

# **Research Article**

# KNOWLEDGE, ATTITUDE, PRACTICES AND PROFESSIONAL RISK ASSESSMENT REGARDING HIV/AIDS AMONG HEALTH CARE WORKERS IN A TERTIARY CARE CENTRE, KANNUR

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Abstract- The study group's attitude was checked by making them to answer questions related to disclosure of HIV status to their family members and sexual partners. About 70% and 91% of HCW feels that client's HIV status has to be told to family members and sexual partners respectively. We feel opinion of public has to be considered by conducting studies regarding disclosure of HIV status to care givers. Around 60% of HCW positively opined regarding HIV patient becoming pregnant and others felt it is better to avoid conception. We suggest regular training sessions and awareness campaign regarding mother to child transmission has to be promoted in the institute.

Keywords- HIV, Tertiary Care Centre

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# Introduction

Globally Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) is a major health problem. More than seven thousands new HIV/AIDS infections occur every day while approximately 4000 people die every day globally with HIV/AIDS[1]. The World Health Organization (WHO) reported approximately 34 million people are infected with HIV/AIDS globally at the end of 2010. India holds third position for the HIV/AIDS infection in the world [2]. The National AIDS Control Organization (NACO) estimates that there were more than 5.2 million people living with HIV/AIDS in India in 2005 [3]. It is estimated that about 1.72 lakh people in India died of AIDS related causes in 2009, but the trend of annual AIDS deaths is showing a steady decline due to free antiretroviral therapy (ART) program started in 2004. Kerala state has been reported to rank fourth in terms of the absolute number of AIDS cases in India [4]. Healthcare Workers (HCW) at various levels (Medical Officers, Post Graduates, Interns, Nursing Staffs, Lab Technicians, Attenders, Public Relation Officers, Receptionists and Housekeeping) are at risk of HIV in their day to day practice. WHO estimates that 2.5% of HIV cases among Healthcare workers are due to result of occupational exposures. Percutaneous needle prick injuries can lead to HIV transmission in 3cases for every 1000 exposures [5]. Not only percutaneous needle stick injuries but also large number of occupational exposures to the patient's blood and body fluids occur in all health care systems [6]. Wide spread ignorance, poor information and misconception about the disease in the society are the major causes of spreading social stigma [7]. Better knowledge and awareness about the disease and its mode of transmission is required to prevent spread of HIV/AIDS. Healthcare workers play key role in the prevention and management of HIV/AIDS and they are urged to take advantage of available preventive measures as a large number of occupational exposures to patient's body fluids and blood occur in all health care settings [6,8]. Understanding about the knowledge, attitude and practices about HIV/AIDS among Healthcare workers will also help us in formulating strategy for prevention, treatment and improving compliance to treatment of HIV/AIDS[8]. Health professionals in the public and private sectors need to have adequate knowledge of and positive attitude towards HIV/AIDS so

as to promote safe and effective practices with regard to testing, care and support of affected people and facilitate reduction in transmission of the disease. There is an urgent need to develop a coordinated approach for the provision of information, support and referral for health care workers who sustain occupational exposures [8]. Exposures can happen mostly among low level Healthcare workers due to lack of knowledge. So World Health Organization is developing guidelines for the medical surveillance of laboratory workers in an attempt to protect the health of workers employed in the investigation of ill health in others[9,10]. Health education is the only method to prevent or control this wide spreading disease. So, there is a need to upgrade their awareness to protect themselves from infection and also to prevent the spreading of the disease. Hence, this study was taken up with the aim to know the knowledge, attitude, practices and professional risks regarding HIV among health care workers in our hospital.

# Materials and Methods

Study area, design and period: This is a cross-sectional study conducted among Healthcare workers (HCW)at Kannur Medical College, Kannur from May 2016 to July 2016 under Department of Microbiology. Around 300 Healthcare workers took part in the study includes doctors, nurses, technicians, assistants, PROs, receptionists and housekeeping who have been recruited in Kannur Medical College Hospital for more than 3 months. Responders were selected by simple random sampling using the list of all staffs working at hospital for more than 3 months. Instrument and data collection: All Healthcare Workers of age 18-60 years and working in the hospital for more than 3 months were included in the study. The study instrument was a structured questionnaire comprised of 4 sections. Part 1 is related to general information of the participants. Part 2, Part 3, Part4 is related to Knowledge, Attitude, Practices and Professional risks of Healthcare Workers regarding HIV/AIDS respectively. Knowledge was assessed with 11 questions which includes HIV transmission, risks interactions, past experience with HIV people, training regarding HIV/AIDS and antiretroviral therapy. Attitude comprises 10 questions related to HIV testing, confidentiality, myths and working with HIV people.

