE is the margin of error,  $p$  is the sample proportion, and  $N$  is the population size.

#### Data Collection / Study Tool

English form, pre-structured, self-administered and anonymous questionnaire was used for data collection in this study. Help was taken from reviewed literature while constructing the questionnaire. Strong and his friend in 2005 documented that a questionnaire is a good study tool to access knowledge, attitude and practices regarding HIV/AIDS.<sup>17</sup>

The questionnaire was divided into two parts. Part I focused on the socio-demographic characteristics of the respondents, including age, ethnic groups, residence, and their sources of information about HIV/AIDS. Part II contained knowledge-related items, with questions relating to transmission, and prevention and control of HIV/AIDS. It included both positively and negatively framed questions to assess their knowledge, as well as their misperceptions, about HIV/AIDS. Students had to answer 36 questions in total regarding HIV infectivity, modes of transmission, disease course and treatment options available. Before data collection began, the questionnaire was pilot-tested for clarity, feasibility, and appropriateness for the students. The questionnaire was administered to forty randomly selected students representing 10% of the sample size as recommended by Cjaza<sup>18</sup> to confirm questionnaire validity. The responses were then applied to improve the study tool.

**Inclusion Criteria:** Participants included male and female non-medical sciences students in University campuses between the ages of 17 to 26 who had never had previous peer education training on HIV/AIDS.

#### Data Analysis

The data collected was manually checked for completeness, followed by coding and saved into a personal laptop. The Statistical Package for Social Sciences (SPSS) window version 20 was used to analyze the quantitative data which includes both descriptive and inferential statistics. There were 36 items regarding HIV knowledge. Students had the options of selection either 'yes', 'no' or 'don't know' options. Students who did not give a response were given zero scores during data entry. As our data were categorical in nature with each variable having two and more categorical, independent groups, we ran a chi-square test. The cumulative knowledge score pre educational intervention was compared to post knowledge scores via a paired student t-test. Each correct response was given one score.

#### Study Variables

1. Departments (non-medical Sciences)
2. Level of basic knowledge of HIV/AIDS
3. Knowledge about modes of transmission of HIV/AIDS.
4. Myths about HIV/AIDS
5. Disease course and treatment options

#### Ethical Consideration

Informed consent was taken from the study participants. Confidentiality and anonymity of the participants were assured. The aims and objectives of the study with expected outcomes were explained to participants. Participants were requested to get engaged in this study without any social or peer pressure. Permission from the respective head of departments of the University was also taken.

## Result

A total of 370 students participated in the study and their knowledge was assessed in regards to HIV/AIDS. Noteworthy point is that all the respondents did not respond to all questions of the questionnaire.

**1. Demographic Data:** The mean age of the students was 20.95 years with a standard deviation (SD) of 1.34. Forty-four percent of students were male and 55.9 percent of students were female and the female to male ratio was 1.27. Forty (10.8%) student participants were married. In response to our question that had the study participants ever heard of HIV/AIDS, 85 percent of participants answered yes whereas 7.3% of students' didn't respond to the questions. The major source of information was the media (69.2 %). After media, the internet (12.4 %) was the second-largest source of information followed by friends (9.2%) and then teachers (7.6 %).

#### 2. Knowledge of the students regarding HIV/AIDS:

Students had to answer 36 questions in total regarding HIV infectivity, modes of transmission, disease course, and treatment options available.

Before the educational intervention, 53.5% of students labeled HIV as communicable disease and almost 17 % of the student left this question. However, in post-intervention, the correct response raised to 75.6 %, again statistically inferential result with p-value  $\leq 0.01$ . Regarding the presence of HIV/AIDS in the district Gujrat, 51% of students prior to intervention answered accurately and 28.38 % were unaware of the answer

**Table 1: Knowledge of the students of UOG regarding HIV/AIDS Transmission**

Variable	Correct response (%)		P value
	Pre-intervention	Post-intervention	
Transmission by shaking hands	73	90.3	$\leq 0.01$
Transmission by touching the body of infected person	56.2	89.5	$\leq 0.01$
Transmission by drinking Dirty water	44.1	89.2	$\leq 0.01$
Transmission by kissing infected person	28.6	84.1	$\leq 0.01$
Transmission through mosquito bites	44.1	81.9	$\leq 0.01$
Transmission by sharing public phones	75.4	91.4	$\leq 0.01$

Transmission sharing food with infected person	43.5	88.9	≤0.01
Transmission by sitting in the same classroom with an infected person	48.1	85.1	≤0.01
Transmission through cough and sneeze	40.3	83.5	≤0.01
Transmission from sharing a toilet seat	44.6	84.6	≤0.01
Transmission via sharing a glass of water	42.7	81.6	≤0.01
Transmitted from HIV positive pregnant mother to her baby	64.9	88.1	≤0.01
Can HIV positive mother breast-feed her child	33	45.9	≤0.01
Transmitted by razor blades used for shaving and hair cutting	72.2	81.4	≤0.01
Transmitted during body piercing and tattooing	53.8	76.2	≤0.01
Transmitted through shared/infected syringes	69.5	84.1	≤0.01
Spread by sexual intercourse with an HIV infected person without a condom	62.6	75.3	≤0.01
Transmission via infected Persons sweat, saliva, urine& tears	22.4	73.2	≤0.01

### 3. Knowledge about Disease Course of HIV/AIDS:

Study participants were asked about the information and insight they had relating to the HIV/AIDS disease course. They were asked to pick the answer from options yes, no, and don't know. This was followed by a general HIV/AIDS education. Post-intervention questionnaires got filled by the same student after an interval of three weeks.

