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Knowledge, Attitude and Practices among Nurses Regarding HIV/AIDS in Mayo and Services Hospital Lahore Pakistan

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Abstract:

Human immunodeficiency virus (HIV) is becoming a worldwide problem and now a day's its seriousness towards last stage AIDS is going to be high in every place of world. The studies showed that, there is a gap between knowledge, attitude and practices of nurse's related HIV/AIDS. The nurses are not adhered to the universal precautions so the number of HIV/AIDS increasing day by day in developing countries. The study purpose is to assess the knowledge, attitude and practices among nurses regarding HIV/AID in Lahore Pakistan. The quantitative cross-sectional study design was used with convenient sampling (n=286) from Mayo and Services Hospital Lahore. The nurses who attended at least one HIV patient can be part of the study. Using the self-administered questioner, data was analyzed SPSS 21 version and application of chi-square test with (p=<0.05). The respondents 61.2% wear the gloves during taking sample. The participants 83.1% have knowledge about transmission of HIV/AIDS through blood. The respondents 27.7% had no knowledge that HIV/AIDS didn't transmit by casual contact. Only35% participants were aware that when the CD4 (glycoprotein found on the surface of immune cells) count is <200 then should assess the patient for antiretroviral therapy.7.7% nurses responded that gloves are not necessary during handling the HIV patient's blood and body fluids. Results indicate that due to high qualification there is increased level of knowledge. Only20.8% practiced the stigma and discrimination towards HIV/AIDS patients. Qualification and attitude of nurses are insignificant associate with each other. The every nurse should know about the transmission, nature of HIV, preventions and precautions of HIV. There is need to improve the knowledge and provide training especially universal precautions transmission of disease and antiretroviral therapy.

Keywords: HIV/AIDS, nurses, Knowledge, Attitude, practices

1. Introduction

Special nursing knowledge and skills require for taking care of HIV/AIDS patients. In the United States AIDS is the sixth leading cause of death among people ages 25 – 44years. Human immunodeficiency virus (HIV) is becoming a worldwide problem and now a day's its progression towards last stage AIDS is going to high in every place of world. It was first discovered in 1981 and now almost spread in every country of the world. HIV can take time 10 to 12 years in progression to AIDS.(Okpala et al., 2017)[18].

Pakistan is the one main Islamic and developing country. It is to be found between the countries which are at high risk for HIV i.e. India, China and Afghanistan, in which these countries only Iran is low risk around the Pakistan. The total 1549 people were infected with HIV, the persons who infected with AIDS in 2000 to 2002 were 202 and it was increased number of cases in 2003.(Bhurgr, 2006)[3]. In 2014, it was estimated that 91,340 people were infected with HIV. It showed that it is a great prevalence of HIV in Pakistan.(Bergstrom et al., 2015)[1]. Stigma is main problem for such patients. In some developing countries the people and health care workers showed negative and discriminatory behaviors.(Marranzano, Ragusa, Platania, Faro, & Coniglio, 2013).[16]

HIV/AIDS cause by a human immunodeficiency virus (HIV). Virus attacks on the T-Cells in humane immunity and destroy the white blood cells(CD4) and person unable to fight against infection.(Henry, 2009)[10]. After two to six weeks of HIV exposure 50%-70% people get transient infection called seroconversion illness. The illness appears with malaise, myalgia, fever, rash, oral or genital ulcers and pharyngitis. Usually signs and symptoms last for 1-2 weeks.(DePaola & Silva, 2005).[6]

In HIV/AIDS patients CD4 counts is <200/uL and percentage is <14% then it can be assessed for antiretroviral therapy. The laboratory test which perform to detect the HIV are antibodies, CD4 counts and quantitative plasma HIV RNA (viral load) to estimate the level of HIV multiplication in the body. The HIV RNA must be >1000 copies/mL for standard essay. To identify the resistance of antiretroviral therapy in HIV patients Genotype and Phenotype test performed (Education & Centers, 2013)[8].

It can transmit when a person has sex partner more than one, semen, vaginal fluids, by using the infected drug needles, contaminated blood and mother to child transmission during pregnancy, birth and breast feeding. Saliva and tears also can cause to transmit the HIV. The infection doesn't transmit by casual contact (Hugging, kissing, mosquito, participation in sports, touching) items that were touched by a person infected with the virus.(Hassan & Wahsheh, 2011)[11].

There are fifteen treatment centers for HIV/AIDS in Pakistan. The 1 is in Islamabad, 7 in Punjab, 2 in Khyberpakhtoon khan, 1 in Baluchistan, 4 in Sindh. Anti-retroviral therapy(ART)combination of medicines such as Nucleosides analogue reverse transcriptase inhibitors (NNRTI) Zidovudine (ZDV) and lamivudine (3TC) and non-Nucleosides reverse transcriptase inhibitors Nevirapine (NVP) may be used alone or two and three drugs to treat the HIV patients. Post exposure prophylaxis treatment (PEP), which prevent from disease started within 72 hours after exposure of HIV/AIDS and continued for 4weeks. Antiretroviral therapy reduced the multiplication of virus in the body.(Organization & Initiative, 2004)[20].