Table-1 General Description of Respondents by Job I	_eve
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Description	pription Job Level								
	l (169)		II	II (86)		(45)	Tota	(300)	p value
	N0	%	No	%	No	%	No	%	
Age(Mean ± SD)	30.21±7.7		28.12±7.4		33.78±10.8		30	.15±8.3	0.001
15-24 years	33	19.5	35	40.7	10	22.2	78	26	
25-34 years	103	60.9	38	44.2	18	40	159	53	
35-44 years	22	13	7	8.1	6	13.3	35	11.7	
45-54 years	7	4.1	6	7	10	22.2	23	7.7	
55-64 years	4	2.4	0	-	0	-	4	1.3	
65-74 years	0	-	0	-	1	2.2	1	0.3	
Sex: Male	61	36.1	9	10.5	13	28.9	83	27.7	
Female	108	63.9	77	89.5	32	71.1	217	72.3	
Work Station									
Direct contact	143	84.6	67	77.9	31	68.9	241	80.3	
Indirect Contact	17	10.1	16	18.6	7	15.6	40	13.3	
No Contact	9	5.3	3	3.5	7	15.6	19	6.3	
Duration of Work									
3months-1yr	59	34.9	50	58.1	20	44.3	129	43	
1-4 years	59	34.9	21	24.4	11	24.4	91	30.3	
4-10 years	45	26.6	11	12.8	8	17.8	64	21.3	
>10 years	6	3.6	4	4.7	6	13.3	16	5.3	
Married	99	55.3	49	27.4	31	17.3	179	60	
Unmarried	69	57.5	37	30.8	15	11.7	121	40	

Table-2 Knowledge of staff on HIV and HIV transmission by Job Level Knowledge of staff

Knowledge of staff		Job Level							
	1 (	169)	l	(86)	l	l (45)	Tota	l (300)	p value
	n	%	n	%	n	-	n	%	
Met HIV Positive person									
Yes	105	62.1	52	60.5	16	35.6	173	57.5	0.072
No	64	37.9	34	39.5	29	64.4	127	42.3	
Preparedness to interact with HIV positive persons									
Very prepared	9	5.3	12	14	7	15.6	28	9.3	0.008
Somewhat prepared	18	10.7	7	8.1	4	8.9	29	9.7	
Unprepared	82	48.5	26	30.2	13	28.9	121	40.3	
Not applicable	60	35.5	41	41.3	21	46.7	122	41.7	
Training within 6 months									
Yes	21	12.4	6	7	3	6.7	30	10	
No	148	87.6	80	93	42	93.3	270	90	
Aware of ART									
Yes	160	94.7	60	69.8	23	51.1	243	81	<0.001
No	9	5.3	26	30.2	22	48.9	57	19	
Route and Risk of Transmission									
Unprotected sex	165	97.6	83	96.5	45	100	293	97.7	
Sharing Needles	166	98.2	79	91.1	41	91.1	286	95.3	
Blood/ Blood products	158	93.5	77	89.5	42	93.3	277	92.3	
Sharing razor blades	148	87.6	63	73.3	34	75.6	245	81.7	
Bathing together	6	3.6	4	4.7	1	2.2	11	3.7	
Mosquito bite	8	4.7	9	10.5	3	6.7	20	6.7	
Sharing Vessels	20	11.8	20	23.3	5	11.1	45	15	
Mother to Child Transmission									
During Pregnancy	118	69.8	48	55.8	30	66.7	196	65.3	0.002
During Childbirth	135	79.9	44	51.2	23	51.1	202	67.3	<0.001
Breast feeding	99	58.6	52	60.5	20	44.4	171	57	0.006
HIV can be prevented by									
Abstaining sexual activity	113	66.9	61	70.9	31	68.9	205	68.3	0.01
Healthy diet	39	23.1	17	19.8	16	35.6	72	24	0.006
Sterile needles	164	97	71	82.6	37	82.2	272	90.7	<0.001
Using condom during sex	151	89.3	75	87.2	30	66.7	256	85.3	<0.001
Having multiple sexual partners increases the risk of HIV									
Agree	164	97	79	91.9	44	97.8	287	95.7	

Practices includes 20 questions regarding work station activities, exposures, notification, services, HIV testing, sexually transmitted infections (STIs) and antiretroviral therapy. To assess professional risks, we have formulated 9 questions related to occupational hazards, prophylaxis and treatment.

