

Nurses Awareness Regarding Prevention of Nosocomial Infections in Critical Care Areas of Tertiary Care Hospital Peshawar, KPK

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Abstract

Objective: This study aimed to know nurses' knowledge regarding the prevention of Nosocomial Infection in critical care areas of tertiary care hospital Peshawar, KPK.

Methodology: A descriptive cross-sectional study was conducted among nurses in tertiary care hospital Peshawar, KPK. Participants were selected from critical care units by using a convenient sampling technique. Furthermore, data were collected by using the adapted questionnaire.

Results: Participants of the study were 47 in which 40.4% were male and 59.6% were female. The overall knowledge of participants was calculated in percentage. 83% of participants had good knowledge, 14.90% of participants had average knowledge and 2.10% of participants had poor knowledge. For identifying the association of different variables, the Chi-square test was applied.

Conclusion: The current study which was conducted in tertiary care hospital, focused on nurses' awareness regarding the prevention of nosocomial infection. The result of the study shows that nurses had good knowledge regarding the prevention of nosocomial infection.

Keywords: Nurses; Nosocomial Infection; Nurses Knowledge; Critical Areas

Background

The hospital-acquired infection (HAIs) may be due to virus, bacteria or parasite that is present in the hospital environment and is contagious. Developing countries experience a large number of nosocomial infections as compared to developed countries. These are great challenges of contemporary time, and specifically the developing countries are severely impacted by them [1].

According to Jahangir, Ali and Riaz [2], the number of HAIs in developing countries is three times more as compared to developed countries. The role of World Health Organization (WHO) must be enhanced in this regard.

The people who are concerned with the health care system are highly prone to infectious microorganisms. There are many serious infections caused due to these microorganisms. The health caregivers, who are in close contact with the patient, are at high risk of infection especially nurses. The cause of nosocomial infection may be due to the prolonged hospital stay, morbidity for a long period of time and resistance to antibiotics [3].

Nosocomial infection occurs 7 - 12% of the hospital stay, patient worldwide and more than 1.4 million people are affected from the infectious complications in hospital. 15 - 20% of patients, on intensive care units, are at risk for complication of HAIs [4].

A study conducted in India shows that 76.66% has good knowledge, 23.33% has average knowledge and no one has poor knowledge regarding nosocomial infection. In this study factors affecting the knowledge of subjects (staff nurses) are age, sex, marital status, year of experience, income, source of knowledge and working area (Sorte, 2015).

Another study showed that all the respondents have accurate knowledge about the transmission of nosocomial infection. There were 80% respondents who used sterile materials and 13% use gloves and mask. There were 23% respondents who believed that nosocomial infection transfer through urinary tract, 20% respondent believed that it transmits through the surgical wound and respiratory tract, 13% believed that infection transmits through the gastrointestinal tract [5].

Salih, Muhbes and Hindi [6] conducted a study to assess nurses' knowledge about nosocomial infection. The study sample was 129, from different units. Results indicate that the majority of nurses (84.5%) passed knowledge in concerning definition, general information related to nosocomial infection, type of nosocomial infection and transmission mode of nosocomial infection. The majority (57.4%) were passed knowledge concerning preventive measures for nosocomial infection. Most of the nurses (70.5%) passed knowledge concerning nosocomial.

Alwabr (2017) conducted a cross-sectional study for the purpose of assessing the knowledge about standard precautions and nosocomial infection among nurses, the results showed that the participant's knowledge was average, below average, good, very good and excellent (33.2%, 30.6%, 22.4%, 12.2% and 1.2%). Most of the nurses had poor knowledge (63.8%) due to poor infection control programs, inadequate information and lack of training about standard precaution and nosocomial infection.

Another study was conducted in Lahore Pakistan by Madassar, Adeel, Ali, Mehmmod and Hussain [7], the results highlighted that nurse's knowledge was good, 39% agreed that they were fully aware of hand washing protocol and 17.5% were strongly agreed among 120 participants, which indicate that nurses had adequate knowledge.

Similarly, Souza and Umarani (2014) conducted a study to assess the awareness of students on the prevention of nosocomial infection. The results showed that 88% of participants had a moderate level of knowledge, 12% had adequate knowledge regarding HAIs, and none of them were inadequate knowledge.

A study conducted by Rehman, Khan, Nahar and Ahsan [8] in Bangladesh, highlighted that staff nurses' knowledge of nosocomial infection is poor to an average level. In their study out of total score 33.6% scored < 20 which showed that they had poor knowledge and 40.8% scored 21-25 showed that they had average knowledge and only 25.6% scored 26 - 30 which indicates that they had good knowledge.