A study conducted by WHO (Organization, 2016)[19], according to this data, 2.1million people were recently suffered from HIV in 2013. The persons who infected with HIV in 2001 were 3.4million. There is estimated that the people globally, who have received the antiretroviral (ART) therapy were 12.9 million at the end of the 2013. From these people 11.7 million belonging to the low and middle-income countries, these shows that estimated 32.6million people infected by the HIV disease which is reported 36%. Placing the 15million people on the ART by the year of 2015 was the crucial target of the General Assembly and it can be exceeded.

The 2.0 million people were died in 2008 due to HIV. It was a large strength of people who died in one year. So there is more need to overcome of this serious problem. (Mockiene, Suominen, Välimäki, & Razbadauskas, 2010)[17].The nursing is the only profession which has close contact during delivering quality care to patients. They have to face different situations with different diseases e.g. communicable and non-communicable diseases. One of the health threatening diseases is HIV/AIDS. So, they are at high risk of getting infection during care of the HIV patients.

The nurses play a vital role for treatment and prevention of HIV. This problem is considered a worldwide problem so; nurses and health care should have proper knowledge of how to treat these patients. (Relf et al., 2011)[21].

Health care workers especially nurses are at high risk of HIV/AIDS when they do not follow the standard precautions e.g. unsafe injection is the main risk of infection. That's why there is important to bring up to date the nurse's knowledge regarding nature of HIV/AIDS, prevention and treatment is essential to provide the better care.(Lui, Sarangapany, Begley, Coote, & Kishore, 2014)[15].

It is very important for nurses to increase their knowledge regarding HIAIDS.

In a study, it was noticed that there was lack of knowledge and scientific information of HIV/AIDS in their memories and it was elaborated by the nurses. They feel professional insecurity during working in clinical setting. "There was evidence that lack of scientific knowledge maintained interfaces with nurse's weakness since it placed them in a position of disadvantage, showed them to be fearful and anxious to assisting the HIV/AIDS patients"(dos Santos & Gomes, 2013)[7].

So, due to the lack of knowledge fear of contagious and fear of getting sick have negative attitude of nurses towards HIV patients. It is important step to improve the knowledge and attitude of nurses regarding HIV.(Salmanzadeh, Maniavi, Alavi, Meripoor, & Rahimi, 2016)[22].In Pakistan, the study (46.6%) participants never heard about the post exposure prophylaxis, (65%) did not consider it important. Most of them did not know about the acronym of PEP (post exposure Prophylaxis). They have poor practices to handling the patients not wearing the gloves after contracting the patient.(Ahmad, Muneer, ul Sabah, Baig, & Khan, 2015)[1]

A study conducted in Pakistan revealed that there were some nurses who have the knowledge regarding HIV/AIDS causes but some nurses were unaware about its causes. The results of this study indicated that nurses who were studied in this research half of them were showed negative and unfavorable attitude towards HIB/V/AIDS (Khan & Khan, 2012)[14].

There were worldwide more than thirty million people who suffered from HIV and the forty thousand persons diagnosed in 2010. Based on data at the end of 2010 there was estimated that 34million people were infected with HIV and every year 2.3million people are infected and 3/1 million die(HIV/AIDS, 2011)[13].The results of the study that was conducted in Nigeria indicated that the overall respondent's knowledge related HIV was good. (92.5%) nurses were aware acronym of HIV/AIDS. (93.8%) knew that HIV is caused by virus. (78.3%) were replied that HIV is transmitted by sexual intercourse if one partner has HIV. (94.6%) persons showed the positive attitude toward HIV/AIDS patients (Okpala et al., 2017)[18].Another research in South Africa indicated, rural nurses' knowledge related HIV was moderately adequate and the knowledge gap was showed in transmission and risk prevention. The knowledge was not associated with the age or job experience. Positive attitude was measured and mostly participants stated that they encourage the patients towards voluntary counseling and testing (VCT). (76.1%) respondents replied that they practiced standard precautions. (92.2%) stated that they wear gloves while handling the HIV patients. (98.6%) attended indicated that there is also right of HIV/AIDS patients to receive care as same respect of another disease.(Delobelle et al., 2009)[5].

1.1. Rational of the Study

In 2014, it was estimated that 91,340 people were infected with HIV. It showed that there is a great prevalence of HIV in Pakistan.(Bergenstrom et al., 2015)[2].There are worldwide more than thirty million people who suffered from HIV and the forty thousand persons diagnosed in 2010. Based on data at the end of 2010 there was estimated that 34million people were infected with HIV and every year 2.3million people are infected and 3/1 million die.(HIV/AIDS, 2011)[13].

