Al Ameen J Med Sci 2013; 6(3):265-271 ● US National Library of Medicine enlisted journal ● ISSN 0974-1143

ORIGINAL ARTICLE CODEN: AAJMBG

A study of Knowledge, Attitude, Behaviour and Practice (KABP) among the attendees of Integrated Counselling and Testing Centre of Tertiary Care Hospital of Northern Hilly State of India

Tripti Chauhan[1*], Ashok K. Bhardwaj[2], Anupam Parashar[1] and Anil K. Kanga[3]

[1]Department of Community Medicine, Indira Gandhi Medical College, Shimla, Himachal Pradesh, India, [2]Department of Community Medicine, RPGMC, Tanda, Himachal Pradesh, India and [3]Department of Microbiology, Indira Gandhi Medical College, Shimla, Himachal Pradesh, India

Abstract: *Background:* In India, low knowledge of HIV/AIDS and low utilization of voluntary counseling and testing (VCT), is a problem especially in the rural areas. Aims: To assess the knowledge, attitude, behaviour and practices (KABP) of HIV seropositive and HIV seronegative clients attending Integrated and testing centre (ICTC) in a tertiary hospital of Shimla, Himachal Pradesh. *Settings and Design:* Cross-sectional study. *Material and Methods:* A total of 525 attendees, in the age group of 15 to < 50 years, who attended ICTC consecutively either voluntarily or referred from different departments of tertiary hospital and from other districts were included as study subjects. After counselling and confirmation of HIV status according to NACO; diagnosis of TB was done as per RNTCP guidelines. The questionnaire was administered to each client to evaluate risky behaviour and KABP about HIV/AIDS. *Statistical analysis:* SPSS version 11 was used. *Results:* 53.5% of seropositives; wherein 35.2% seronegatives demonstrated good knowledge and modes of transmission of HIV/AIDS. However, 15.6% of seropositives whereas 22% seronegatives did not know how HIV/AIDS spreads. 21.4% seronegatives, whereas 15.7% seropositives knew about protection imparted by condom. All the seropositives were sexually active and 63.4% of them had multiple partners in comparison to 82.2% of seronegatives had sexual experience and 8% multiple sexual partners (P < .00001). Moreover, condom usage was nil among both the groups. 20% of seropositives; only 2.8% of seronegatives had sex with commercial sex workers (CSWs) (p < .00001). *Conclusions:* There is need to enhance knowledge and scale up VCT services.

Keywords: HIV/AIDS, voluntary counseling and testing, knowledge.

Introduction

The global problem of HIV/AIDS has expanded uncontrollably in developing countries as it has a linear relationship with opportunistic infections. According to WHO, it is estimated that there are 4 million people living with HIV(PLHIV) in the South-East Asia Region, constituting nearly 11.8% of PLHIV globally. In India, an estimated 270 000 new HIV infections and 250 000 adult and child deaths due to AIDS were reported in 2010 [1]. Five countries in the region, account for the majority of HIV cases, with the prevalence in the general population, estimated to be the highest in Thailand, followed by Myanmar, Nepal and India [2].

There is no cure as such for AIDS and an effective vaccination still not available. Providing young people with basic AIDS education enables them to protect themselves from becoming infected. Young people are often particularly vulnerable to sexually transmitted HIV, and to HIV infection as a result of drug-use. Acquiring knowledge and skills encourage young people to avoid or reduce behaviours that carry a risk of HIV infection [3]. Nevertheless, North India is considered a low knowledge and low prevalence setting [4]

Many features contribute to India's vulnerability concerning the transmission of HIV; India is a low income country with a large and young population, low educational and literacy rate and an increasing level of urbanisation [5]. Integrated Counselling and Testing Centres (ICTCs), previously known as Voluntary Counselling and Testing Centres (VCTCs) provide key entry points for the continuum of care in HIV/AIDS for all

segments of the population [6]. Himachal Pradesh is a small hilly state of India, situated in the north-western Himalayas with a population of 6.8 million [7]. The first case of AIDS in Himachal Pradesh was diagnosed in 1992 and now in 2010, the state has a total of 4,829 cases of HIV, including 1,145 cases of AIDS [8].

