Original article:

Knowledge and attitude of medical students, interns and post graduate medical students regarding HIV/AIDS

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ABSTRACT:

Introduction: The health care workers need to be adequately educated and made aware about this disease so that they can impart correct information. The students of today's health care sector should be adequately aware about this viral pandemic as they will be the work force in the near future. With this background the present work was planned to determine the knowledge and attitude of students towards this pandemic.

Methodology: A questionnaire was prepared taking into account the various aspects of the diseases. It was distributed and collected from Post Graduate (PG) students, Interns and Final Year MBBS students and analysed manually.

Result & Conclusion: Of the 200 questionnaires distributed 139 were collected and analysed. The analysis revealed that the students are well aware of the cause of AIDS and how HIV is transmitted. They are also well aware of the high risk groups. However, the students are not well versed with what does not transmit HIV and who do not fall under the high risk groups. The student's lack of knowledge on clinical aspects of HIV/AIDS, issues related to prevention and government initiatives and Universal Precautions was evident from the study.

Key Words: HIV/AIDS, Medical Students, Knowledge, Attitude

Introduction

Today 33.3 million[1] people are affected by this virus in this world, of which 2.27 million are in our country[2]. Every year 2.6 million[1] new cases of HIV are added to the previous burden. And more than 1.8 million people worldwide die due to it each year[1]. India ranks 3rd in the number of HIV patients[2].

In a research conducted in China only around 52% of the medical students knew how to diagnose HIV. 6% of the medical students thought that there is a cure for HIV. 27% of the students told that they would treat HIV patients differently.[3] One-third of them supported quarantine measures as well as keeping infected students out of classrooms.[4] I n a study done in Karachi on medical students of pre-clinical and clinical years, majority of the students (98%) agreed that an infected person is a major source of transmitting these infections.[5] A study in Turkey revealed that a lack of relevant education regarding AIDS was obvious in their sample comprising students of medical faculty, dental faculty and medical technology vocational training school.[6] Similarly students of pharmacy also had low level of knowledge of AIDS/HIV, as showed in a study done in Malaysia.[7]

In Tanzania a study showed that although health care students were aware of voluntary counseling and testing (VCT) and were willing to test, the uptake was low. Some of the students (19.1%) were negative for health care professionals attending VCT.[8]

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A study done in Delhi on interns, showed that most of the interns (68.3%) perceived themselves to be at a high risk of acquiring HIV due to needle pricks and surgical instruments (32.4%), exposure to body fluids of patients (28.5%) and insufficient availability of gloves (17.6%). They also found that some interns (3.1%) were considering leaving medical profession due to this risk and few (23.2%) opined that students may lose interest in medical field due to the risk. The researchers had concluded that reduction in the risk perception could be done by increasing awareness and by reorientation.[9]

In a study done on the first year medical students of Rohtak, all the students had heard of AIDS and HIV. 96% knew it to be a viral infection. [10] In another study of first year students in Andhra Pradesh majority of the students were aware of AIDS, its definition, causation, its ability to spread by blood and through pregnancy. However few (4%) believed that HIV could spread by examination of patients.[11] Similarly in yet another study on first year students, 90% knew that unprotected sex could transmit AIDS, other than infected needles (76%). [12]

Materials and Methods:

This study was conducted in Krishna Institute of Medical Sciences, Karad, Maharashtra during February 2011. The state of Maharashtra was chosen taking into account the high prevalence of HIV here.[2] As no standard questionnaire is available a questionnaire was prepared taking into account the various aspects of the diseases, which included virology, pathology, epidemiology, pharmacotherapy, medical and surgical complications, preventive measures and information about government initiatives. The questionnaire was in English language and contained 7 questions relating to personal profile and 27 questions related to HIV and AIDS. The questionnaire had some multiple choice questions and some descriptive questions so that the students could write their insight on the matter.

The study sample was selected by method of simple random sampling. 200 questionnaires were distributed among the Post Graduate (PG) students, Interns and Final Year MBBS students as these are the ones who are going to join the work force of the health care sector within a short time. The subjects were requested to fill the questionnaire in front of the researchers, however where this was not possible the questionnaire was handed out and collected later.

The answers given for each question of the questionnaire was entered into a Microsoft Excel Spread sheet and analysed manually by the researchers.