The researcher identified that the number of HIV patients is increasing very rapidly. The nurses who were attending these patients did not know standard precautions. They attend HIV patients and other patients collectively.

1.2. Objectives of Study

- To assess the knowledge attitude and practices of nurses regarding HIV/AIDS patients.

1.3. Significant of the Study

This study was identifying the gap between knowledge, attitude and practices of nurses regarding HIV/AIDS patients which is increasing day by day. The study is helpful to the peer reviewers and also beneficial to the future researchers for further researches. The participants were aware about lack of using standard practices and then they know why HIV/AIDS cases are increasing and why the people were not recovering. When the patients were recovered soon then the worth of nursing profession will be increased.

2. Methodology

2.1. Design of Study

A quantitative, descriptive study design with convenient sampling technique was used.

2.2. Tool of Research

The self-administered questioner was used to conduct the information from nurses in Mayo and Services Hospital Lahore. Questioner was adapted from article that published in Journal of Advanced Nursing (AJN). Reliability and validity of items was checked by the researcher and Cronbach's alpha value of knowledge was 0.77 and attitude value 0.63 the original knowledge items were developed by the Eckstein in 1987.(Delobelle et al., 2009)[5].

2.3. Inclusion Criteria

All registered nurses from selected departments were participating in the study which has at least one-time exposure to HIV/AIDS patient during their job or training. The target population of the study was all registered nurses who working in medical department, surgical, drug addiction dept., skin, neurology and chest medical (TB)ward in Mayo Hospital Lahore which were estimated 250 nurses. Nurses who were working in medical department, surgical, pediatric and Gynae department in Services Hospital Lahore were population. Which were estimated 200. Study was conducted between February 2017 to May 2017.

2.4. Exclusion Criteria

Nurses who did not handle any one HIV patient during their job or training were excluded from selected departments. The nurses of other hospitals in Pakistan and international nurses were excluded.

2.5. Size of Sample

The sample size was 286 participants it was calculated by using the "Slovin's formula". (Ellen, 2012)[9]. Confidence interval is 95%.

2.6. Data Analyze Plan

Data was analyzed by using the Statistical Package for the social science (SPSS) 21.

2.7. Ethical Consideration

The study was conducted in the Mayo and Services Hospital Lahore after a permission letter from institutional review board committee of university of Lahore. A letter was also being taken from chief nursing superintendent of mayo and Services Hospital Lahore. The rules and regulations of Hospital were not being violated. Each member who was participant in this study was deal in respective way. All information was being kept confidential.

3. Results

3.1. Demographic Data

The questioners were distributed in 286 participants. By using the convenient sampling technique to collect data, 244 were returned back 42 questioners were missing and 38 questioners were incomplete information so 206 were returned with complete information. Mostly were charge nurses 97.6% and 2.4% head nurses with (1.024±.154). The nurses 63.1% from mayo hospital and 36.9% from services hospital Lahore. Mean of organization (1.37±.48). The total 100% (n=206) of participants were females in the study with (2.00±.000). There were 32.5% between 20-25years, 46.6% were between 26-30years, 11.7% between 31-35years and 9.2% were >36years. (1.975±0.902). The qualification of participants 66.5% was General nursing & midwifery, 17% were Post RN/BSN, 1% was MSN and 15.5% were specialized with (1.655±1.087). There were 17.5% experienced <1year, 44.7% were 1-5years, 23.8% were 6-10years experienced and 14.1% were >10years experience in the study with the mean of experience (2.344±0.927). In the study 36.4% were married and 63.6% were unmarried female with (1.63±0.482). The nurses 40.3% attended 1-5HIV/AIDS patients during their

training or job, 17.5% (n=36) attended 6-10 patients, 17.5% (n=36) attended 11-15 patients, 24.8% (n=51) nurses attended >16 HIV/AIDS positive patients (2.467±1.226). (Table 1)

Variables	Category	Frequency (F)	Percentage (%)
Gender	Female	(206)	100%
Organization	Mayo Hospital	(130)	63.1%
	Services Hospital	(76)	36.9%
Designation	Head Nurses	(201)	97.6%
	Charge Nurses	(5)	2.4%
Age	20-25yrs	(67)	32.5%
	26-30	(96)	46.6%
	31-35	(24)	11.7%
	36-above	(19)	9.2%
Experience	< 1 year	(36)	17.5%
	1-5years	(92)	44.7%
	6-10 years	(49)	23.8%
	>10years	(29)	14.1%
Marital	Marrie	(75)	36.6%
	Single	(131)	63.6%
Qualification	Diploma	(137)	66.5%
	BSN	(35)	71%
	MSN	(2)	1%
	Specialize	(32)	15.5%
How many HIV/AIDS patients you attended?	1-5pt	(83)	40.2%
	6-10	(36)	17.5%
	11-15	(36)	17.5%
	>16	(51)	24.8%

Table 1: Demographic Information of Participants.

