

Original Research Article

Factors That Influences on Standard Precautions among Nurses in Tertiary Hospital Lahore Pakistan

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Abstract: Employing standard precautions means taking precautions with everybody. If precautions are taken with everyone, health care workers do not have to make assumptions about people's lifestyles and risk of infection. Health care workers should have the right to protect themselves against infection, whether it is human immunodeficiency virus (HIV), Hepatitis or anything else. And clients have also the right to get safe service. The main objective of the study is to assess the knowledge, attitude and practices of Nurses on Standard precautions. The quantitative cross-sectional study design was used with random sampling (n=150) from Mayo Hospital. Using the self-administered questioner, data was analyzed SPSS 21 version and application of chi-square test with ($p < 0.05$). Current study showed that participant always wash hands immediately after removing gloves were 92 % (n=139) agree, nurses should take self-protective measure, 75.3% (n=114) participants were agree. Participant who don't always wash hands after removing protective gloves were (n=99)92.0% participants were agree. AIDS presents a serious occupational hazard to health care work 94% (n=144) Participants were agree. There was no significant association found in qualification and knowledge of nurses regarding recapping of infected needle, by recapping infected needle risk of AIDS is decrease. The qualification of participants did effect on the recapping of infected needle $p=0.083$ with chi-square value a which is $> .05$. Significant association in qualification and transmission of disease by infected needle. Every nurse should have a knowledge attitude and practice of standard precaution. There is a need to improve the knowledge and provide training especially universal precautions transmission of disease.

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

INTRODUCTION

Infection control and prevention measures are essential components of quality healthcare and patient safety in health care facilities. Healthcare associated infections affect people worldwide and are a global issue for patient safety [1].

Mortality and morbidity associated to health care related infection are very high. It is thought to occur in 10% of patients in the western countries and 25% of patients in resource limited countries due to unsafe infection control practices [2].

The worldwide strategy to deal with hospital acquired infections is to have infection control policies and infection control measures. In the West, knowledge and application of infection control has caused a shift in healthcare practices. It has improved public health,

caused. Positive impact on hospital stays, hospital waiting lists, and even hospital budgets [3].

The WHO has made infection control a top priority in developing countries and published practical guidelines for infection control in healthcare facilities [4].

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 use standard precaution to treat these patients[5].

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 [6].

Health workers are at higher risk of infection with blood-borne viruses including human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV). The WHO estimation shows that about 2.5% of HIV cases and 40% of HBV and HCV cases among health-care workers (HCWs) globally are because of working exposure to blood-borne pathogens. Globally two million hepatitis B, 900,000 hepatitis C.

In South Africa, 5.7 million people are infected with HIV/AIDS, and almost 1000 people die Every day due to AIDS [7].

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 by using standard precaution[8].

Health care workers especially nurses are at high risk of HIV/AIDS when they does 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 [9].

It is very important for nurses to increase their knowledge regarding standard precaution. Accurate knowledge, appropriate practices and positive attitude towards the standard precaution and standard care to minimize the cases of hospital acquired infection[10].

Problem Statement

When nurses are giving nursing care, they are exposed to patient's blood, body secretion and Used needles that are contaminated with Hepatitis B, Hepatitis C and HIV thus resulting in. Them being at risk of getting infected with these blood-borne diseases. Therefore, research has shown that knowledge and compliance regarding [11]. Standard precautions among nurses are very important as it reduces the incidence of injury or Infection [12].

Research Question

- What is the knowledge and compliance of nurses regarding standard precautions in a Mayo Hospital Lahore?

Purpose of study

Standard precaution practice is aimed at protecting both patient and health care worker. This

study aims to determine the role of knowledge, attitude and practice in performing standard precaution among nurses at clinical setting. If, they have adequate knowledge regarding the purpose of this study is to determine if nurses comply with, and if they have adequate knowledge regarding standard precautions; and to establish the factors that could influence the compliance or non-compliance of standard precautions. A better understanding of how much nurses know and the factors that influence their compliance towards standard precautions or infection control, could improve the nurses' knowledge and compliance.