The results were compared by the McNemar Bowker test and were considered significant if P-value was equal or less than 0.05.

**Table 2: Knowledge of the students of UOG regarding about disease course of HIV/AIDS**

Variable	Correct response (%)		P value
	Pre-intervention	Post-intervention	
Can you tell if someone has AIDS by looking at a person?	48.9	68.4	≤ 0.01
Does HIV infection show a serious sign of disease quickly?	37.8	69.2	≤ 0.01
Does a person with HIV look and feel healthy?	21.6	48.6	≤ 0.01
Can a person be infected by HIV for 5 or more years without getting AIDS?	18.1	58.9	≤ 0.01

### 4. Knowledge about Treatment Options of HIV/AIDS:

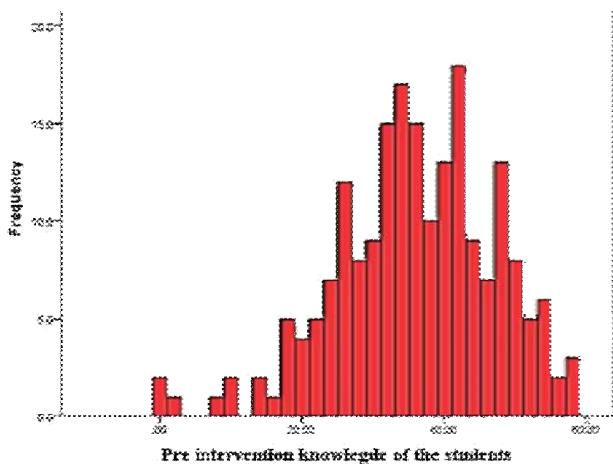
Student participant's knowledge regarding HIV/AIDS treatment was also adjudged. They were inquired whether any antibiotic or multivitamin help in fighting HIV. The post-intervention response was also noted and results were considered significant if P-value is less than 0.05.

**Table 3 Knowledge of the students of UOG regarding HIV/AIDS treatment options**

Variable	Correct response (%)		P value
	Pre-intervention	Post-intervention	
Is there any vaccine that can stop adults from getting HIV?	19.2	67.6	≤ 0.01
Is there any cure for HIV?	20.5	71.4	≤ 0.01
Does taking vitamins to keep a person from getting HIV?	21.9	67.3	≤ 0.01
Will a person get HIV if he or she is taking antibiotics?	23.2	54.7	≤ 0.01

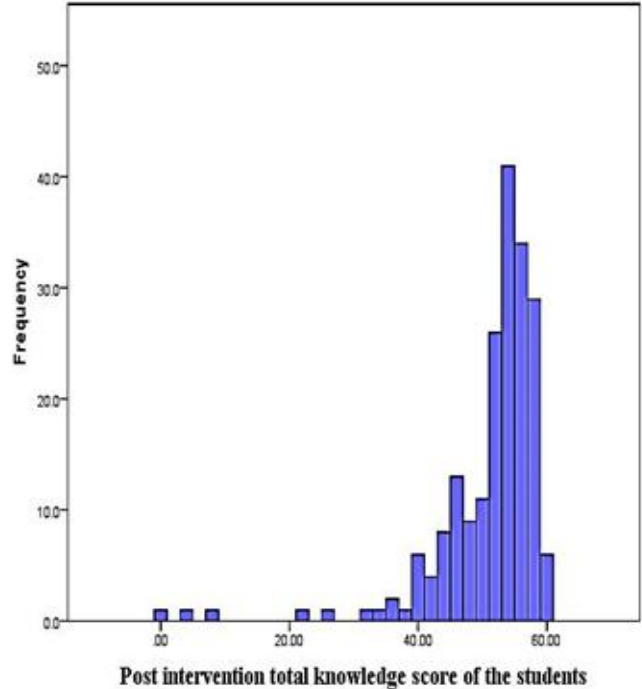
**5. Comparison of the Knowledge Prior to Educational Intervention to that after the Intervention:**

The mean total knowledge score of the students of University of Gujrat about HIV/AIDS modes of transmission, disease course, and treatment availability, prior to any intervention was 35.57, Standard deviation of ±11.27. After imparting education regarding HIV/AIDS this score elevated to an average of 50.68 (Standard deviation of ±8.49) as clearly be seen in figure 2 and figure 3 respectively. A paired student T-test was applied to access the statistical significance of these differences in mean total knowledge score before and after an educational intervention. The p-value of the result is highly significant at  $p \leq 0.001$ .