Questionnaire is prepared in English language and translated to local language as per the convenience of the participants. Questionnaires were distributed to the selected Healthcare workers in which they don't have to mention their names, also written informed consent was taken.

**Scoring:** Knowledge, Attitude, Practices and professional risks was assessed by scoring. Each question has an option of yes/no/not sure, true/false, agree/disagree variables. Best responses towards appropriate knowledge, positive attitude and correct practices will be allocated with maximum points (0, 1, 2) respectively.

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Attitude of staff	Job Level								
	l (	169)	II (86)		III (45)		Tota	p value	
	n	%	n	%	n	%	n	%	
If a Client is Positive for	HIV, the clir	nic should infor	m the clier	nt's family					
Yes	115	68	61	70.9	34	75.6	210	70	0.6
No	54	32	25	29.1	11	24.4	90	30	
If a Client is Positive for HIV, the clinic should inform the sexual partner									
Yes	156	92.3	75	87.2	42	93.3	273	91	0.3
No	13	7.7	11	12.8	3	6.7	25	19	
HIV women has right to	become pre	egnant							
Agree	103	60.9	49	57	28	62.2	180	60	
Disagree	66	39.1	37	43	17	37.8	120	40	
HIV positive teacher she	ould be allov	ved to teach							
Agree	165	97.6	74	86	42	93.3	281	93.7	0.002
Disagree	4	2.4	12	14	3	6.7	19	6.3	
Most HIV positive people are infected because of irresponsible behavior									
Agree	100	59.2	47	54.7	29	64.4	176	58.7	
Disagree	69	40.8	39	45.3	16	35.6	124	41.3	
I would be willing to car	e for my fam	ily member ha	ving HIV/A	IDS					
Agree	160	94.7	78	90.7	43	95.6	281	93.7	
Disagree	9	5.3	8	9.3	2	4.4	19	6.3	
If I were infected and to	ld my family	member they	may betray	/ me					
Agree	60	35.5	33	38.4	28	62.2	121	40.3	0.005
Disagree	109	64.5	53	61.6	17	37.8	179	59.7	
I feel comfortable sharir	ng bathroom	with HIV posit	ive person						
Agree	109	64.5	62	72.1	27	60	198	66	
Disagree	60	35.5	24	27.9	18	40	102	34	
I would feel comfortable	e buying veg	etables from H	IV positive	vendor					
Agree	119	70.4	65	75.6	35	77.8	219	73	0.5
Disagree	50	29.6	21	24.4	10	22.2	81	27	
AIDS is God's punishme	ent								
Agree	143	84.6	63	73.3	33	73.3	239	79.7	0.054
Disagree	26	15.4	23	26.7	12	26.7	61	20.3	

#### Table-4 Practice of staff

Practice of staff	Job Level									
	l (1	l (169)		II (86)		(45)	Tota	I(300)	p value	
	n	%	n	%	n	%	n	%		
HIV positive status has to be notified to										
Client	163	96.4	69	80.2	35	77.8	267	89	0.001	
Client's sexual partner	152	89.9	72	83.7	33	73.3	257	85.7		
Client's parents	88	52.1	46	53.5	24	53.5	158	52.7	0.001	
Client's employers	34	20.1	19	22.1	10	22.2	63	21		
Ministry of Health	95	56.2	47	54.7	26	57.8	168	56		
Client's insurance company	64	37.9	23	26.7	11	24.4	98	32.7		
How worried are you on giving care to HIV patient										
Becoming infected with HIV	95	56.2	42	48.8	16	35.6	153	51		
People don't visit to meet me	68	40.2	32	37.2	17	37.8	117	39		
people think of me being infected	50	29.6	29	33.7	15	33.3	94	31.3		
Which of the issues worries you most										
Becoming infected with HIV	127	75.1	54	62.8	32	71.1	213	71	0.001	
Possibility other people don't visit to meet me	25	14.8	19	22.1	11	24.4	55	18.3		
Possibility other people think of me being infected	13	7.7	8	9.3	2	4.4	23	7.7		

Statistical Analysis: Data were analyzed using software SPSS version 16. All the results are expressed as frequencies, percentage, graphs and charts. Descriptive data will be analyzed with Chi square test and Fisher's Exact test. P value≤0.05 will be considered as statistically significant. Logistic regression will be used to calculate the independent odds ratio (OR) for professional risk assessment [6].

