Original Article

ID: JCDR/2012/3982:2305

Knowledge, Risk Perceptions and Attitudes of Nurses Towards HIV in a Tertiary Care Hospital in Mangalore, India

Infectious Diseases Section

BASAVAPRABHU ACHAPPA, SOUNDARYA MAHALINGAM, PRIYANSHA MULTANI, PRANATHI M, DEEPAK MADI, UNNIKRISHNAN B, JOHN T RAMAPURAM, SATISH RAO

ABSTRACT

Introduction: Infectious diseases like HIV are on the rise in developing countries like India, which puts a heavy burden on the health care needs. Nurses have a key role and they spend considerable time taking care of the HIV positive patients who are admitted to hospitals. Hence, a study was conducted in our hospital to have an insight into the knowledge of nurses about HIV, their apprehensions while taking care of such patients and their attitudes and willingness to take care of them.

Methods: This was a cross sectional study which was done among 200 nurses of KMC Hospital, Mangalore. They were given a validated questionnaire which comprised of 67 items which included the knowledge on the spread of HIV, universal precautions, risk perceptions and their attitudes towards the HIV positive patients. Their responses were analyzed by using the SPSS software.

Results: Of the 200 nurses who were selected, 152 completed the questionnaire. Regarding the knowledge of the HIV transmission, the correct response for the widely advertised modes of transmission were higher-sexual contact (97.4%) and vertical transmission (88.8%). However, 11.2% did not know about the mother to child transmission and 28.9% did not know about the transmission through breast feeding. 90.1% felt that HIV could be transmitted by the sharing of plates and 83.6% felt that it could be transmitted through mosquito bites. 93.4% knew about the universal precautions and 78.3% routinely practised it. 80.3% were aware of the post exposure prophylaxis.79.2% described that caring for the HIV positives was rewarding, 86.5% were willing to assist in the operations on HIV patients and 84.9% were willing conduct deliveries.

13.4% felt they had a right to refuse care for the HIV patients and 97% felt that the surgical patients needed to be routinely tested for HIV.

Conclusions: This study demonstrated that there were deficiencies in the knowledge about HIV and that false beliefs existed among the nurses about the spread of HIV. There is a need to improve the awareness about HIV and HIV patient care through training programmes to clear the misconceptions among the nurses so that the HIV positive patients are not discriminated against and are treated without discrimination.

Key Words: Nurses, HIV, Risk perceptions

INTRODUCTION

The Human Immunodeficiency Virus (HIV) which belongs to the family of retroviruses, is the causative agent of AIDS (Acquired Immune Deficiency Syndrome). HIV dismantles the immune system of the body by attacking the T- Helper cells and thus preventing the stimulation of the B cells which produce antibodies. HIV was first identified in India among commercial sex workers in Chennai in 1986 [1]. Now, the HIV infection is present in all the states and territories of India. A high prevalence of HIV is present in the southern states due to sexual transmission and in the north eastern states where IV drug abuse is common. The high prevalence of HIV in the low socio economic groups is due to the internal migration of large groups of men (truck drivers, miners and military personnel), civil unrest, drug abuse, a high prevalence of STDs and low literacy rates, gender inequality and poverty [2]. It has been forecasted to affect even a larger population in India in the coming decade and it is steadily percolating into the general population from the high risk groups. The HIV data of NACO 2006 showed that the overall prevalence of the HIV positive adults was approximately 0.36% and that the prevalence of the HIV positive adults in Karnataka was 0.81%, which was higher than the national average. Karnataka contributes upto 11% of the people who live with HIV/AIDS in India [3]. With a sudden rise in the HIV infection, especially in the economically productive age groups, the health care system has been confronted with the challenging and complex task of taking care of these patients. HIV has created its own emotional stresses for the health care sector. The negative attitudes of nurses toward the HIV positive patients occur because of the occurrence of high mortality which is associated with the disease and the stigmatization of the persons with AIDS [4]. This will have a negative bearing on the quality of the health care which is offered to these patients [5]. Several studies have shown that a better knowledge about HIV among the health care workers reduced the anxiety about the care of the HIV positive patients. This study was conducted to assess the knowledge about HIV/AIDS, the risk perceptions and the attitudes of nurses who are the primary care givers towards the HIV patients, about which only limited information was available from this region. The hypothesis for the study was that nurses had negative attitudes towards the care for HIV patients and also, they had a high risk perception of acquiring HIV by caring for the patients with HIV, as was shown by previous studies. So, this study was done to assess the same at our centre.