In Himachal Pradesh public efforts to contain this hazard are inadequate. India's traditional society and strong social prohibitions lead people to be less receptive to the controversial issues associated with this infection, and this is especially true in the traditional, rural population of Himachal Pradesh [9]. Nevertheless, HIV/AIDS counselling and testing services were offered through VCTC since 1998 in this state; the focus was on sensitization and to provide health education to improve knowledge among general population under one roof. Recognizing that most new infections in this state are among the younger population (18-24 years) [10]. So, it becomes important to have the baseline data on the number of persons who are unaware and the gaps in their knowledge as very little is reported in terms of public awareness and education in the state. The likelihood of an increased rate of infection is a constant threat as not much data exists on prevalence rates among general people.

Subjects and Methods

The present study was conducted among the attendees of the ICTC at the Indira Gandhi medical college, Shimla, Himachal Pradesh, India. This study included 525 consecutive attendees as study subjects who attended ICTC either voluntarily or being referred from various departments of the hospital and other districts of the state. Ethical approval for the study was obtained from the institutional committee for ethics. Free and informed written consent was obtained from all the participants and confidentiality of information was maintained in accordance with the principles embodied in the declaration of Helsinki and the International Guidelines for ethical review of Epidemiological Studies. A pretested structured questionnaire was administered to all the clients by the investigator only.

The questionnaire was filled only by an investigator, and was not filled in part by study subjects and investigator. After the pretest counselling, blood samples were collected. As per the strategy and policy prescribed by NACO, HIV status was confirmed by performing enzyme-linked immune-sorbent assay (ELISA), by using two different antigens and a rapid test. Data collected included the sociodemographic characteristics of the clients, including age, level of education, marital status, and occupation. Risky behaviour was measured by collecting information on client's sexual behaviour, frequency of condom use, sex with sex workers, non-spousal sex partners. The information regarding socio-demographic characteristics, behavioural patterns and the information on HIV risk perceptions and STI symptoms were also collected. Participant's HIV risk perception was assessed by responses to a question on their perceived risk of getting HIV. Participants were defined as having recent STI symptoms if they indicated any of the following in the past 12 months: genital discharge genital ulcers; swelling in groin area; itching in genital area; or frequent painful urination. Chi-square analyses were used to detect differences in HIV risk indicators by socio-demographics among clients; the significance for all analyses was set at $P < 0.05$. All statistical analyses were conducted using SPSS 11.0.

Results

Out of total 525 study subjects, 198(37.7%) were HIV positives (Table 1). Among seropositives, 85.9% were in the age group of 25-44, 4.5% were unmarried, 19.7% were widowed, 8.6% were illiterate, having received no formal education; an additional 48.5% received only primary education and only 3.0% were graduates and post graduates. However, what was alarming that among the female seropositives, 36.4% were housewives and 28.6% were working as labourers & cultivators which gives a strong indication of HIV being penetrated in the general population and 29.8% were seropositive males who primarily were occupied as drivers. Rest 327(62.3%) were HIV seronegatives and among them, 67.3% were in the age group of 25-44 years, 26.3% were unmarried, 19.9% were illiterates and 15.3% were educated upto graduation and postgraduation. 19.3% were occupied as professionals and 11% as drivers.