Ethical consideration: The study was ethically approved by Institutional Ethics Committee (IEC).

**Observations & Results:** Total 300 health care workers which includes, doctors, Post graduates, Interns, nurses, technicians, assistants, PROs, receptionists and housekeeping answered the questionnaire. Response rate was good among in level 1 (Doctors/ PGs/ Interns). Of which 69% (206) could complete the questionnaire another 31(93%) who never provided services to HIV positive persons couldn't answer questions related to practices and professional risks. General description of the study group is given in [Table-1].

#### Source of Information related to HIV

Electronic media like television, radio and internet were the important source of information on HIV/AIDS followed by print media like books, news papers and magazines. Health care workers significantly contributed in spreading messages related to HIV/ AIDS as shown in [Fig-1]. Knowledge related to HIV/AIDS and routes of transmission: About 58% of respondents had met HIV positive clients in their work area. Around 20% of the respondents were prepared to interact with HIV positive clients. About 10% of HCW had training regarding HIV/ AIDS in recent days. About 81% of respondents were aware of treatment for HIV as shown in table 2. There is no significant difference of knowledge between job levels. Respondents were adequately aware regarding routes of transmission of HIV (97%), and misconceptions about HIV transmission was less. Attitude and opinion: Positive opinion was given by respondents regarding disclosure of HIV status of a client to his family members (70%) and sexual partners (91%). About 93% of respondents were willing to give care of HIV positive family member as shown in [Table-3].

Table-5 Good Practices of staff by Job Level

Practice of staff	Job Level								
	I (111)			ll (67)		(28)	Tota	I(206)	р
	n	%	n	%	n	%	n	%	value
As HCW I need to know the sexual orientation of my client									
Agree	85	76.6	57	85.1	22	78.6	164	79.6	0.4
Disagree	26	23.4	10	14.9	6	21.4	42	20.4	
As HCW I need to know the sexual behavior of my client									
Agree	85	76.6	52	77.6	22	78.6	159	77.2	
Disagree	26	23.4	15	22.4	6	21.4	47	22.8	
Do you feel nervous to take appointments of HIV patients									
Yes	48	43.7	27	40.3	15	53.6	80	39	
No	63	55.8	40	5.9	13	46.4	126	61.1	
To treat HIV patient, how prepared do you feel									
can provide appropriate health services	107	96.4	64	95.5	28	100	199	96.6	
counsel client appropriately	109	98.2	64	95.5	28	100	201	97.6	
can refer client for better services	101	91	40	59.7	21	75	162	78.6	
Do you feel comfortable in carrying lab samples									
Yes	47	42.3	47	70.1	18	64.3	112	54.3	0.006
No	64	57.4	20	29.9	10	35.7	94	45.7	
HIV predisposes to STIs	87	784	37	55.2	11	39.3	135	65.5	0.001
STIs predisposes to HIV	67	60.4	23	34.3	8	28.6	98	47.6	0.001
Sexual behaviors that make someone susceptible to HIV also predisposes to STIs	91	82	35	52.2	7	25	133	64.6	0.001
STIs testing should be part of HIV prevention program	92	83.6	35	53	14	50	141	69.1	0.001

Good practices of staff on HIV positive clients: HIV testing and result disclosure is confidential and is maintained by our responders. About half of the responders were worried to work with HIV positive clients as they were worried of becoming infected or thought that people may suspect them with HIV positiveness as shown in [Table-4] and [Table-5]. Risk exposure of staff: Total 206 respondents who come in direct contact with HIV positive persons/ Blood/ Body fluids answered questionnaire related to professional risk exposure within a year. About 17% of respondents had blood/ body fluid exposure, 9% exposure was by sharp cuts/ needle stick injury and 3% was mucosal exposure. Only 20% of respondents were using adequate barrier precautions in their work area. About 20% knew about post exposure/ prophylactic anti-retroviral therapy as shown in [Fig-1].