Significance of the study

This study was identifying the gap between knowledge, attitude and practices of nurses regarding standard precaution. The study was generating the knowledge regarding standard precaution. The study on this topic was providing the awareness in organization about practices and attitude of nurses regarding standard precaution. After conducting the study the findings will be shared to the hospital organization so that the results will be presented to the higher authorities and policy makers. They will be motivated to make certain policies and strategies to enhance the knowledge of nurses regarding standard precaution. After the motivation of Organization and setting of certain policies the nurses can be improved their knowledge, attitude and practices towards standard precaution.

Objectives

- To identify the level of nurses knowledge towards standard precaution.
- To determine attitude of nurses on prevention of nosocomial infection
- To describe the practice of standard basic precautionary measures among nurses in the clinical setting.
- To identify associated factors of KAP towards standard precaution

Literature review

Health care workers should have the right to be able to protect themselves against infection, whether it is HIV, Hepatitis or anything else. The Safe service is the right of client. The WHO recommended these standard precautions for infection control [13].

According to a survey of a Government hospital, it was observed that 85% of the health care workers sustained a needle stick injury, and there was no institutional policy for handling such a situation. In another study conducted in a private tertiary care hospital, 1382 needle stick injuries were reported, over a period of six years, with the highest rate being during blood collection [14].

The another study was conducted in Pakistan researcher identified that supply of sterile surgical instruments has also been seen to be neglected. Unclean equipment cannot be sterilized or disinfected, and increases the risk of surgical site infections. Items such as endoscopes and ultrasonic transducers should first of all be properly cleaned manually and then sterilized and reprocessed according to the manufacturer's instructions. They should then be kept in a clean dry environment. In tertiary hospitals in northern Pakistan were observed to not be monitoring autoclaves properly. There was also no proper disinfection of routinely used instruments such as endoscopes Injection equipment's are commonly reused with sterilization [15].

A study conducted in Saudi on Standard Precautions and Infection Control, Medical Students' Knowledge and Behavior at a Saudi University: showed. A total of 251 students were included. Knowledge scores in all domains were considerably low, 67 (26.7%) students scored ≥ 24 (out of 41 points) which was considered as an acceptable level of knowledge, 22.2% in 4th year, 20.5% in 5th year and 36.8% in 6th year. Sharp injuries, personal protective equipment and health care of the providers showed the least knowledge scores. The main sources of knowledge were self- learning, and informal bed side practices The majority of students' believed that the current teaching and training are insufficient in providing them with the necessary knowledge and skills regarding standard precaution [16].

Occupational blood-borne infections (BBIs) are associated with significant morbidity and mortality. Health care workers (HCWs) are exposed to hazardous BBIs such as infection with hepatitis B virus (HBV), hepatitis C virus (HCV) and human immune deficiency virus (HIV). HBV and HCV infections are serious public health problems that can have consequences in terms of psychological and occupational diseases[17].

A study conducted in Iran revealed that, the practice of standard isolation precautions among medical students of Qazvin University of Medical Sciences was poor. Having knowledge and positive attitude alone doesn't influence practice. In addition the necessity of standard isolation in prevention of disease in patients in all duration of education must be emphasized and facilities should be improved[17].

METHODOLOGY

Targeted population

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

Inclusion criteria

Nurses who were working in these departments were included in current study.

Exclusion criteria

Nurses who did not working in selected departments were excluded from the study and the nurses who were working in other Hospitals and international nurses were also excluded from the study.

Size of sample

The study population was 250 participants and sample size was 150 which was calculated by using the "Slovin's formula" with 5% margin of error. Sample was collected by random sampling. [18].

Ethical consideration

The study will be conducted in the Mayo 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 Hospital Lahore. The rules and regulations of Hospital were not violated. Each member who was participant in this study was deal in respective way. All information was being kept confidential.