3.2. HIV/AIDS Knowledge

In the HIV/AIDS knowledge scales, it can be transmitted by casual contact 60.2% (n=124)Disagree. HIV/AIDS can be transmitted through infected blood transfusion 83.1% (n=171) were agree. Virus can easily be killed with disinfectant in the environment 13.3% (n=28) were agree.HIV/AIDS virus decreased T-4 Cells and causing an impaired cellular immunity 50% (n=103) agree and 15.5% (n=32) were strongly agree about the statement.

All infected pregnant women with HIV/AIDS will have born babies with HIV/AIDS 48.1% (n=99) agree and 10.7% (n=22) strongly agree. The gloves are not necessary when handling body fluids 5.8% (n=12) agree and 1.9% (n=4) were strongly agree.HIV/AIDS patients can be asymptomatic but still infectious 45.6% (n=94) agree and 18.9% (n=39) replied with strongly agree. HIV/AIDS is highly contagious 36.9% (76)agree,24.3% (n=50) were strongly agree with it.The contaminated needles should have recapped immediately after using them to prevent the accidental injury36.9% (n=76) agree, 33.5% (n=69) were strongly agreed that needles should recapped immediately. When the CD4-Cells count <200 then patient should be assessed for antiretroviral treatment 24.8% (n=51) agree and 10.2% (n=21) were strongly agree and they have knowledge that when starts antiretroviral therapy. With (mean± SD of knowledge = 3.136 ± .542) (Table 2)

Variable	Strongly disagree %	Disagree %	Neutral %	Agree %	Strongly agree %
HIV/AIDS transmitted by casual contact	22.8%	37.4%	12.1%	23.3%	4.4%
Transmitted by blood	3.9%	9.7%	3.4%	28.2%	54.%
Virus can be kill in environment	23.8%	47.6%	15%	10.7%	2.9%
T-4 lymphocytes decreased by virus	4.4%	13.1%	17%	50%	15.5%
All pregnant women with HIV/AIDS born infected babies	5.8%	17.5%	18%	48.1%	10.7%
Gloves are not necessary during handling the body fluid	71.4%	15.5%	5.3%	5.8%	1.9%
People can be asymptomatic but still infectious	8.7%	14.1%	12.6%	45.6%	18.9%
HIV/AIDS is highly contagious	9.2%	23.8%	5.8%	36.9%	24.3%
HIV/AIDS infected needles should be recapped immediately after use	7.8%	11.7%	10.2%	36.9%	33.5%
HIV/AIDS patients should be assessed for antiretroviral treatment when CD-4 T-Cells count<200.	4.4%	13.1%	47.6%	24.8%	10.2%

Table 2: Nurse's Knowledge Regarding HIV/AIDS

3.3. HIV/AIDS attitude

The five scores of attitude regarding HIV/AIDS were analyzed, HIV/AIDS persons only have themselves to blame 32.5% (n=67) agree, 3.4% (n=7) strongly agree. The HIV/AIDS patients should not put with other patients in one room 6.3% (n=13) strongly disagree, 27.7% (n=57) disagree, 12.1% (n=25). HIV/AIDS patients have same right to quality of care like other patients 4.9% (n=10) strongly disagree, 15.5% (n=32) disagree. The caring manner of HIV/AIDS patient is more important than others 78.6% (n=162) agree that there should be a special care manner for such patients. 65.1% (n=134) showed the sympathetic feelings towards HIV/AIDS patients. The mean and SD of attitude = (3.440 ± .735). (Table 3)

Variables	Strongly disagree %	Disagree %	Neutral %	Agree %	Strongly agree %
HIV/AIDS infected patients only blame to themselves	7.8%	37.9%	18.4%	32.5%	3.4%
HIV/AIDS patients should put in separate rooms	6.3%	27.7%	12.1%	35.9%	18.0%
Patients with HIV/AIDS have same right to quality of care as others patients	4.9%	15.5%	7.8%	47.6%	24.3%
HIV/AIDS patients have special care manner	4.9%	12.1%	4.4%	52.8%	26.2%
Health care personal are sympathetic towards HIV/AIDS patients	7.3%	15.5%	12.1%	51%	14.1%

Table 3: Nurses Attitude Regarding HIV/AIDS Patients.