Table-1: Socio-demographic characteristic of the study subjects		
Age group in years	**HIV positive (n = 198)**	**HIV negative (n = 327)**
15-24	14 (7.1)	69(21.1)
25-44	170(85.8)	220 (67.3)
45-50/>	14 (7.1)	38 (11.6)
Literacy Status		
Illiterate	17 (8.6)	65 (19.9)
Primary	96 (48.5)	90 (27.5)
Matric	63 (31.8)	81 (24.8)
Secondary	16 (8.1)	41(12.5)
Graduate & Postgraduate	6 (3.0)	50(15.3)
Marital status		
Married	146 (73.7)	226 (69.1)
Unmarried	9 (4.5)	86(26.3)
Widowed	39 (19.6)	15 (4.6)
Divorced	2 (1.1)	0 (0)
Living together	2 (1.1)	0 (0)
Occupation		
Student	1 (.5)	25(7.6)
Driver	59 (29.8)	36 (11)
professionals	13(6.6)	63 (19.3)
Housewife	72 (36.4%)	62 (19)
Labourers/cultivators	53(26.7%)	141(43.1)
*Figures in parenthesis denote column percentages		

HIV/AIDS Knowledge: As shown in (Table 2) a high proportion 53.5% of seropositives as compared to 35.2% seronegatives demonstrated good knowledge of HIV/AIDS and its modes of transmission. Nevertheless, 15.6% of seropositives did not know about any mode of transmission of HIV/AIDS as compared to 22% seronegatives. Among seropositives, 30.8% knew that HIV/AIDS could be transmitted via unprotected sexual contact whereas 22.7% knew that sharing contaminated syringes/needles could be one of the mode of spread as compared to 42.2% seronegatives knew that unprotected sexual contact and 29.4% knew that sharing contaminated syringes/needles contribute in the spread of HIV/AIDS respectively (p<.002). Regarding the preventive measures, seronegatives were more knowledgeable 21.4% about the protective effect of correct use of condom for every sexual intercourse in comparison to only 15.7% seropositives. Moreover, seronegatives were 2 times more knowledgeable with regard to protective effects of the following behaviour of staying with one faithful partner and adopting safe sexual practices (p < .00001). Nearly 90% of attendees believed that HIV/AIDS is not curable.

Sexual Practices and Disclosure of HIV Status: Among seropositives, none were reported to have a steady partner and stated that they did not currently have a sexual partner. When asked how many of them had multiple sexual partners over the past one year, 61(30.8%) reported having more than one sexual partner, of these 59(63.4%) were males and only 2(1.9%) were females as compared to seronegatives, only 26(8%) had sex with multiple sexual partners over the past one year (P < .00001). Of the 31(15.7%) who reported having an STD, 25(12.6%) took STD treatment within the past year as compared to seronegatives 41(12.5%) who had STD, 37(11.3%) reported of taking treatment for STD (P < .51), (P < .65).

Reports of condom use was nil and did not show any relation with age and literacy. All seropositive patients attending the ICTC had known that they are HIV positives and all of them participated in the study and all the seropositives who were interviewed reported having disclosed their HIV status to at least 2 persons of close relation. Of the 196(98.9%) seropositives, who reported having been sexually active, 146(73.3%) were married and had spouse, of these 83(42%) were males and 63(32%) were females, however, 42(21.2%) claimed to be not at risk of having HIV/AIDS but the fact that 40(20%) who had their sexual encounter with commercial sex workers (CSWs) were males, have grave implications, as it has been shown that condom usage was almost nil due to ignorance.

Usage of condom is most serious issue among those having casual sexual relations and need to focus for prevention of spread of HIV/AIDS as compared to seronegatives,

269(82.3%) were sexually active (p < .00001). 226(69.1%) were married and had spouse, of these 145(44.3%) were males and 81(24.8%) were females and only 9(2.8%) had sex with CSWs (p< .00001), 1(11.1%) of these used condom while having sex with CSWs (P< .00001) (Table 2).