Results

Of the 200 questionnaire distributed 153 were collected. 14 of the questionnaire collected were not considered in the analysis as they were incomplete.

Among the 139 respondents considered 22 (15.83%) were PG students, 78 (56.12%) were interns and 39 (28.06) were Final Year students. 82 (58.99%) of the respondents were male and the remaining 57 (41.01%) were females. Details of the same are given in Table No. I

TABLE NO. 1: No of respondents

N	PG	Intern	Final	Total
Male	13	49	20	82
Female	9	29	19	57
Total	22	78	39	139

The mean age of the respondents were 23.37 years (Range 20-32 years) with a standard deviation of ±2.20. 126 (90.65%) of the respondents were

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Hindu, 5 (3.60%) of them were Muslims, 4 (2.88%) were Jains and there were 1 (0.72) each of Sikh and Parsi. 2 (1.44%) however did not mention their religion. 123 (88.49%) of our respondents were single, 2.16% (n=3, 2 PG student and 1 intern) were married, 3.60% (n=5, all females) had boyfriend and 5.76% (n=8, 6 males and 2 females) had girlfriends.

Knowledge on HIV and AIDS: Of the respondents 84.89% (n=118) could state that HIV stands for Human Immunodeficiency Virus and 87.77% (n=122) stated that AIDS meant Acquired Immunodeficiency Syndrome. 91.37% (n=127) knew correctly that AIDS and HIV were not synonyms and 92.13% (n=117) of the students who said so, correctly identified AIDS to be a manifest disease of HIV. 94.24% (n=131) of the students knew that HIV was an infection however 99.28% (n=138) knew that HIV was a virus. 95.68% (n=133) knew that HIV was a virus of Retroviredae group and 92.81% (n=129) of the students knew that HIV is of two types HIV I and HIV II. 94.24% (n=131) knew that HIV affects the in human body.

Transmission and High Risk Groups: On asking which of the following activities could transmit HIV, the students answers as shown in table 2.

TABLE 2: Activities which can spread HIV/AIDS

HIV can spread by:	N	%
Having sexual contact	137	98.56
Blood transfusions	137	98.56
From mother to child during pregnancy or delivery	132	94.96
Injecting narcotic drugs	118	84.89
Breast feeding	118	84.89
Kissing	32	23.02
By mosquitoes	16	11.51
Coughing and sneezing, coming in contacts with faeces	11	7.91
Caring for/washing/changing clothes for someone who has AIDS?	4	2.88
Eating or drinking from the same plates and cups?	3	2.16
Shaking hands/hugging/living in the same house?	3	2.16

On our question on which of the body fluids could and which could not transmit HIV the students answered as shown in Figure 2. On asking which groups are at a high risk for HIV answers we got are tabulated in table 3.

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Table 3: High Risk Groups

Groups	N	%
Sex Workers	136	97.84
Homosexuals	133	95.68
Drug Abusers	130	93.53
Drivers	115	82.73
Health Care Workers	96	69.06
Young	80	57.55
Soldiers	64	46.04
Alcoholics	32	23.02
Nuns/Priest/Sadhus	21	15.11
Old	13	9.35
Smokers	9	6.47

Clinical Knowledge: Signs and symptoms which the students thought would be present in a HIV patient is tabulated in TABLE 4.

TABLE 4: Signs and Symptoms

Sign/Symptom	N	%
Weight Loss	84	60.43
Opportunistic Infection	72	51.80
Fever	70	50.36
Dysentery/Diarrhoea	57	41.01
Respiratory Symptoms	39	28.06
Decreased Immunity	28	20.14
Lymphadenopathy	17	12.23
Weakness/Lethargy/Fatigue	17	12.23
Malaise	8	5.76
Sweating	7	5.04
Kaposi's Sarcoma	5	3.60
Anorexia	4	2.88
Excessive Salivation	4	2.88
Wasting	2	1.44
AIDS related complex	1	0.72
AIDS related dementia	1	0.72
Nausea	1	0.72

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Non Healing Wounds	1	0.72
Rash and Arthropathy	1	0.72
Seroconvertion Illness	1	0.72
No Answer	9	6.47

Most of our respondents knew that needle prick injury could transmit HIV (93.53%, n=130) however only 12.23% (n=17) knew that the chances to get infected was as slim as 0.3%. 88.49% (n=123) agreed that a HIV testing was necessary before any major or minor surgery. Precautions during surgery which they recommended are listed in Table 5.