3.4. HIV/AIDS practices

Nurse's practices regarding encourage the patient voluntarily testing and counseling was explored by many questions 44.7% (n=92) agree, 17% (n=35) were strongly agree to refer the patient's participants testimony that they refer them. Referral the patients to get testing and counseling 71.8% (n= 148). The nurse's used of universal precautions at work place related to infection control 45.6% (n=94) agree, 17% (n=35) strongly agree. Nurses wearing gloves to took last time blood sample 7.3% (n=15) strongly disagree, 22.3% (n=46) disagree. Hand washing before examining a patient 65.5% (n=135) agree. Nurses immediately recap the needles after using them 22.8% (n=47) strongly disagree only these nurses did not recapped needles after used them. Nurses were treated blood spills on surfaces with disinfectant before cleaning 38.8% (n=80) agree and 15.5% (n=32) strongly agree. After a needle stick injury of HIV/AIDS positive patient the nurses consider starting post exposure prophylaxis treatment 31.6% (n=65) agree, 15.5% (n=32) strongly agree, 64% (n=142) did not discriminate the HIV/AIDS positive patients. (Mean ± SD = 3.342 ± .779) (Table 4)

Variables	Strongly disagree %	Disagree %	Neutral %	Agree %	Strongly agree %
Nurses encourage the HIV/AIDS patients for testing	4.9%	16.5%	6.8%	52.9%	18.9%
Refer HIV/AIDS patients for voluntary counseling and testing even if these are not available their workplace	6.3%	18%	14.4%	44.7%	17%
The services providers based on grouping in the hospital where nurses can refer the HIV/AIDS patient	6.3%	18.9%	20.0%	38.8%	15%
Nurses practices the universal blood and body fluid precautions at clinical setting	4.4%	19.4%	13.0%	45.6%	17%
Wear the gloves, when took the blood for last time	7.3%	22.3%	9.2%	43.2%	18%
Wash hands before examining the patients	8.7%	20.4%	5.3%	49%	16.5%
Nurses recapped the needles immediately after using them	7.8%	15%	9.2%	39.8%	28.2%
Treat the blood spills with disinfectant before cleaning up	5.3%	21.8%	18.0%	38.8%	15.5%
Consider starting post exposure prophylaxis after infected needles	9.2%	16.5%	27.0%	31.6%	15.5%
Discriminate against HIV/AIDS positive patients	41.0%	22.3%	15.0%	12.1%	8.7%

Table 4: Nurse's Practices Regarding HIV/AIDS Positive Patients.

3.5. Data Normality Analysis Test

Normality test was used to analyze the data value and accuracy. Normally distributed data and value should in fine range -2 to +2 value. The data value and normality was checked by skewness and kurtosis. Scores of knowledge Skewness value was -1.039 Kurtosis value was .962, attitude items Skewness value is -.899 and Kurtosis value is .537 and practices scores Skewness value is -.519 and Kurtosis value is -.198 that showed that it is a well normal value. (Table 5).

Variables	Skewness	Kurtosis
Knowledge normality	-.1039	.962
Attitude normality	-.899	.537
Practices normality	-.519	-.198

Table 5: Normality Analysis test of variables

3.6. Convergent Validity (Bartlett's test)

By using the principle component with varimax rotation factors analysis was performed. In the questioner, there were 25 total items. Validity of knowledge scale, attitude and practices was checked. The value of Bartlett's test must be more than .60 and must be significant so all items fulfill the criteria. The value of Bartlett's test 10 items of knowledge is .80 and significant ($p=.000$). The value of Bartlett's test in attitude items is .68 and significant value ($p=.000$). There was no any missing value in the data. The Bartlett's test value in practices items is .87 and significant ($p=.000$) value, with no missing value. So, the data was fulfilling the criteria of KMO Bartlett's test and it showed it was valid data. (Table 6)

Variables	KMO Bartlett's value	sig
Knowledge scale validity	.802	.000*
Attitude scale validity	.680	.000*
Practices scale validity	.874	.000*

Table 6: Data Validity Test

3.7. Chi-square Test Application

There was no significant association found in qualification and knowledge about casual transmission of HIV/AIDS. The qualification of participants did effect on the casual transmission $p=.293$ with chi-square value 14.12a which is $>.05$. Significant association in qualification and transmission of disease by infected blood, qualified nurses have better knowledge regarding HIV/AIDS transmission through blood $p=.002$, chi-square value 31.50a. The qualification did not effect on the knowledge about HIV virus can be killed in the environment $p=.470$, chi-square value 11.69a. Significant association in the qualification and impaired cellular immunity due to the virus, educated nurses were more aware about nature of HIV/AIDS $p=.001$, chi-square value 32.91a. Knowledge regarding infected pregnant woman delivered infected babies was significant $p=.038$ chi-square value 21.96a. The higher study was effect on the knowledge of standard precautions $p=.005$ with chi-square value 28.26a. Significant association in education and knowledge regarding still infectious but asymptomatic $p=.025$ chi-square value 23.32a. There was insignificant association in qualification and disease is highly contagious $p=.193$ chi-square value 15.95a. (Table 7)