RESULTS

Participant's organization showed that 100% (n=150) from mayo hospital . Mean of organization ($1.37 \pm .48$) was related to qualification of participants. The data showed that the qualification of participants 50.0% (n=76) was General nursing & midwifery, 42.0% (n=63) were Post RN/BSN, and 7.3% (n=11) were specialized. Among 150 attendees, There were 42.0% (n=63) between 20-25years, 40.0% (n=60) were between 26-30years, 14.7% (n=22) between 31-35years and 3.3% (n=5) were >36years. (1.975 ± 0.902). There were 50% (n=75) experienced <1year, 34% (n=51) were 1-5years, 5.3% (8) were 6-10years experienced and 10.5% (n=16) were >10years experience in the study. There were 50% (n=75) experienced <1year, 34% (n=51) were 1-5years, 5.3% (n=8) were 6-10years experienced and 10.7% (n=16) were >10years experience in the study.

Demographic Information of Participants.

Gender of respondents	Female (150) 100%
Age Group of respondents	1=20-25(63) 42% 2= 26-30(60) 40% 3= 31-35(22)14.7% 4= 36-above (5) 3.3%
Experience of respondents	1=< 1 year(76)50.0% 2=1-5years(51) 34.0% 3=6-10 years(8) 5.3% 4=>10years(16)10.7%
Qualification of respondents	1=Diploma(76)50.7% 2=BSN(63)42% 3=Specialization (11)7.3%

Variable

In the study which was related to knowledge of not recapping contaminated needles the risk of occupationally acquiring AIDS is decreased, 48% (n=72) strongly agree, 34.7% (n=52) agree, 10% (n=15) Neutral, 6% (n=9) disagree and 1.3% (n=2) strongly disagree to this statement, my family and friends are seriously concerned about my risk of acquiring aids from a work related incident. 54.7% (n=82) participants were strongly agree, 28 % (n=42) agree, 15% (n=23) neutral, 2 % (n=3) agree, AIDS is the greatest occupational health threat to a health care worker. 43.3% (n=65) participants were strongly agree, 46.7% (n=70) agree, 1.3% (n=2) neutral, 7.3% (n=11) agree and 1.3 % (n=2) were strongly agree, the threat of acquiring AIDS from a work related incident is personally fighting. (n=47) participants were strongly

agree, (n=98) agree, (n=1) disagree and (n=4) were strongly disagree. AIDS is not a serious threat to any reasonably cautious health care worker 26.3% (n=58) participants were strongly agree, 57.3% (n=72) agree, 2% (n=7) disagree and 5% (n=13) were strongly disagree. I feel nurses should take self-protective measure. 43.3% (n=65) participants were strongly agree, 32.7 % (n=49) agree, 21.3 % (n=32) agree and 2.7% (n=4) were strongly disagree. Wearing gloves while starting an IV is too much of a hassle to be practical 62.7% (n=94) participants were strongly agree, 20.7% (n=31) agree, 1.3% (n=2) neutral, 11.3% (n=17) disagree and 4.0% (n=6) were strongly disagree, when the patient census and acuity levels are high it is more difficult to follow standard precaution. 33% (n=43) participants were strongly agree, 60% (n=88) agree, 11% (n=19) neutral, 16% (n=20) agree.

Nurse’s Knowledge, Attitude and practice toward compliance with standard precaution

Variable	Strongly disagree (F)%	Disagree (F) %	Neutral (F) %	Agree (F)%	Strongly agree (F)%	Cumulative frequency (F)%
By not recapping contaminated needles the risk of occupationally acquiring AIDS is decreased.	(2)1.3%	(9)6.0%	(15)10.0%	(52)34.7%	(72)48.0%	(150)100%
My family and friends are seriously concerned about my risk of acquiring AIDS from a work related incident.	(0) 0%	(3)2%	(23)15%	(42)28.0%	(82)54.7%	(150)100%
AIDS is the greatest occupational health threat to a health care worker.	(2)1.3%	(11)7.3%	(2)1.3%	(70)46.7%	(65)43.3%	(150)100%
I feel at great risk of acquiring AIDS from an occupational exposure.	(4)2.7%	(1)7%	(0)0%	(98)65.3%	(47)31.3%	(150)100%
AIDS is not a serious threat to any reasonably cautious health care worker.	(12)8.0%	(8)5.3%	(4)2.7%	(40)26.7%	(86)57.3%	(150)100%
A diagnosis or AIDS would be devastating to me	(4)2.7%	(27)18%	(0)0%	(77)51.3%	(42)28.0%	(150)100%
I feel nurses should take self-protective measures regardless of the feelings of the patient.	(4)2.7%	(32)21.3%	(0)0%	(49)32.7%	(65)43.3%	(150)100%
Wearing gloves while starting an IV is too much of a hassle to be practical.	(6)4.0%	(17)11.3%	(2)1.3%	(31)20.7%	(94)62.7%	(150)100%