TABLE 5: Precautions recommended during surgery

Precautions	**N**	**%**
Use of HIV Kit	48	34.53
Avoid contact with Blood	21	15.11
Universal Precautions	21	15.11
Careful Handling of Instruments	13	9.35
Prophylaxis of Health Care Workers	10	7.19
Proper sterilization of Instruments	9	6.47
Protect patient from Infection	6	4.32
Blood Investigations	4	2.88
Proper disposal of swabs	3	2.16
Proper Draping	2	1.44
Sterilization of OT before and after surgery	2	1.44
Maintain a distance from patient	1	0.72
Minimal Staff	1	0.72
No Answer	25	17.99

Advice which our respondents thought they would give to a pregnant lady who is HIV positive is tabulated in TABLE 6.

TABLE 6: Advice to HIV positive pregnant Lady

Advice for HIV Positive Pregnant Lady	**N**	**%**
PPTCT (Prevention of Parent To Child Transmission)	34	24.46
Abortion if Family Complete	31	22.30
ART to Mother	31	22.30
Prefer LSCS	28	20.14
Avoid Breast Feeding	27	19.42
Prophylaxis for HIV to Mother	18	12.95

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Counselling regarding Baby getting affected	13	9.35
Blood Investigation	9	6.47
Avoid prolonging labour	4	2.88
ART to Baby	3	2.16
Ask husband to test for HIV	2	1.44
Avoid LSCS	2	1.44
Counselling for further pregnancy	2	1.44
Avoid Blood Contact during Labour	1	0.72
Refer to Gynaecologist	1	0.72
Test for Opportunistic Infection	1	0.72
No Answer	21	15.11

Prevention, Community aspects and National Programs: On asking the preventive measures for HIV/AIDS the students replied as tabulated in TABLE 7.

TABLE 7: Preventive Measures

Preventive Measures	**N**	**%**
Safe sex/Condoms/Barrier Contraceptives	127	91.37
HIV test before blood transfusion	62	44.60
Disposable needles, blades and razors	42	30.22
Faithfulness to a single partner	30	21.58
Prophylaxis of Health Care Workers	27	19.42
Health Education	17	12.23
No i.v. drug abuse	17	12.23
Prophylaxis of pregnant lady	15	10.79
Treatment of HIV positive	6	4.32
Prevent vertical transmission by prophylaxis	5	3.60
Avoid becoming pregnant of HIV Positive	3	2.16
Treatment of New Born	3	2.16
Avoid breast feeding	2	1.44
LSCS for HIV positive Mother	2	1.44
HIV testing before any surgery	1	0.72
Universal Precaution	1	0.72
No answer	3	2.16

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76.26% (n=106) of the students knew that the Government of India runs a national program against AIDS however only 13.67% (n=19) could correctly identify it as National AIDS control Program. 48.92% (n=68) knew PPTCT to be Prevention of Parent to child transmission while 43.17% (n=60) did not anything about it. Only 11.51% (n=16) students mentioned that Nevirapine is prescribed as a part of PPTCT. Only 9.35% (n=13) correctly gave the Full Form of AFASS as Affordable, Feasible, Acceptable, Safe and Sustainable, while 87.77% (n=122) did not know about it. Only 2.88% (n=4) of the students knew that AFASS was related to artificial feeding of the baby. 55.40% (n=77) students correctly identified NACO to be National AIDS Control Organisation while 41.73% (n=58) did not know this.

Attitude: On asking what the student will do to a HIV positive patient in a clinical setting 67.63% (n=94) of the students claimed that they did not feel worried about caring for people with HIV, while only 5.76% (n=8) thought that they would refuse any treatment to HIV patients. About half of the students said that they were willing to operate an HIV patient (48.20% n=67) and deliver an HIV positive lady (49.64% n=69). 78.42% (n=109) of the students asked for a different ward for the HIV patients.