MATERIALS AND METHODS

Study Setting: This study was conducted at Kasturba Medical College Hospital, Attavar, Mangalore, amongst the nursing staff of the hospital. The approval of the institutional ethics committee was obtained before the commencement of the study.

Study Design: Cross-sectional study

Sample size: 200 nurses. Inclusion criteria: All the nurses who worked in Attavar, hospital

Exclusion criteria: All the nursing students and nurses who had not given their consent to participate in the study.

Study Duration: 1 month

Sampling: Non-randomised sampling

Data collection: The data was collected by using a pre-tested, validated, semi-structured, anonymous questionnaire. It was a self administered, written questionnaire which comprised of 67 items, which was distributed amongst the nurses who worked in the hospital during a time period of 3-4 weeks. The questionnaire was pilot tested amongst 10 members of the nursing staff with respect to its clarity, comprehensibility and cultural appropriateness to this institutional set up.

The questionnaire is divided into 4 main sections and the required information was collected under the following broad categories.

1. Demographic variables.

2. Knowledge of the spread of HIV and of the awareness of the terms 'universal basic precautions' and 'post exposure

prophylaxis'.

3. Attitudes of the nurses towards the HIV positive patients, including some questions on the ethical and moral issues which were associated with the subject.

4. The risk perception of catching HIV amongst the nurses.

The responses to the questions about their knowledge on the transmission of the virus and the awareness of the terms 'universal basic precautions' and 'post exposure prophylaxis' were three in number and the respondents were requested to encircle their response across the respective item, as 'Yes', 'No', or 'Not sure'.

The responses to other questions regarding the attitudes and the perceptions that were chosen were of a Likert scale type, comprising of 5 options which ranged from 'strongly agree' at one end of the spectrum to 'strongly disagree' at the other end. For the other questions, the respondents were requested to tick their response/s among the options which were provided.

Data analysis: The data which was collected was entered into a computer in MS Excel and the analysis was done by using SPSS, version II. The Chi square test was done and a p value of < 0.05 was taken as statistically significant.

RESULTS

Demographics: Of the 200 study subjects who were selected, 152 gave their consent and completed the questionnaire. A majority of the subjects were females (96.1%) [Table/Fig-1]. The qualifications of the participants in the study were B Sc nursing (16.4%), diploma in nursing (17.1%), general nursing and midwifery (62.5%) and B Sc nursing students (3.9%). Most of the subjects had a previous experience of working with the HIV positive patients (84.2%)

Knowledge on the HIV transmission:

The question numbers 1 – 22 were specifically related to the knowledge on the mode of transmission of HIV. Among them, the correct responses for the widely advertised modes of transmission were relatively higher, eg: sexual contact (97.4%), vertical transmission(88.8%), breast feeding (78.1%), blood transfusion (98.7%), sharing of needles (98.0%), needle stick injuries (96.7%) and contact through traumatized skin (86.2 %). However the % of the respondents who gave a correct about the knowledge of the transmission of HIV by piercing the ears and nose (50.7%), by contact with the conjunctival mucosa(47.4%), by contact with the oral mucosa (47.4%) and a higher risk of transmission with a hollow needle (10.5%), were relatively less.

The number of respondents who gave correct responses regarding the statements which judged their knowledge about the modes which are wrongly perceived to spread HIV was less than heartening. The percentage of the respondents who identified the correct response for the sharing of plates was 90.1% , for urine, it was 62.5% , for mosquito bites, it was 83.6 %, for coughing, it was 82.2 %, for faecal matter, it was 65.5%, for saliva and tears, it was 48.7%, for toilet seats, it was 84.2% and for sputum, it was 50.7%. There were gaps in the knowledge regarding the basics of the transmission of HIV and these misconceptions led to a bias in giving care to the patients [Table/Fig-2].