Sr. No	Questions	X2 value	Sig
1	Transmitted by casual contact	14.12a	.293
2	Transmitted by infected blood	31.50a	.002*
3	Virus can be killed in the environment with disinfectant	11.69a	.470
4	Decreased in T-4 Lymphocytes causing impaired cellular immunity	32.91a	.001*
5	All HIV infected pregnant women's babies born with HIV	21.97a	.038*
6	During handling the body fluids and blood, gloves are not necessary	28.26a	.005*
7	People with HIV can be asymptomatic but still infectious	23.32a	.025*
8	HIV/AIDS is highly contagious	15.95a	.193
9	Needles should be recapped immediately after using them to prevent accidental injury	46.55a	.000*
10	CD4 T-Cells <200 then assess the patient for antiretroviral treatment	23.44a	.024*

Table 7: Association in Qualification and Knowledge

There was no significant association between qualification and attitude. Qualification did not effect on the nurse's attitude all items showed insignificant p value. (See in table 8)

Sr. No	Questions (Attitude)	X2	Sig
1	HIV/AIDS patients only blame to themselves	11.82a	.460
2	The patient with HIV/AIDS should put in separate rooms	14.84a	.250
3	HIV/AIDS patients have right to the same quality of care	19.77a	.071
4	HIV/AIDS patients have special caring manner as other patients	19.33	.081
5	The health care providers are sympathetic towards HIV/AIDS patients	18.29a	.107

Table 8: Association in Qualification and Attitude

The table no 8 showed that there was significant association between qualification and first 7 items of practices. It showed that education have great effect on the practices of nurses regarding handling the HIV/AIDS patients. Nurses encourage the HIV patient for testing and counseling $p=.022$, chi-square value 23.77a. They also refer the patients for voluntary counseling and testing significant value $p=.020$, chi-square value 23.99a. Refer the patient for treatment in others setting if these services are not available at their setting it was also significant $p=.036$, chi-square value 22.16a. In significant association in qualification and treated blood spots with disinfectant before clean it $p=.174$, chi-square value 16.39a. There was also insignificant association in education and starting the post exposure prophylaxis treatment $p=.708$, chi-square value 8.94a. The education did not effect on the discrimination practices of nurses regarding HIV/AIDS patients $p=.262$, chi-square value 14.63a. (Table 9)

Sr. No	Questions (Practices)	X ²	Sig
1	Encourage of HIV/AIDS for testing and counseling	23.77a	.022*
2	Referral of HIV/AIDS patients for voluntary counseling and testing	23.99a	.020*
3	Hospital services where, nurses refer the HIV patient for treatment	22.16a	.036*
4	Universal blood and body fluid precautions at work place	30.52a	.002*
5	Wear gloves, when took blood last time	21.31a	.046*
6	Wash hands before handling the HIV/AIDS patients	24.63a	.017*
7	Recapped needles immediately after using them	35.03a	.000*
8	Treated blood spills with disinfectant before clean it	16.39a	.174
9	After needle stick injury nurses ever consider starting post exposure prophylaxis at work place	8.94a	.708
10	Discriminate against HIV/AIDS people	14.63a	.262

Table 9: Association in Qualification and Practices

After applying the chi-square test there were 6 knowledge related items, which were significantly associate with the job experience. Transmission by casual contact was insignificant associate with experience $p=.456$, chi-square value 11.87a. Stay in organization did not effect on the standard precautions like gloves are not necessary when handling the body fluids or blood of the infected person $p=.093$ and chi-square value 18.80a. Job experience positively effect on the transmission by blood $p=.001$ and chi-square value 33.74a. When virus caused impaired cellular immunity it also caused decreased CD4 –Cells it is significant associate with the experience $p=.000$ chi-square value 44.76a. Significant association in job experience and recapped needles immediately for the prevention of the needle stick injury $p=.000$ and chi-square value 45.77a. (Table 10)

Sr. No	Questions	X ² value	Sig
1	Transmitted by casual contact	11.87a	.456
2	Transmitted by infected blood	33.74a	.001*
3	Virus can be killed in the environment with disinfectant	24.37a	.018*
4	Decreased in T-4 Lymphocytes causing impaired cellular immunity	44.76a	.000*
5	All HIV infected pregnant women's babies born with HIV	30.50a	.002*
6	During handling the body fluids and blood, gloves are not necessary	18.80a	.093
7	People with HIV can be asymptomatic but still infectious	25.89a	.011*
8	HIV/AIDS is highly contagious	20.65a	.056
9	Needles should be recapped immediately after using them to prevent accidental injury	45.77a	.000*
10	CD4 T-Cells <200 then assess the patient for antiretroviral treatment	20.65a	.056

Table 10: Association in Job Experience and Knowledge

There was significant association in job experience and attitude of nurses regarding HIV/AIDS patients. Only one item, patients have only themselves to blame was found insignificant value $p=.141$ and chi-square value was 17.22a. Job experience has effect on the attitude of nurses regarding HIV/AIDS patients. (Table 11)