Table-2: Knowledge, Attitude, and Practices of study subjects

Modes of transmission*	HIV positive (n = 198)**	HIV negative (n =327)**	P-Value
Did not know about any mode	31 (15.7)	72 (22)	p < .002
Unprotected sex	61 (30.8)	138 (42.2)	
Contaminated needle	45 (22.7)	96 (29.4)	
Infected mother to child	14 (7)	16 (4.9)	
Infected blood	10 (5)	29 (8.9)	
Modes of prevention*			
Did not know about any mode	31 (15.7)	76 (23.2)	p < .00001
Safe sex	34 (17.2)	114 (34.9)	
Condom use	31 (15.7)	70 (21.4)	
Safe needle use	1 (.5)	2 (.6)	
Attitude			
Agree with screening before marriage	32(16)	72(22)	p < .05
Agree with voluntary testing	34(17.2)	93(28.5)	p < .001
Practices			
Sexually active	196 (98.9)	269 (82.2)	p < .00001
Had sex with Multiple partners	61 (30.8)	26(8)	P < .00001
Had sex with CSW**	40 (20.2)	9 (2.8)	P < .00001
Used condom	0(0)	1(.3)	P < .00001
Had STD**	31(15.7)	41(12.5)	P < .51
Was treated for STD	25 (12.6)	37 (11.3)	P < .65

*Figures in parenthesis denote column percentages *Multiple Responses
**CSW=commercial sex worker **STD = Sexually Transmitted Disease

Generally, the respondents seem to have favourable attitude on prevention of the diseases. Majority of attendees approved screening before marriage.

Discussion

This study was the first of its kind as most of the previous studies were conducted among the students. The fact that all the attendees who participated in the study had heard of HIV/AIDS and overall awareness levels related to HIV/AIDS and prevention among the attendees interviewed for the study were reasonably high. The study enrolled those who were 15 years of age and above, with the assumption that wider range of sexually active segment of the population were targeted. The present study revealed that among the attendees, 53.5% seropositives and 35.2% seronegatives had good knowledge of modes of transmission. Most common mode of transmission known to both the groups was unprotected sexual route, 30.8% and 42.2% in seropositives and seronegatives respectively. Contrastingly, other studies revealed gaps in the awareness about other modes of transmission, where only 48.2% of the students could name sexual route and in another Indian youth are considered to be least aware of HIV modes of transmission because they are less likely to engage in premarital sex [11-12].

But the study from Karnataka revealed high proportions 98% of respondents were aware of sexual transmission of HIV [13]. Whereas, the study conducted among the adolescent girls reported a higher proportion 77% of girls being aware of the relationship between high-risk behaviour such as multiple sex partner and HIV. Studies from other countries reported half of the students being aware of sexual contact as one of the mode of HIV transmission [14]. However, 63.7% demonstrated good knowledge of HIV in another study [15]. This indicates that knowledge regarding how HIV/AIDS spreads, need to be focussed as in this study, gaps among both the groups were seen in the awareness about other modes of transmission wherein only 14(7%) and 10(5%) seropositives as compared to seronegatives, only 16(4.9%) and 29(8.9%) reported mother to child transmission and infected blood transfusion respectively. Contrastingly, other study showed high proportions 66.6% of students had knowledge of infected blood as mode of transmission [16].

Our findings emphasised that in this state, children in the secondary school should be educated about safe sex through awareness programmes, to postpone the onset of sexual activity among them. In the present study, 124(62.6%) seropositives as compared to 133(40.7%) seronegatives were aware about HIV/AIDS being preventable. However, awareness about the different methods of prevention was rather low. Only 31(15.7%) seropositives and 70(21.4%) seronegatives had knowledge about condom as a means of prevention. On the contrary, studies from other countries showed high knowledge, 56.7% where rural migrants knew that consistent condom use could prevent HIV transmission [17] and 34.8% of respondents claimed that condom confers protection in another [18]. On the other hand, the high level of knowledge in developed countries could be attributed to higher levels of education and awareness of health matters as well as the less conservative attitudes towards sex-related issues. Notably, the current findings further document that both seropositives and seronegatives were sexually active 196(98.9%) and 269(82.2%) respectively which is quite alarming to have noticed promiscuous behaviour. Furthermore, substantial deficiencies in the knowledge pertaining to the importance of sexual abstinence in the prevention and misconceptions regarding the spread of HIV infection by kissing and sharing food were recognised in students especially. These gaps in the knowledge were fulfilled through counselling, however, a mechanism should be developed so as to continuously strengthening the knowledge of people and positive attitude towards behaviour change. Moreover, it was observed that 61 (63.4%) of seropositives had sexual encounter with more than one partner as compared to 26(8%) seronegatives. This indicates increase rate of indulgence in extramarital sex as in contrast, a study conducted in China only 6.0% had more than 1 sexual partner [19]. This difference may be attributable to difference in levels of education.