Knowledge on the use of the universal precaution:

Universal precautions (UP) have been introduced to minimize the risk of transmission and to protect the caregiver. The knowledge on this can lead to a deficiency in the patient care and neglect. The respondents of our questionnaire had heard of UP (93.4%) and they knew that it applied to all the patients and not just to the care of the HIV positive patients (85.5%). 78.3% routinely used gloves, mask and PPE. 80.3% insisted on using goggles and aprons if the patient was positive for HIV.

Post exposure prophylaxis:

Only a dismal 80.3% were aware of PEP. This was alarming because it is expected of health care workers to be educated in this regards. Since this study incorporated only trained HCWs, it was expected that each and every person on the staff were aware about seeking help and knowing that measures existed, which could be employed following occupational exposure. 79.6% respondents were rightly aware that PEP reduced the risk of the transmission if it was taken immediately. 85.5% of the HCWs felt

Serial no.	characteristics	Number responded	Percentage %
1	Gender:		
	Male	6	3.9
	Female	146	96.1
2	Qualifications:		
	BSc Nursing	25	16.4
	Diploma nursing	26	17.1
	GNM Nursing	95	62.5
	Bsc Nursing Student	6	3.9
3	Previous Experience:		
	Yes	128	84.2
	No	24	15.8

[Table/Fig-1]: baseline characteristics of study subjects

Serial no.	Mode of transmission	Number responded	Percentage correct
1	Sexual	152	97.4
2	Sharing plates	152	90.1
3	Mother to child	152	88.8
4	Urine	152	62.5
5	Mosquito bite	152	83.6
6	Breast feeding	152	71.1
7	coughing	152	82.2
8	Fecal matter	152	65.5
9	Blood transfusion	152	98.7
10	Piercing ears and nose	152	50.7
11	Sharing of needles	152	98.0
12	Saliva and tears	152	48.7
13	Sputum	152	50.7
14	Toilet seats	152	84.2
15	Cerebrospinal fluids	152	68.4
16	Contact of blood through intact skin	152	49.3
17	Contact of blood through traumatized skin	152	86.2
18	Contact with conjunctival mucosa	152	47.4
19	Contact with oral mucosa	152	47.4
20	Needle stick injuries	152	96.7
21	Risk of spread is same with hollow and solid needles	152	10.5
22	Healthcare personnel can be medium of spread to patients	152	39.5
23	Heard of universal precautions	152	93.4
24	Universal precaution applicable only to HIV	152	85.5
25	I routinely use gloves, mask and other protective gear	152	78.3
26	Additional gears like goggles, aprons used if patient is HIV positive	150	80.3
27	I have come in contact with body fluids of positive within last1 year	152	7.9
28	Aware of the term post exposure prophylaxis	152	80.3
29	PEP reduces risk of transmission if taken immediately	148	79.6
30	I feel my knowledge of HIV transmission is adequate	152	85.5
31	I feel a need for improvement in knowledge	152	86.8
32	Hospital has a clear guidelines on hiv positive patients	152	80.3
33	I feel difficulties should be addressed by the hospital	151	75.5

[Table/Fig-2]: knowledge about transmission of HIV

that their knowledge was adequate and 86.8% felt that there was always room for improvements and for learning new advances. It is always easier to work in a hospital or a health care setting where clear guidelines exist regarding the care of the HIV patients and the precautions which have to be observed. 75.5% of the respondents suggested that the difficulties which were faced by the