Sr. No	Question (Attitude)	X ²	Sig
1	HIV/AIDS patients only blame to themselves	17.22a	.141
2	The patient with HIV/AIDS should put in separate rooms	35.17a	.000
3	HIV/AIDS patients have right to the same quality of care	28.57a	.005
4	HIV/AIDS patients have special caring manner as other patients	36.79a	.000
5	The health care providers are sympathetic towards HIV/AIDS patients	26.62a	.009

Table 11: Association in Attitude and Job Experience

There was significant association in job experience and nurse's practices. There was also only one item that indicate the insignificant value, experience did not associate with the discrimination of HIV/AIDS patients $p=.189$ and chi-square value 16.05a. The nurses who have more experience they encourage the HIV patients for testing and counseling $p=.000$ and chi-square value was 53.10a. The nurses refer the HIV/AIDS patients for voluntarily counseling and testing $p=.000$ and chi-square value 47.08a. Experience was effect on the referral the patients if these services are not available at their work place $p=.000$ and chi-square value 40.05a. Universal blood precautions were used by the nurses and was found significant value $p=.000$ chi-square value 44.89a. Significant association in experience and handling the patient after washing the hands $p=.000$ chi-square value 38.79a. Recapped the needles after using them and job experience was significant associate with each other's $p=.000$, chi-square value 44.64a. Experience also effect on the treated blood spills with any disinfectant before cleaning $p=.012$ and chi-square value 25.60a. (Table 12)

Sr. No	Questions (Practices)	X2	Sig
1	Encourage of HIV/AIDS for testing and counseling	53.10a	.000
2	Referral of HIV/AIDS patients for voluntary counseling and testing	47.08a	.000
3	Hospital services where, nurses refer the HIV patient for treatment	40.05a	.000
4	Universal blood and body fluid precautions at work place	44.89a	.000
5	Wear gloves, when took blood last time	30.76a	.002
6	Wash hands before handling the HIV/AIDS patients	38.79a	.000
7	Recapped needles immediately after using them	44.64a	.000
8	Treated blood spills with disinfectant before clean it	25.60a	.012
9	After needle stick injury nurses ever consider starting post exposure prophylaxis at work place	30.73a	.002
10	Discriminate against HIV/AIDS people	16.05a	.189

Table 12: Association in Job Experience and Practices

4. Discussion

There were a lot of evidences about knowledge of nurses, attitude and practices regarding HIV/AIDS varies from country to country. Although the ratio of knowledge results between poor and satisfactory was similar and the results of two questions were excellent but overall the knowledge regarding HIV/AIDS was satisfactory. In this study, overall knowledge was satisfactory but some misconceptions regarding HIV/AIDS were present. The satisfactory knowledge was found regarding transmission by casual contact 60.2% (n=124) were knew that HIV/AIDS can't transmit by casual contact. The nurses 83.1% (n=171) knew that HIV/AIDS can transmit by transfusion of infected blood. Participants were known to be HIV/AIDS positive mothers born babies with HIV/AIDS 58.8% (n=121). There is still need to enhance the nurse's knowledge because nurses play a main role in providing the nursing care towards HIV/AIDS patients. The 100% nurses should have to know about disease transmission.

Results of this study are also correlated with the study conducted in china, where 84.6% (n=148) have correct knowledge about HIV/AIDS can't be transmit by casual contact and 87.4% (n=153) replied that HIV/AIDS did not transmit by handling, touching the HIV positive person. The nurses 94.9% (n=166) said that HIV/AIDS can transmit by infected blood transfusion. About maternal transmission were knew 91.4% (n=160) persons. (Chen, Han, & Holzemer, 2004; Ellen, 2012)[4, 9]. This study indicate poor knowledge about assessing the HIV/AIDS patient for antiretroviral treatment when CD4-Cells count < 200 and poor knowledge about, it is highly contagious. It indicates satisfactory knowledge about transmission through casual contact. Similarly in a study which conducted in South Africa among nurses regarding HIV/AIDS knowledge was moderately adequate, but there were some gaps related HIV/AIDS transmission. (Delobelle et al., 2009)[4].

A similarly study revealed that nurses have some misunderstanding regarding HIV/AIDS transmission. The study was conducted in Pakistan Jinnah Hospital Lahore and revealed that the due to lack of knowledge of nurses to handling the HIV/AIDS patients can lead to bad effect on the patient's lifestyle. The knowledge of doctors was found better than the nurses. After doctors the nurses handle the patient for long time and their poor knowledge can lead to mismanage the patient. The risk of HIV/AIDS can increase. (Hafeez, Riaz, Ali, & Irum, 2017)[10].