When the patient census and acuity levels are high it is more difficult to follow universal precautions.	(0)0%	(20)13.3%	(19)12.7%	(68)45.3%	(43)28.7%	(150)100%
I never recap needles prior to disposing of them in a sharps container	(1)7%	(14)9.3%	(7)4.7%	(65)43.3%	(63)42.0%	(150)100%

Variable	Strongly disagree (F)%	Disagree (F) %	Neutral (F) %	Agree (F)%	Strongly agree (F)%	Cumulative frequency (F)%
I always wear gloves when starting an IV.	(3)2.0%	(9)6.0%	(19)12.5 %	(68)45.3%	(51)34.0%	(150)100%
I handle all items soiled with blood as potentially infectious	(3)2.0%	(3)2.0%	(5)3.3%	(54)36.0%	(85)56.7%	(150)100%
I do not wear gloves for vein puncture.	(49)23.8%	(98)47.6 %	(31)15%	(22)10.7%	(%)	(150)100%
I frequently recap needles before I dispose of them.	(9)4.4%	(27)13.1 %	(35)17%	(103)50%	(32)15.5%	(206)100%
I wash my hands immediately after exposure to blood or other body fluids.	(3)2.0%	(0)0%	(5)3.3%	(60)40.0%	(82)54.7%	(150)100%
I always wash my hands immediately after removing gloves.	(3)2.0%	(4)2.7%	(9)6.0%	(57)38.0%	(77)51.3%	(150)100%
I always remove my gloves and wash my hands between contacts with two separate patients	(3)2.0%	(6)4.0%	(6)4.0%	(66)44.0%	(69)46.0%	(150)100%
I do not always wash my hands after removing protective gloves	(4)2.7%	(3)2.0%	(4)2.7%	(50)33.3%	(89)59.3%	(150)100%
I have worn the same pair of gloves during multiple patient contacts,	(2)1.3%	(1)7%	(7)4.7%	(52)34.7%	(88)58.6%	(150)100%
I encourage my peers to appropriately wear gloves and other protective garments	(3)2.0%	(0)0%	(5)3.3%	(43)28.7%	(99)66.0%	(150)100%
Universal precautions require putting self-protection ahead of patient care.	(3)2.0%	(3)2.0%	(4)2.7%	(46)30.7%	(94)62.7%	(150)100%
I always wear gloves when starting an I V	(3)2.0%	(4)2.7%	(10)6.7%	(37)24.7%	(96)64.0 %	(150)100%
I do not wear gloves for vein puncture.	(4)2.7%	(9)6.0%	(5)3.3%	(57)38.0%	(75)50.0%	(150)100%
A diagnosis of AIDS would be devastating to me.	(3)2.0%	(3)2.0%	(4)2.7%	(52)34.7%	(88)53.0%	(150)100%
I feel nurses should take self-protective measures regardless of the feelings of the patient.	(3)2.0%	(7)4.7%	(4)2.7%	(57)33.0%	(79)52.7 %	(150)100%
I do not feel at risk for	(3)2.0%	(3)2.0%	(3)2.0%	(57)34,0%	(84)56.0%	(150)100%