1	Caring for hiv positive is rewarding experience	149	79.2
2	Social support for hiv is adequate	152	1.2
3	You need to be more sympathetic while caring for hiv patients	149	37.6
4	I feel worried about caring hiv positives	152	32.9
5	Health personal should have the right to refuse hiv positives	149	13.4
6	I am willing to assist in operating hiv positives	152	85.5
7	I am willing to assist in delivery of mothers who are hiv positive	152	84.9
8	I would prefer not to care for patients with hiv/aids	149	5.4
9	Hiv positives need to be nursed separately from other patients	151	53.6
10	Surgical patients need to be routinely tested for hiv status on admission	151	97.4
11	All patients need to be routinely tested for hiv	150	87.3
12	Hiv patients case sheet, beds to be marked	151	64.9
13	Patients with hiv/aids should have a separate ward	152	46.1
14	In some situations hiv testing can be done without consent	152	66.4
15	It is appropriate to disclose the status to relatives, sexual partners without consent.	152	60.5
16	Testing for hiv /aids should be made compulsory for all health personal	152	89.5
17	A health professional with hiv should not be working in areas which require contact with patients	152	48.0
18	Patients with hiv behave immorally and they deserve the disease	151	48.3
19	Support to hiv positive from family is adequate	152	62.5
20	Hiv patient exhibit behaviour characteristics	152	51.3
21	Taking care of hiiv patients with opportunistic infections help prolong their survival	152	69.7
22	I feel my fear towards catching hiv is justified	152	42.1
23	I feel in service promotion of nurses improves the quality of care to hiv positives	152	61.2
24	I feel increments and/or incentives to nurses improve the quality of care to hiv positive	152	39.5
25	I feel nursing for hiv patients in special rooms is no superior to general wards	152	53.6
26	I feel nurses should take care of patients with sympathy and skill irrespective of their hiv status	151	90.8
27	I would discourage the youngsters to join nursing because of risk of catching hiv	152	21.7
28	I feel helpless while caring for hiv positive	152	35.5
29	As nurses we can remove wrong ideas and beliefs about regarding spread of hiv	152	85.5

[Table/Fig-3]: Attitude of nurses towards HIV positive patients

1	Health personal have a high risk of catching blood borne viruses while caring for patients	152	90.1
2	I worry about catching hiv/aids at work more than other BBVs.	151	47.7
3	I worry about catching other diseases from hiv positive patients like TB	152	66.4

[Table/Fig-4]: Risk Perceptions Amongst Nurses Caring For Hiv Positive Patients

HCWs should be addressed regularly by the hospital in form of periodic meetings.

ATTITUDE OF NURSES:

The attitude of the nurses in caring for the HIV patients was positive, as 79.2% described it as a rewarding experience. 86.5% are willing to assist in the operations on HIV patients, 84.9% were willing to assist in the delivery of the HIV positive mothers and 85.5% believed that as nurses, they could remove the wrong ideas and beliefs regarding the spread of HIV. 89.5% agreed that there was a need to take more precautions for the patients with HIV/AIDS. 61.2% believed that the service promotions of nurses would help in improving the quality of the care and 39. 5% felt that increments and incentives were required for the nurses to improve the quality of the care. 32.9% of the nurses were worried about themselves while caring for HIV patients and 13.4% believed that the health personnel should have the right to refuse care to such patients. A very significant number (80.5%) thought that it was appropriate to disclose the HIV status of the patients to their relatives and their sexual partners without their consent. This point had to be addressed and clearly instructed regarding the legality of this issue and regarding the professional secrecy and ethics. 48.3% felt that the patients who got infected with HIV because of immoral practices deserved the disease and 42.1% felt that their fear of getting infected with HIV was justified. 21.7% said that they would discourage youngsters from joining nursing as they had a risk of getting infected with HIV. 61.2% thought that social support was adequate for the patients. 53.6% felt that the HIV positives needed to be nursed separately. 97.4% feel that the surgical patients needed to be routinely tested for HIV. 87.3 felt that all the patients needed to be routinely tested for HIV. 46.1% felt the need for separate wards for the HIV patients [Table/Fig-3].

RISK PERCEPTIONS AMONG NURSES:

90.4% felt that they were faced with a high risk of being infected with blood borne viruses. 44.7% were worried about getting infected with HIV/AIDS than other BBV. 66.4% were worried about getting infected with other diseases like TB [Table/Fig-4].