In another study, all nurses were known about the AIDS but 7.4% nurses did not know about the causes of disease. Nurses 98.9% have to know that HIV/AIDS virus can be detected in the blood test. The nurses 97.1% have knowledge that HIV/AIDS can be transmitted but there was still confusion in participants that how to transmit the virus. 96.6% nurses were known that HIV can be treated and preventable. In the developing countries, the knowledge of nurses and other health care professionals regarding HIV/AIDS and their attitude regarding this problem are ongoing interest. In some statements nurses have excellent knowledge like gloves are necessary at the time of handling the body fluids and universal precautions also necessary when working at the clinical setting. (Chen et al., 2004; Ellen, 2012)[4, 9].

In similar another study in the Italy the nurse's answers was correct 55% to 75% about HIV/AIDS knowledge. The knowledge, attitude and practices regarding HIV/AIDS effect by the education. (Marranzano et al., 2013)[16].

In this current study nurses showed the discriminative behavior regarding HIV/AIDS patients.

In this study, overall nurse's attitude regarding HIV/AIDS patients was positive. But they also showed negative attitude in some statement e.g. patients with this problem should be put in separate rooms. Negative attitude regarding this question, Health care providers should be sympathetic towards HIV/AIDS patients. In contrast a study indicate that (84.3%) participants showed negative attitude towards HIV/AIDS. (Hassan & Wahsheh, 2011)[11].

In contrast a another study revealed that (49.4%) nurses avoid contacting with HIV/AIDS patients and it showed their negative behavior towards HIV patients. (Chen et al., 2004; Ellen, 2012)[4].

The practices of nurse's in current study regarding HIV/AIDS were satisfactory. But again, there were some practices which nurses performed accurately and it indicate good practice. The nurses have good practice regarding encourage the client to get testing and counseling. The findings of this study can be generalized because study conducted from two main Government Hospitals. It might be reflecting the nurse's knowledge, attitude and practices in the other hospitals in Lahore Pakistan. However, the sample from medical department, surgical, drug addiction, psychiatry, Peads and chest medical wards suggest that, it could be representative of the majority of nurses in this field. "Nurses stated that HIV/AIDS patients increased their work load because there is shortage of nurses and lengthy counseling procedure is required such a patient" (Delobelle et al., 2009)[5].

Overall the job experience effect on the attitude of nurses regarding HIV/AIDS patients. The study indicates that there was significant relationship in qualification and knowledge. In this study, the qualification does not cause positive attitude because they have equal attitude towards HIV/AIDS patients. Such an attitude can cause due to the fear of contagious or being infected because highly educated persons have more knowledge about transmission of disease. The degree holders performed better practices as compare to the diploma holders. Significant relationship was found between stay in organization and practices. The nurses who have less experience they also have less knowledge regarding HIV/AIDS.

A similarly study conducted in Pakistan suggested that there is no significant relationship between knowledge and attitude of nurses regarding HIV/AIDS patients. (Hafeez et al., 2017)[10].

The data was analyzed on SPSS for missing value. Normality was used to analyze the data value and accuracy. The data value and normality was checked by skewness and kurtosis that showed a well normal value. The value of Bartlett's test must be more than .60 and must be significant so all items fulfill the criteria. The value of Bartlett's test 10 items of knowledge is .80 with 45 degrees of freedom and significant ($p=.000$). The value of Bartlett's test in attitude items is .68 with df 10 and significant value ($p=.000$). The Bartlett's test value in practices items is .87 with df 45 and significant ($p=.000$) value.

5. Conclusion

The study concluded that overall level of knowledge among nurses was satisfactory but there was also some misunderstanding about transmission of disease. The attitude was shown positive and there were satisfactory practices of nurses regarding HIV/AIDS patients. There was statistically significant association between qualification and knowledge of nurses regarding HIV/AIDS patients, insignificant association in qualification and attitude and there was significant association in qualification and practices. The doctors and nurses have great participation in minimize the discrimination regarding HIV/AIDS patients. Significant relationship between stay in organization and practices, significant association in job experience and knowledge and there was also significant relationship in experience and attitude of nurses regarding HIV/AIDS.

5.1. Limitations

Non-probability sampling technique was applied in the study. There might be response bias in the results because of the sensitive topic. The study was conducted in only Government Hospitals.

5.2. Recommendations

The study suggested that there is necessity to increase the education for nurses regarding HIV/AIDS especially transmission of disease. The workshops and seminars should be held to improve the nurse's knowledge. Family and friends also should increase the education and counseled about problem. Probability sampling technique should use for accuracy of results. Study should be conducted in all over the Lahore including private sectors.

5.3. Strength of Study

- a. The self-administered questioners are used in the study and reliability and validity was checked by the cited author, it is reliable and valid questioner for data collection to this specific topic.
- b. A large sample size 286 is used to collect the data.
- c. Data is collected in Pakistan to assess the knowledge attitude and practices including demographic information from the participants regarding HIV/AIDS.
- d. The researchers continue supervision was done during data collection ensure the quality and accuracy of data for the study.

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