# Discussion

The present study was done in a 600 bedded tertiary care hospital. Different levels of staffs are included in study and could get important findings related to the awareness, opinion and practices regarding HIV/AIDS. Better response was given by level l(medical groups). Median age of the respondents was 30.1±8.3 suggesting young and reproductive age group are the major part of the study. Females were predominant respondents suggesting predominant female working population especially in level II group. Similar findings were found by L P Meena et al(7). The study group had completed the primary schooling. Level I staff had completed Graduation (53-84%), level II (28-50%) and level III (17-2%). Electronic media is the common source of information which is same findings by other authors(3,4). In our study, about 58% of staff had met HIV positive clients. It suggests that atleast half of the population (HCW) will be addressing the HIVpositive people. But only 9.3% of staff revealed that they are well prepared in handling the HIVpositive people. Level III staff preparedness is significantly less of about 40%. Around 10% of the staff was trained recently, suggesting awareness activity has to be done regularly. About 81% of the staff were aware of anti retroviral therapy. There was good knowledge about modes of transmission of HIV by unprotected sex (97%), sharing needles (95%) and blood transfusion (92%). Misconceptions about transmission were significantly less. About 65% of staff were aware of mother to child transmission, even though awareness among level I staff was not as expected(69.8%). Overall awareness regarding prevention of HIV transmission was good(69%). About 90% of HCW knew that using sterile needles one can cut down the HIV transmission which is highly commendable. S S Lal, performed a community-based, cross-sectional survey of 625 randomly selected undergraduate college students and assessed the knowledge and attitude of the students towards AIDS, STDs and sexuality.





Fig-2 Professional fisk exposure

About 93% of HCW opined that teacher/ professionals should be allowed to continue their job irrespective of HIV status. HIV is acquired due to high risk behavior, about 59% opined so. Major issues related are social stigma and discrimination which persists between individuals and family members.

About 94% of respondents were ready to care their HIV positive family members. Most Respondents (90%) were aware of disclosing HIV results to clients through ICTC centers while maintaining confidentiality, as it is very important in reducing stigma and isolation of infected patients. Respondents (51%) were worried in giving care to HIV positive people including 56% of level I suggesting lack of training and preparedness. Nearly 80% of the HCW prefer knowing clients sexual orientation and sexual behavior so that they can provide better knowledge to the client and prevent transmission of disease. About 40% of respondents were nervous to take appointments of HIV patients and 54% of HCW were comfortable in handling lab samples. This shows poor preparedness of staff regarding HIVsample processing. There is lots of scope for health education and proper awareness related to HIV either by national associations or institutional training programs.

STIs and HIV go hand in hand and majority responders (66%) said HIV predisposes to STIs, but 52% responders were unaware that STIs predisposes to HIV. About 58% felt condom is best contraception for HIV positive pregnant mothers. Nearly 70% of responders were aware of ART and its use in prolonging disease, improved life and reduced infections. Use of ART to pregnant mother reduces child transmission was known to 66% of level I HCWs and significantly less among level III workers.

Although 64% of HCW were practicing standard precautions, it is considerably less, as institute advices mandatory practice of standard precautions to all patients. About 52% of HCWs were exposed to blood/ blood products and 26% through cuts/ needle prick which is huge risk. Though institute's infection control practices and training are conducted regularly, it was astonishing to find these risk stats. Exposure reporting is done in our institute and HCWs used to report any undue events, and about 66% were aware regarding provision of prophylactic ART. Overall 71% of responders had good knowledge, 92% had positive attitude and 66% had good practice towards HIV testing and caring HIV clients which is in par with other authors too.

Atleast half of the health care workers will be meeting HIV on day to day activities. Preparedness to interact with HIV patients is inadequate. Awareness related to modes of transmission is good but awareness related to ART is less. Positive attitude related to HIV/AIDS is appreciated which can reduce the social stigma and discrimination of infected patients. Confidentiality of HIV testing is followed, but HCW worries in giving care to HIV positive patients. Information and education related to multiple aspects of HIV/AIDS has to be conducted regularly, stressing on level III group. We suggest Health education and training related to HIV, infection control and good practices has to be conducted regularly to all health care workers.

# Conclusion

To conclude good knowledge, positive attitude and better practices are appreciated among our health care workers. Butlots of gaps were found with the awareness and practices which has to be filled by proper education. Information, education and communication by institute and state associations is immediately and consistently needed.

**Application of research:** Health education regarding HIV transmission and positive change in attitude on treating HIV patients.

Research Category: Clinical Microbiology

#### Abbreviations:

HIV- Human Immunodeficiency Virus. HCW- Health care workers. STIs -Sexually transmitted infections

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### Conflict of Interest: None declared

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