DISCUSSION

The response rate in this study was 76%, which is similar to that of other studies which were related to the knowledge, attitudes and risk perceptions about HIV/AIDS [6]. It is of concern that 11.2% didn't know about the mother to child transmission and that 28.9% didn't know about the transmission through breast feeding. The knowledge on the fact that sexual contact with an HIV infected person could result in the transmission of HIV was high (97.4% answered correctly) in our study group, which was much higher as compared to that in a study which was done by Bhosale et al., [13] , which showed that only 68% of the subjects knew that sexual contact was a mode of HIV transmission. Also, the knowledge on HIV transmission was poor in a study which was done by Eman Taher et al., [14] in Egypt, which showed that more than 26% and 9% of the undergraduate and postgraduate nursing students respectively did not know about the sexual mode of transmission of HIV. A very large population of nurses believed that HIV could be transmitted by sharing plates, through contact with urine, faeces, saliva tears and sputum of the HIV patients and through mosquito bites and toilet seats. This result was comparable to that of a study which was done in rural India [2]. This indicated huge gaps in the knowledge on the ransmission of HIV and on the dire need for training of nurses in this regards. The modes that are wrongly perceived to transmit HIV can only increase the discrimination and deprive the patients of proper care. By increasing the knowledge on the mother to child transmission perinatally and via breast feeding among the nurses, the quality of the patient care can be substantially increased and appropriate advice to the mothers and also the good health of the babies can be ensured. Only 10.5 % knew that the risk of the spread of HIV through a hollow needle was more than that which was possible through a solid needle. A shocking 85.5% of the nurses thought that the Universal Precautions wereapplicable only for treating the HIV patients and only 93.4% had heard of the Universal Precautions. Most of the nurses felt that all the patients needed to be routinely tested for HIV. But it has to be noted that the testing for HIV was more expensive than using the Universal Precautions [7], and 80.3% were aware of the term 'PEP'. Also, a large proportion wanted to improve their knowledge about HIV and they felt that the difficulties that they faced in this regards should be addressed by the hospital. A very large proportion said that caring for HIV was rewarding and that the willingness to care and assist in surgeries for HIV positive patients was higher than that which was observed other studies [2, 8, 9,15]. A study which was done by Adetoyeje Oyeyemi et al., [16] in Nigeria, showed that nurses had a poor attitude and willingness to care for the HIV patients as compared to that which was found in our study. Only 5.4% said they would not prefer to care for the HIV positive patients and 13.4% said they should had the right to refuse care to the HIV positive patients, which is much lower than that which was found in other studies [2, 8,10]. The willingness to care for the HIV positive patients was proportional to the previous work experience with HIV positive care [2,11,12]. Service promotions seemed to be a boosting factor. 90.8% felt that all the patients should be taken care of with compassion and skill, irrespective of their status. In spite of the high proportion of willingness in caring for the HIV patients, negative attitudes took the upper hand when it came to the testing for HIV without consent and disclosure of the patient's status without the consent of the patient. More than half the subjects felt that the HIV positive patients needed to be nursed separately from other patients. Also, there was a strong resentment towards these patients, as most them thought that they behaved immorally and exhibited certain behavioural characteristics and that they deserved such a disease. Considering the fact that a maximum percentage of the HIV positive patients had contracted it as a sexually transmitted disease and the taboo which was associated with it in an outwardly morally rigid society did influence the opinion of a caregiver. 48% of the respondents believed that the patients deserved the disease and this led to a prejudice in the patient care.

A very high proportion (91%) of the nursing personnel in our study believed that they were at a high risk of contracting HIV by nursing the HIV patients and 21.7% went to the extent of saying that they would discourage young people from pursuing nursing as a career. There was clearly an exaggeration of the fear of contracting HIV, since the respondents were trained personnel who were educated extensively with regards to the Universal Precautions, post prophylaxis. It is true that every Health Care Worker is in more danger of acquiring HIV as a professional hazard and studies like ours are giving proof that such fears need to be addressed by counselors or an HIV cell. The prejudice of

the caregiver needs to be addressed for the nursing standards to improve.

REFERENCES

[1] Simoes Eric AF, George BP, Jacob JT, Solomon NS, Lakshminarayanan S, et al., Evidence of the HTLV-III infection in prostitutes in Tamil Nadu (India). *Indian J Med Res* 1987; 85 : 335-8.

[2] Kermode M, Holmes W, Langkham B, Thomas MS, Gifford S. HIV-related knowledge, attitudes, and risk perceptions amongst nurses, doctors, and other healthcare providers in rural India. *Indian J Med Res*. 2005; 122: 258 – 64.

[3] http//:www.nacoonline.org; HIV data 2006.

[4] Van Dyk AC 1992: AIDS: the health care challenge. Pretoria: Alteks.