Another study conducted in Iran showed that (41.07%) of the study participants had intermediate knowledge and (75.8%) participants had intermediate performance, (65%) nurses had no proper knowledge which showed that the majority of nurses had poor knowledge regarding hospital acquired infection [9].

Another cross-sectional study shows that among all of the respondents 88% had heard about nosocomial infection. But only 60% respondent had correctly explained the concept of nosocomial infection. There was 66% respondent believe that nosocomial infection transmission through syringe, 48% believed through thermometer, 76% respondent believe through needle and 60% respondent believe that nosocomial infection transmission through person to person contact result [10].

Purpose of the Study

The purpose of this study was to know the nurses' awareness regarding prevention of nosocomial infections in critical care areas.

Methodology

Research design

The study design used in this research was quantitative research, a descriptive cross-sectional study. The current study only focused on the awareness level of nurses about nosocomial infection. As the study revealed that cross-sectional design is best when the researcher is interested to gather information at one point in time.

Population

Population for this study was registered nurses who were working in critical care units.

Sampling technique

A convenient sampling technique was used for this study. Convenience sampling is a non-probability sampling technique where subjects are selected because of their easy accessibility and proximity to the researcher (Waqar, 2015).

Sample size

Sample size was calculated by Rao soft software, population size 51 with the margin of error 5% with confidence interval 95% and calculated sample size was 46.

Data collection tool

Data has been collected through adopted questionnaire. The initial draft of questionnaire was taken from Hema Gogia and Jayanta K Das (2013) and Giri., *et al.* (2015) And after permission the questionnaire was modified according to the context and setting of current study. Pilot testing was done by 10% of participants.

Ethical consideration

Written permission was signed by Chief Nursing Officer of the hospital, and internal approval was taken from research supervisor. Informed consent was distributed among participants of this research project and confidentiality was maintained throughout the study.

Inclusion criteria

- Nursing staff who were working in critical care units.
- Those who have at least one-year experience in critical care areas.

Data analysis

The collected data was analyzed through (SPSS) version 22. The data analysis is of two types, one is descriptive and another one is inferential. In descriptive study for continuous variable mean and standard deviation was calculated. While for categorical variable frequency and percentage were used, Chi square test was applied for association among different variables.

Furthermore, the participants were divided into three categories according to their score. Participants who scored 11 - 14 = Good, 6 - 10 = Average, and 0 - 5 = Poor. The details given below in table 1.

Score 0 - 5	Poor
Score 6 - 10	Average
Score 11 - 14	Good

Table 1

Results

This study consisted of 47 participants, in which 19(40.4%) were male, 28(59.6%) were female (Table 2). As for as the qualification level of respondents, 59.60% participants were diploma holders, 40.40% were BSN degree holders (As shown in table 3).

Gender	Frequency	Percent
Male	19	40.40%
Female	28	59.60%
Total	47	100.00%

Table 2

Qualification	Frequency	Percent
Diploma	28	59.60%
BScN	19	40.40%
Total	47	100.00%

Table 3

In this study 1 - 4-year experienced participants were 39 (83.0%), 4 - 8-years' experience participants were 4 (8.5%), and 8 years and above experienced participants were 4 (8.5%), as shown in table 4.

Year of experience	Frequency	Percent
1 - 4 years	39	83.00%
4 - 8 years	4	8.50%
8 years and above	4	8.50%

Table 4: Experience of the participants.

The current study showed that 30 (63.8%) participants were single jobber while 17 (36.2%) participants were double jobber (As shown in figure 1).

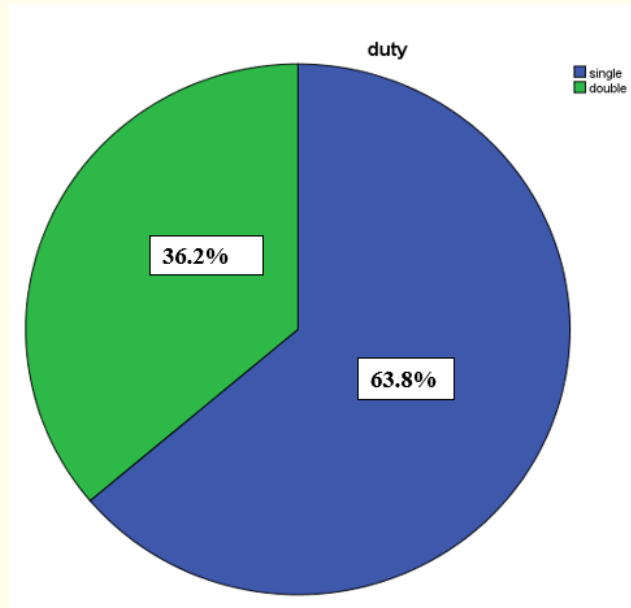


Figure 1

In knowledge category out of 47 participants 2.10% had poor knowledge, 14.90% had average knowledge and 83.00% participants scored good knowledge regarding prevention of nosocomial infection (As shown in table 5).