acquiring AIDS from a work related incident.						
Wearing gloves while starting an IV is too much of a hassle to be practical	(2)1.3%	(4)2.7%	(6)4.0%	(65)43.3%	(73)48.7%	(150)100%
I do not always wash my hands after removing protective gloves.	(2)1.3%	(5)3.3%	(4)2.7%	(46)30.7%	(93)62.0%	(150)100%
I handle all items soiled with blood as potentially infectious.	(6)4.0%	(3)2.0%	(2)1.3%	(73)48.7%	(66)44.0%	(150)100%
I never recap needles prior to disposing of them in a sharps container.	(1)7%	(14)9.3%	(7)4.7%	(65)43.3%	(63)42.0%	(150)100%
AIDS presents a serious occupational hazard to health care workers.	(0)0%	(4)2.7%	(4)2.7%	(76)50.7%	(66)44.0%	(150)100%
I have worn the same pair of gloves during multiple patient contacts.	(0)0%	(0)0%	(5)3.3%	(56)37.3%	(89)59.3%	(150)100%
I feel at great risk of acquiring AIDS from an occupational exposure.	(9)4.4%	(27)13.1%	(35)17%	(103)50%	(32)15.5%	(150)100%
AIDS is the greatest occupational health threat to a health care worker.	(2)1.3%	(4)2.7%	(3)2.0%	(58)38.7%	(83)55%	(206)100%
I always wash my hands immediately after removing gloves.	(3)2.0%	(4)2.7%	(4)2.7%	(57)38.0%	(82)54.7%	(150)100%

Chi-square test application

There was no significant association found in qualification and knowledge of nurses regarding recapping of infected needle, by recapping infected needle risk of AIDS is decrease .The qualification of participants did effect on the recapping of infected needle $p=0.083$ with chi-square value a which is $>.05$.Significant association in qualification and transmission of disease by infected needle. Qualified nurses have better knowledge regarding to handle all item soiled with blood are potentially infectious $p=.000$, chi-square value 28.86a. The qualification did not effect on the knowledge about the washing of hand after to blood or body fluid $p=0.045$, chi-square value 12.409a. Significant association in the qualification and knowledge of nurses regarding not recapping of needle

prior to disposing of them in sharp container $p=.000$, chi-square value 33.21a. Knowledge regarding to hand washing after removing gloves was significant $p=.000$ 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 wearing gloves before every procedure is difficult to be practical $p=.002$ chi-square value 23.32a. There was significant association in qualification and disease is highly contagious like Aids= 0.000 chi-square value 17.33a. There is no significant association between knowledge and qualification of nurses regarding AIDS is greatest occupational health threat to a health care worker with value of $p=0.452$ and chi-square value 15.81.

Variable	Chi-square X2	Sig p
By not recapping contaminated needles the risk of occupationally acquiring AIDS Is decreased.	13.957a	0.083
My family and friends are seriously concerned about my risk of acquiring AIDS from a work related incident.	14.369a	0.261
AIDS is the greatest occupational health threat to a health care worker.	15.81a	0.452
I feel at great risk of acquiring AIDS from an occupational exposure.	17.33a	0.008
AIDS is not a serious threat to any reasonably cautious health care worker.	45.440a	0.00