[5] Baylor RA, McDaniel AM. Nurses attitudes towards the caring for patients with the Acquired Immunodeficiency Syndrome. *Journal of Professional Nursing*, 1996; 12(2):99-105.

[6] Islam MT, Mostafa G, Bhuiya AU, Hawkes S, De Francisco A. Knowledge on and the attitudes towards HIV/AIDS among the staff of an international organization in Bangladesh. *J Health Popul Nutr*. 2002 sep;20(3):271-8.

[7] Lawrence VA, Gafni A, Kroenke K. Pre-operative HIV testing: is it less expensive than the universal precautions? *J Clin Epidemiol* 1993; 46 :1219-27.

[8] Datta C, Bandyopadhyay D. Knowledge and attitudes in relation to HIV/AIDS among the in-service nurses of Calcutta. *J Indian Med Assoc* 1997; 95 : 75-7.

[9] Fusilier MR, Durlabhji S. The health care workers' attitudes towards AIDS and their willingness to provide care in India. *J Health Hum Serv Adm* 1997; 20 : 145-58.

[10] Lal P, Kumar A, Ingle GK, Gulati N. Some AIDS-related policy issues and the nursing students' willingness to provide AIDS care. *J Commun Dis* 1998; 30 : 38-43.

[11] Takai A, Wongkhomthong S, Akabayashi A, Kai I, Ohi G, Naka K. Correlation between the history of contact with people who are living with HIV/AIDS (PWAs) and the tolerant attitudes towards HIV/AIDS and PWAs in rural Thailand. *Int J STD AIDS* 1998; 9 : 482-4.

[12] Paxton S. The impact of utilizing HIV-positive speakers in AIDS education. *AIDS Educ Prev* 2002; 14 : 282-94.

[13] Bhosale SB, Jadhav SL, Singru SA, Banerjee A. Behavioral surveillance survey regarding the human immunodeficiency virus/acquired immunodeficiency syndrome among high school and junior college students. *Indian J Dermatol Venereol Leprol* 2010;76:33-7.

[14] Taher E, Abdelhai R. Nurses knowledge, perceptions, and attitudes towards HIV/AIDS: Effects of a health education intervention on two nursing groups in Cairo University. *Egypt Journal of Public Health and Epidemiology*, April 2011; 3(4):144-54.

[15] Delobelle P., Rawlinson J. L., Ntuli S., Malatsi I., Decock R,Depoorter A. M. HIV/AIDS knowledge, attitudes, practices and perceptions of rural nurses in South Africa. *Journal of Advanced Nursing*, 2009; 65: 1061–1073. doi: 10.1111/j.1365-2648.04973 x.

[16] Oyeyemi A., Oyeyemi B,Bello I. Caring for patients who are living with AIDS: the knowledge, attitude and the global level of comfort. *Journal of Advanced Nursing*, 2006; 53: 196–204. doi: 10.1111/j.1365-2648.03715 x.

AUTHOR(S):

1. Dr. Basavaprabhu Achappa
2. Dr. Soundarya Mahalingam
3. Dr. Priyansha Multani
4. Dr. Pranathi M
5. Dr. Deepak Madi
6. Dr. Unnikrishnan B
7. Dr. John T Ramapuram
8. Dr. Satish Rao

PARTICULARS OF CONTRIBUTORS:

1. Associate Professor, Department of General Medicine,
2. Associate Professor, Department of Paediatrics,
3. Post Graduate, Department of Ophthalmology,
4. Intern, Department of General Medicine,
5. Assistant Professor, Department of General Medicine,
6. Professor & HOD, Department of Community Medicine,
7. Professor, Department of General Medicine,
8. Associate Professor, Department of General Medicine, Kasturba Medical College, Mangalore, Affiliated to Manipal University, Unit of Manipal University, Karnataka, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Soundarya Mahalingam
Associate Professor, Department of Paediatrics,
Kasturba Medical College,Attavar, Mangalore, India.
Phone: +919845526499
E-mail: soundarya29@gmail.com

FINANCIAL OR OTHER COMPETING INTERESTS:
None.

Date of Submission: **Aug 01, 2011**
Date of Peer Review: **Dec 31, 2011**
Date of Acceptance: **Jan 05, 2012**
Date of Publishing: **Aug 10, 2012**