**Figure 1: Pre-intervention knowledge score of the students.**

(The majority of the students' score was 35-45 as seen.)



**Figure 2: Post-intervention knowledge score of the students.**

(Majority of the students score 55-65 as seen.)

**Discussion**

HIV/AIDS is one of the major public health issues that we face today. Prevention is the only key to slow down its pandemic. Due to our social and religious values, our youth may do not cross the line of forbidden. But the reality is always bitter. Data of the study carried out by National Aids Control Programme in 2005 showed that in Karachi this only majority of children experience their debut sex at an age of 13-15 years and 30% of these children were paid for it.<sup>19</sup> Thus numbers of researches have shown that greater improvement of this age group can be attained by focusing on factors that predispose to risk and harm.<sup>8</sup> In view of this CDC was asked to assist organizations aiming at health education and promotion to prevent HIV/AIDS spread among this vulnerable age group.

The University of Gujrat is at a distance of 06 km from the town of Jalal Pur Jatta, an area with a high prevalence of HIV/AIDS among IV drug abusers. Also, this University educates not only students of district Gujrat but students from Lahore, Islamabad, Jehlum, Gujranwala, and other areas are also enrolled here. We aimed to access the existing knowledge the young highly vulnerable students of the University of

Gujrat hold and adjudge the role of educational conditioning on knowledge.

According to Badran in 1995<sup>20</sup>, knowledge is “the capacity to acquire, retain and use the information and it is a mixture of comprehension, experience, discernment, and skill”. In our study Knowledge referred to correct responses to knowledge-based questions of a structured questionnaire.

According to our study result, the students of UOG had fairly good knowledge prior to any educational information. The mean total knowledge score of the student was 35.57 prior to education. Pre-intervention results clearly demonstrated that 88% of students feared the spread of HIV through body secretion like sweat, urine, saliva, and tears. With regard to the HIV/AIDS disease course, only 20-35% of the respondents had appropriate knowledge. Further adding to pre-intervention knowledge assessment were the responses to queries about treatment options of HIV/AIDS. Eighty percent of students thought that there is a presence of vaccines against HIV and HIV/AIDS is a curable disease. The same percentages of students were of the idea that taking vitamins and antibiotics can prevent them from getting infected by this virus. After the educational intervention, the total knowledge scores statistically inferentially ( $p \leq 0.01$ ) altered to a higher mean score of 50.7. 65-85% of the students gave back accurate and appropriate feedback to our above mentioned HIV/AIDS knowledge-based questions.

Our finding was coherent with those of Kumar et al. they disclosed in their study that passing on information and educating youth even through film form can significantly alter their knowledge and attitudes.<sup>21</sup>

Similar constructive effects were observed by Mockiene and associates in 2011, they concluded in their study that a two-day workshop significantly altered nurses' attitudes toward PLWH.<sup>22</sup> Significant improvement in HIV/AIDS-related knowledge and attitudes of high school students of Wahun, China was noted after educational intervention in a study carried Gao et al in 2012.<sup>23</sup> They reported that an hour educational lecture about HIV risks and transmission was beneficial in increasing knowledge and reducing disease-associated fears and myths of students. In concordant to our study outcomes were also the results of Ergene and fellows in 2005. They conducted a study involving the effects of peer education and single session lectures on knowledge attitudes and practices of university students in Turkey. They were of the view that both interventions introduced positive

reforms in students with respect to their HIV/AIDS-related knowledge and attitudes.<sup>24</sup> Kirby, Larris, and Rolleri reevaluated 83 interventional programmes impact on HIV and STI related knowledge, awareness, risks, attitudes, and ethics and came to the conclusion that such educational interventions have a far more important role in promoting awareness, knowledge and positive attitudes with reduction of risky behavior.<sup>25</sup> These results are also accordant to our study effects. Comparable to our study again, Magnani et al in 2005 concluded in their research that school-based educational activities are able to impart and communicate key information to youth that can prove beneficial to reduce HIV spread.<sup>26</sup> Similar results were put forward by many other researchers that laid importance of educational intervention in conditioning student's knowledge, attitudes, and practices related to HIV/AIDS.<sup>11</sup>

## Conclusion and Recommendations

The students of the University of Gujrat were very receptive to an educational intervention that statistically significantly improved their knowledge, awareness and reduced their fear and anxiety about HIV/AIDS. The students already had a positive attitude towards people living with HIV/AIDS. This was further enhanced by the educational sessions. Regarding HIV/AIDS preventive practices, our study concludes that counseling motivated students to share this disease-related information with their family and friends and actively take part in AIDS-related educational activities.

Thus HIV/AIDS-related education should be part of the university curriculum to improve students' knowledge of HIV/AIDS. Comprehensive training and health education should be imparted to students through routine lectures/ Seminars to alter their negative attitudes and reinforce positive practices relating to various health issues.

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