In terms of self-assessment of risk, most of the interviewees considered themselves to be at low or no risk 21.2% and 72.7% in seropositives and seronegatives respectively. It was interesting to note that either there was clearly a risk of under-reporting on highly personal questions such as sexual behaviour or this draws attention to the fact that low knowledge and awareness levels can give the false notion that one is not at risk. In the present study, it was observed that significantly more seropositives, 20.2% reported HIV risk behaviour such as sex with CSWs where in only 2.8% seronegatives reported having sex with CSWs. On the contrary, it was observed that in another study, conducted in Surat showed that 4.4% of workers reported of having had their first experience of sex with CSWs and 7. 6% of workers have regular sexual activity with CSWs [20].

The present study also revealed that none of the seropositives used condoms consistently as compared to 11.1% of seronegatives used condom while having sex with CSWs. Contrastingly, a study reported 48.8% workers had not use condom.15 Condom use was: negligible, non-consistent by all the attendees. This implies a significant risk for contracting HIV or other STIs, both for the individual and for the partner(s). Awareness and education regarding HIV in ICTCs need to emphasize consistent condom use. Recognizing the fact;

22% of seronegatives as compared to 16% of seropositives were agreeing to have screening before the marriage ($p < .05$), emphasis should be laid on to put comprehensive prevention and awareness programmes in place for all and necessary changes to be brought in the attitudes. Similarly it was also observed in the present study that 93(28.5%) seronegatives, were reported to be more willing to have VCT as compared to 34(17.2%) of seropositives ($p < .001$). Similarly, in the study conducted in other countries reported that among the clients of VCTC, firstly, women are more willing to have VCT, especially if knowledge of their status would assist in preventing HIV transmission to their babies. Secondly, the fear of testing positive among sexually more-adventurous males could discourage their participation in VCT. The reasons provided by the participants in this study for disliking VCT, including fear of the unknown, stigma and discrimination, absence of cure, cost and availability of treatment [18].

Limitations: The present study has several limitations. As this study was designed as a self-administered questionnaire, it is difficult to validate the answers. The clients may over report socially desirable answers and under report undesirable ones.

Summary: This study found that more than half of the attendees have fair amount of knowledge of HIV/AIDS, and a majority were willing to have VCT. However, misconceptions fear and gaps in knowledge regarding HIV/AIDS coupled with restricted access to ICT services are still prevalent. A considerably higher percentage reported having had sex with multiple partners and CSWs. Reported condom use was nil and non-consistent, both with regular partners, casual partners and sex workers.

Conclusion

Our findings suggest the need to redirect the efforts to underserved hard and difficult areas. These areas are disadvantaged by their low literacy level, limited access to communication media and to health facilities due to difficult terrain. The important information about the levels of knowledge of modes of transmission and prevention of HIV among ICTC attendees who have practised risk factors have also been provided. Finally, this study also highlights the significant impact of ICTCs and their further strengthening and monitoring by collection and analysis of anonymised data.

Acknowledgement

We acknowledge cooperation of all the individuals who participated in the study.