Category of knowledge	Frequency	Percent
Poor score 1 - 5	1	2.10%
Average score 6 - 10	7	14.90%
Good score 11 - 14	39	83.00%

Table 5: Knowledge of participants.

A Chi-square test was applied to find association among variables with knowledge. There was no association found among variables with knowledge, however significant association was reported between the year of experience and knowledge with P-value of .003.

The overall mean of participants with standard deviation was calculated where the study revealed that the mean knowledge of participants was 12.00 with the standard deviation 2.167.

The Overall Responses of the Participants

Serial No	Questions	Yes	No	Don't Know
1	Do you know about universal precautions?	83.0%	2.1%	0%
2	Do you know that personal protective measures such as (mask or gloves) are useful to prevent HAI?	87.2%	12.8%	0%
3	Do you consider all unsterile needles and sharps are contaminated?	87.2%	10.6%	2.1%
4	Do you cover the open cuts and wound during clinical work?	97.9%	2.1%	0%
5	Do you have infection control policies and guideline in your unit?	80.9%	19/1%	0%
6	It is necessary to isolate infected patient from other patients to prevent infection transmission?	91.5%	8.5%	0%
7	Do you think that isolation process can reduce the rise of nosocomial infection?	95.7%	4.3%	0%
8	Do you think that elder and immune-compromised population are at risk of contracting and nosocomial infection?	89.4%	8.5%	2.1%
9	Do you follow strict infection control practices when dealing with infected patient?	89.4%	8.5%	2.1%
10	Are you agree that single most important measure for preventing hospital acquired infection is hand washing?	87.2%	12.8%	0%
11	It is necessary to washing and disinfecting the hands immediately if contracting any blood body fluid, excretion or direct substance?	91.5%	8.5%	0%
12	Do you agree that alcohol gel is effective as recommended hand washing to reduce nosocomial infection?	66.0%	23.45	10.6%
13	Do you continue wearing ICU slippers when entering the bathroom?	48.9%	51.1%	0%
14	After examining each patient do you clean your stethoscope, Thermometer etc. with antiseptic alcohol?	91.5%	8.5%	0%

Discussion

Nurses are important members of the health care team. They play a vital role in the institutional care of the patients. Literature was searched thoroughly about knowledge regarding the prevention of nosocomial infection. Several studies were found in different countries of the world.

In the current study 83% participant had good knowledge regarding the prevention of nosocomial infection. These findings are like the studies conducted by Souza, *et al.* (2015) that highlighted that 88% participant had good knowledge. Moreover, Sorte (2015) study also showed that 76.66% had good knowledge regarding the prevention of nosocomial infection which was similar to findings of the current study.

Similarly, to the findings of this study Salih, Muhbes, and Hindi [6] conducted a study to assess nurses' knowledge about nosocomial infection. Results indicated that the majority of nurses (84.5%) were good knowledge.

Another study showed that (53%) of the study sample had fair knowledge regarding infection control measure [11]. However, in current study nurses had good knowledge regarding prevention of nosocomial infection.

Furthermore, in contrast to the finding of current study Eskandar, *et al.* (2013) reported that (63%) of participants had unsatisfactory knowledge level and more than half (57%) of population had satisfactory performance level.

The current study highlighted a good level of knowledge regarding the prevention of nosocomial infection with the mean of 12 and a standard deviation (SD) of 2.167.

There were some limitations to the study as well.

- The study was conducted in private tertiary care hospital. Therefore, the result could not be generalized to other settings.

Overall, the current study has showed good knowledge of nurses' awareness regarding prevention of nosocomial infection, but it can be improved further by specialized education. Infection control specialized nurses must be hired by the hospital for better outcome [12,13].

Conclusion

The current study was conducted in private tertiary care hospital KPK to assess nurses' knowledge regarding the prevention of nosocomial infection. Data were analyzed by SPSS, percentage, frequencies were calculated. There was no association found among variables with knowledge; however a significant association was reported between the year of experience and knowledge with P-value of .003. The results significantly showed that the nurses had good knowledge regarding the prevention of NI.

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