Discussion

A good number of students 84.89% could state that HIV stands for Human Immunodeficiency Virus, however in the remaining student's answers like Human Influenza Virus and Human Immunosuppressant Virus which two of the subjects have written are unacceptable. Similarly a good number of students, 87.77%, knew AIDS meant Acquired Immunodeficiency Syndrome, again answers such as Auto Immunodeficiency Syndrome, written by the students are unacceptable. 91.37% knew correctly that AIDS and HIV were not synonyms but the point of concern lies in the remaining 8.63% who think it to be synonyms. A very optimistic number of 99.28% knew that HIV was a virus and 95.68% knew HIV comes under Retroviredae group. As the prognosis of the two different types of HIV virus is different, knowledge of 92.81% of the students about the presence of two types HIV I and HIV II is a good indication. In comparison to a similar study conducted in China 82.4% of the medical students knew and could specify the difference between HIV and AIDS[3]. This is lower than our result. 96% of the students of first year knew it to be a viral infection in a study done in Rohtak; however our result of 99.28% shows a tendency of increase of orientation towards the subject.[10]

Transmission and High Risk Groups: Our subject were better off (84.89%) in the knowledge of spread of HIV by breast feed in which 67% of their subject stated positively. In a similar study done in Karachi, Pakistan 95% of their subjects stated that HIV can spread by Blood Transfusion as compared that 98.56% of our subjects.[5] However these misconceptions were also shown in the Chinese study.[3] Their subjects also stated kissing (21%), mosquitoes' bite (28%), shaking hands, sharing plates and clothes as a route of infection.[3] Only 55% of the first year students in a research done in Rohtak, India could correctly tell that HIV can spread by any of these routes – Sexual contact, blood, contaminated syringes and from mother to child.[10] While most of our subjects have correctly identified these routes. This again indicated a trend of increasing knowledge and awareness toward this subject in the medical curriculum.

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Most of our subjects were well versed with which body fluids could transmit HIV such as Blood (96.40%), Semen (94.24%), Vaginal Fluid (87.05%), Breast Milk (76.26%) and other body fluids containing blood (63.31%). However fluids that cannot transmit HIV were also wrongly said by our subjects such as Saliva (33.81%), Urine (21.58%), Tears (17.99%) and sweat (7.91%). This can be a cause of concern, as they can cause undue apprehension during clinical practice.

Most of the subjects identified the high risk groups correctly such as Sex Workers (97.84%), Homosexuals (95.68%), Drug Abusers (93.53%), Drivers (82.73%), Health Care Workers (69.06%), Young People (57.55%) and Soldiers (46.04%). Other options which some students thought to be at risk were alcoholics (23.02%), nuns/priests/sadhus (15.11%), old age old people (9.35%) and smokers (6.47%). This also indicates that students also have some misconceptions regarding the High Risk Group.

Clinical Knowledge: A very promising result was not obtained from the students when they were asked to write down the Signs and Symptoms that can be expected in a HIV/AIDS patient. The students gave answers such as Weight Loss (60.43%), Recurrent opportunistic infections (51.8%), Fever (50.36%), Dysentery/Diarrhoea (41.01%), Respiratory symptoms such as cough, cold, pharyngitis (28.06%), Lymphadenopathy (12.23%), weakness/lethargy/fatigue (12.23%), few students also mentioned sweating, Kaposi's sarcoma, anorexia, excessive salivation, wasting, AIDS related dementia and complex, nausea and non-healing wound. This not so optimistic result could be due the apprehension medical students have while examining and studying AIDS patients which in turn effects their clinical knowledge, related to the disease, negatively. This apprehension was also shown in a research conducted on Interns in Delhi in which 68% of them perceived themselves to be at high risk and around 3% even considered leaving medical profession due to the risk.[9]

Most of the students knew that needle prick injury could transmit HIV (93.53%). But the misconception regarding the chances of needle prick transmitting HIV is a matter of concern. Only 12.23% knew that the chances were only 0.3%. 5.76% of the students underestimated the risk, indicating chances from 0.01% to 0.25%. Whereas, 17.99% of the students overestimated the risk indicating chances from 0.5% to 100%. This like previously stated seems to have created undue apprehension on the students which again reflects on the clinical knowledge regarding AIDS patients. On asking the measures they take during handling of patients in the operation theatre again a not very promising result showed up. The students gave answers like the use of HIV Kit (34.53%), Universal Precaution (15.11%), Avoid Blood Contact (15.11%), Careful handling of surgical instruments (9.35%), prophylaxis of health care workers (7.19%), Sterilization of instruments (6.47%), Protection of patient from infection (4.32%), few of the students also mentioned careful disposal of soiled swabs, proper draping, sterilization of operation theatre before and after surgery, maintain a distance from the patient and minimal staff in the operation theatre. However, 88.49% agreed that a HIV testing was necessary before any major or minor surgery.