A diagnosis or AIDS would be devastating to me	11.35a	0.078
I feel nurses should take self-protective measures regardless of the feelings of the patient.	12.47a	0.052
Wearing gloves while starting an IV is too much of a hassle to be practical.	61.69a	0.00
When the patient census and acuity levels are high it is more difficult to follow universal precautions.	54.39a	0.00
I never recap needles prior to disposing of them in a sharps container	33.21a	0.00
I always wear gloves when starting an IV.	15.86a	0.049
I handle all items soiled with blood as potentially infectious	28.86a	0.00
I frequently recap needles before I dispose of them.	18.75a	0.021
I wash my hands immediately after exposure to blood or other body fluids.	12.40a	0.045
I always wash my hands immediately after removing gloves.	37.14a	0.000
I always remove my gloves and wash my hands between contacts with two separate patients	31.01a	0.000
I do not always wash my hands after removing protective gloves	14.18a	0.077
I have worn the same pair of gloves during multiple patient contacts,	78.07a	0.000
I encourage my peers to appropriately wear gloves and other protective garments	7.13a	0.52
Universal precautions require putting self-protection ahead of patient care.	16.73a	0.010
I always wear gloves when starting an I V	11.83a	0.159
I do not wear gloves for vein puncture.	21.11a	0.007
A diagnosis of AIDS would be devastating to me.	13.98a	0.080
I feel nurses should take self-protective measures regardless of the feelings of the patient.	42.18a	0.000
I do not feel at risk for acquiring AIDS from a work related incident.	9.00a	0.342
Wearing gloves while starting an IV is too much of a hassle to be practical	10.32a	0.243
I do not always wash my hands after removing protective gloves.	17.25a	0.280
I handle all items soiled with blood as potentially infectious.	87.42a	0.000
I never recap needles prior to disposing of them in a sharps container.	10.30a	0.244
AIDS presents a serious occupational hazard to health care workers.	47.23	0.000
I have worn the same pair of gloves during multiple patient contacts.	2.959a	0.8143
I feel at great risk of acquiring AIDS from an occupational exposure.	15.03a	0.005
AIDS is the greatest Occupational health threat to a health care worker.	12.66a	0.124
I always wash my hands immediately after removing gloves.	23.13	0.003

DISCUSSION

Employing standard precautions and hand hygiene practice means taking precautions with everybody. If precautions are taken with everyone, nurses do not have to make assumptions about people's lifestyles and risk of infection. Nurses should have the right to be able to protect themselves against infection. The study assessed the knowledge attitude and practice of nurses toward the factor that influence standard precaution among nurses at Lahore.

In Knowledge of standard precaution is good which showed 87.5% had fair knowledge, it was better than a study conducted in Saudi Arabia which was 26.7%. overall mean score of standard precaution and prevention of infection knowledge score of respondents out of 18 the mean knowledge score 13.37 with sd of+2.42 is less than the study conducted in Chicago, USA showed mean score of knowledge (21.1 \pm 2.35) out of 25 .

The current study showed that AIDS presents a serious occupational hazard to health care work 94.7% (n=142) Participants were agree about the study. Better score was results of standard precautions this might be due to being routine tasks and applications that applied by nurses during clinical set up Particularly the knowledge level on standard precaution 61.1% had good knowledge, 25(11.6%) fair and 59(29.6%) poor knowledge. It is almost comparable with a study done in Malaysia revealed that the percentage of students who had acquired knowledge of standard precaution was slightly low (70.3%). Since 61% good knowledge scored above 80 and the fair 11% in the range between 60-80%.it was better than the study conducted in Nigeria among health care workers towards KAP on universal precaution, one third (37%) of the respondents had fair knowledge of universal precautions while 13% had good knowledge. A same study conducted in America among medical students concerning needle stick injury showed that among 146 students. Forty-three students (30%) reported needle stick injuries that most commonly occurred in the operating room; 86% of

students reported always using double gloves in the operating room; 90% reported always wearing eye protection, and all but one student had been vaccinated against hepatitis B. A concern about contracting a blood borne pathogen through work was noted in 125 students, although they usually reported that this concern only slightly influenced their decision regarding a career subspecialty.

CONCLUSION

The study concluded that overall level of knowledge among nurses was satisfactory but there were also some misunderstanding about transmission of disease. The attitude was shown positive and there were satisfactory practices of nurses regarding using standard precaution. There was statistically significant association between qualification and knowledge of nurses regarding the use of standard precaution, insignificant association in qualification and attitude and there was significant association in qualification and practices. 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 standard precaution

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.

Recommendations

The study suggested that there is necessity to increase the education for nurses regarding standard precaution 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 be used for accuracy of results. Study should be conducted in all over the Lahore including private sectors.

Strength of study

- 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.
- A large sample size 150 is used to collect the data.
- Data is collected in Pakistan to assess the factor that influences compliance with standard precaution including demographic information from the participants.
- The researcher's continue supervision was done during data collection ensure the quality and accuracy of data for the study

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