References

1. UNAIDS, World AIDS Day Report 2011.
2. Tuberculosis- WHO Report. Tuberculosis Control in the South-East Asia Region. The Regional Report. *WHO regional office for South- East Asia,* 2012.
3. UNESCO, A strategic approach: HIV & AIDS and education 2009.
4. National AIDS Control Organization. HIV/AIDS epidemiological surveillance & estimation report for the year 2005. *NACO, Ministry of Health & Family*.
5. Sengupta D, Rewari BB, Shaukat M, Mishra SN. Study on Clinico-epidemiological profile of HIV patients in Eastern India. *J Postgrad Med,* 2006; 31:237-40.
6. State AIDS Control Society, Himachal Pradesh. *Voluntary Counseling and Testing Center (VCTC) Report.* June 2006.
7. www.census2011.co.in/census/state/himachal pradesh. [*Last accessed on* 26/07/12].
8. http://www.topnews.in/health/number-aids-cases-fall-himachal-29453. [*Last accessed on* 26/07/12].
9. Ghosh S, Chhabra R, Springer C, Sharma S K. A Study of Knowledge, Attitude, and Sensitivity about HIV/AIDS among school teachers in North-Western Himalayas. *Ethnicity & Disease* 2008; 18.
10. www.hpsacs.org/ictc 2.asp. [*Last accessed on* 26/07/12].
11. Lal P, Nath A, Badhan S, and Ingle G K A Study of Awareness about HIV/AIDS Among Senior Secondary School Children of Delhi. *Indian J Community Med.* 2008; 33(3):190–192.
12. Banerjee P, Courtney M. Knowledge, Perceptions and Attitudes of Youths in India Regarding HIV/AIDS: A Review of Current Literature. The International Electronic *Journal of Health Education* 2005; 8:48-56.
13. Unnikrishnan B, Prasanna P Mithra, RT, and Reshmi B. Awareness and Attitude of the General Public Toward HIV/AIDS in Coastal Karnataka. *Indian J Community Med.* 2010; 35(1):142-146.
14. Yitayal S, Agersew A, Amanuel G, Afera G Andarge K, Alemayehu G et al. Assessment of knowledge, attitude and risk behaviours towards HIV/AIDS and other sexual transmitted infection

among preparatory students of Gondar town, north west Ethiopia, *BMC Research Notes* 2011; 4:505.
15. Li S, Huang H, Xu G, Cai Y, Shi R, Shen X et.al. HIV/AIDS-related knowledge, sources and perceived need among senior high school students: a cross-sectional study in China. *Int J STD AIDS.* 2009; 20(8):561-5.
16. Kumar P, Pore P, Patil U. HIV/AIDS Related KAP Among high-school Students of Municipal Corporation School in Pune. *An interventional study National Journal of Community Medicine* 2012; 3.
17. Na He, Jinling Zhang, Jinjian Yao, Xiuhong Tian, Genming Zhao, Qingwu Jiang. Knowledge, Attitudes, and Practices of Voluntary HIV Counseling and Testing Among Rural Migrants in Shanghai, China. *AIDS Educ Prev.* 2009.
18. lliyasu Z, Abubakar IS, Mohammed K, Muktar HA. Knowledge of HIV/AIDS and Attitude towards Voluntary Counseling and Testing among Adults. Kano, Nigeria and Nashville, Tennessee. *Journal of the national medical association,* 2006; 98:12.
19. Namaitijiang M, Khadijah S, Anwar A, Nurungul T & Rena M. Knowledge, Attitude and Practice Regarding HIV/AIDS among University Students in Xinjiang. United Nations University–International Institute for Global Health Universiti Kebangsaan Malaysia Medical Center Jalan Yaacob Latiff, Bandar Tun Razak, Cheras- 56000 Kuala Lumpur, Malaysia. *Global Journal of Health Science* 2010; 2:2.
20. Bhautik M, Jay P, Sarita M, Vimalkumar T. A Profile of Knowledge and Sexual Behaviours among textile workers in context of HIV and AIDS in Surat city. Department of Community Medicine, SMIMER, Surat. *National Journal of Community Medicine*, 2010; 1:97.

*All correspondences to: Dr. Tripti Chauhan, MD. Assistant Professor, Department of Community Medicine, Indira Gandhi Medical College, Shimla-171006, Himachal Pradesh, India. E-mail address thakurtripti2010@gmail.com