A similar cloud of apprehension was seen on the advice the students would give a pregnant lady with HIV. Only 24.46% stated that they will put the lady on the Prevention of Parent To Child Transmission

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(PPTCT) regime. 22.3% stated that they will advise for an abortion if the family was complete. 22.3% stated that they will start the lady on Anti Retro Viral Therapy. 20.14% said to prefer LSCS for delivery and 19.42% would also advise to avoid Breast feeding. 9.35% told to counsel regarding the baby getting affected and 1.44% asked to counsel for further pregnancies. Only 1.44% students would ask the husband to test for HIV.

Prevention, Community aspects and National Programs: Almost all the students (91.37%) knew that the use of condom/barrier contraceptives/safe sex is a method to prevent transmission of HIV/AIDS. However fewer students have written HIV testing before blood transfusion (44.60%) and still fewer have written Disposable needles/blades/razors (30.22%) as a method of prevention of HIV/AIDS. Faithfulness to a single partner (21.58%), Protection of health care workers (19.42%), health education (12.23%), no i.v. drug abuse (12.23), and prophylaxis of the pregnant (10.79%) are the other answers mentioned by the students. Very few students mentioned treatment of HIV patients, avoiding breast feeding, HIV testing before any procedure and universal precaution as methods to prevent spread HIV/AIDS. A substantial percentage(91.37%) of students have written safe sex as a preventive measure but less than half of our students mentioned testing for HIV before Blood Transfusion and use of disposable needles and razors, which was unexpected. Other options which showed unexpected low results were No i.v. drug abuse and universal precaution. 55.40% students correctly identified NACO to be National AIDS Control Organisation while 41.73% did not know anything about it. Very few had further extended their knowledge on NACO up to its symbol but could not state anything else.

Attitude: It was good to note that 67.63% of the students did worry about caring for people with HIV, and only 5.76% thought that they would refuse any treatment to HIV patients. However only about half of the students said that they were willing to operate an HIV patient (48.20%) or deliver an HIV positive lady (49.64%). 78.42% of the students asked for a different ward for the HIV patients. This high value again shows the ignorance of the students towards Universal Precautions, as with the use of Universal Precautions HIV patients can be safely kept in the wards and above that it also protects against other infectious diseases.

50.36% and 32.37% of the students said that they will ask a HIV positive person and other people respectively, as to how he/she got AIDS. Which they reasoned as to trace the source of infection and prevent further spread. A good percentage of students (97.12%) agreed that they will continue to invite the HIV positive person social events and 90.65% of the students did not see any reason to limit their participation in community activities. 84.89% would allow their children to play with HIV positive children while the 15.11% who would not allow their children to do so reasoned that children do not understand the seriousness of the disease and may infect themselves by cuts and bruises during play. Most of the students (85.61%) did not think it was necessary to assign separate utensils for people with HIV/AIDS.

While 45.32% of the students said it to be right not to disclose HIV status even to close relation citing reasons of confidentiality by law and the social stigma the disease has, an equal 45.32% said that partners, close relatives and people having sexual relations with the patient should know. This they considered necessary to prevent further spread. 7.91% however did not opine on the matter.

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Conclusion:

Although the students know How and What transmit HIV but their lack of knowledge as to How and What does not transmit HIV is evident. Similarly the students also know as to who are at risk but comparatively don't know who are not at risk. The student's lack of knowledge on clinical grounds is also evident by the low percentages. The students scored very poorly on matters related to prevention and government initiatives. Students also lacked knowledge about Universal Precautions which at this level of study is expected from all.

The students also need to be made aware of the initiatives taken by the government. As these initiatives are taken by taking into account the whole population, knowledge and utilization of these services will be beneficial for the needy.

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