

Nosocomial Infections: Awareness and Practices of Nurses Regarding its Spread in a Tertiary Care Hospital of Lahore, Pakistan

Sahar Mudassar¹, Bushra Adeel², Mudassar Ali³, Faheem Mehmood⁴, Ashiq Hussain⁵

ABSTRACT

Introduction: The infections acquired in patients during admission in a hospital and the patients have no evidence of infection before admission in hospital are known as nosocomial infections or hospital acquired infections. The etiological organism may be bacterial, fungal, viral or parasitic, found in the air or on hospital items; spreading from one person to another person. The main objective of current study was to assess the knowledge and practices of nurses with respect to the spread of hospital infections in a tertiary hospital of Lahore.

Material and methods: A cross sectional, descriptive study was carried out in a tertiary hospital of Lahore, Pakistan during a period of four months from June 2018 to September 2018. Sample size was 120 and simple random sampling was done. Data analysis was done by SPSS version 21.

Results: Most of the participants 115(95.8%) were female and 5(4.2%) were male. It was revealed that nurses had enough awareness about the spread of hospital infections. Out of 120 participants, 39 (32.5%) were agree and 34(28.3%) were strongly agree that they are aware of handwashing guidelines, but their practices to reduce the spread of hospital infection were not good since 38(31.7%) were neutral and 9(7.5%) were disagree to follow the recommended guidelines for using alcohol based solutions or other antiseptics before and after each contact with patients.

Conclusion: Nurses had a good knowledge regarding the spread of nosocomial infections, use of safety precautions and use of alcohol based formulations but their practices for reducing the spread of hospital infections were not up to satisfactory level.

Keyword: Knowledge, Practice, Spread, Nosocomial Infection

studies have shown it is 15.5 per 100 patients in Europe and USA. In the Intensive care units, prevalence rate was 47.9 per 1000 patients. The commonest infection was surgical site infection which was 5.6 per 100 surgical procedures.³ Nosocomial infections have a great effect on the health of millions of people and it is considered as a major issue around the globe by all the stakeholders. In developing countries, it affects more than 25% to 30% patients admitted in health care settings. WHO needs to play its role in these countries to ensure safety and hygiene.

Every infection needs a source for its transmission. The doctors, nurses, caregiver and patients may be affected either by themselves or may serve as a carriers especially when they are attending patients without following standard antiseptic protocols. The risks of hospital acquired infections are increased when standard hygienic guidelines are avoided.⁴ In order to achieve good health of every patient in hospital, it is very necessary for all nurses to have a good knowledge of nosocomial infections, and to practice standard protocols so that the spread of infection in any healthcare setting can be minimized.⁵ The ultimate effect of nosocomial infection is a prolonged hospitalization time. It is the ultimate responsibility of health care providers to ensure safe and healthy environment for all the patients and for this all health care professionals must be well trained in controlling and preventing hospital acquired infection.⁶

Published research data shows a great difference of nosocomial infections between developing and developed countries. It is about 15.5% in developing countries in comparison to 7.1% in Europe and 4.5% in USA.² The patients on ventilators are more prone to hospital acquired infections where contaminated equipments serve as a source. The current report of International Nosocomial Infection

INTRODUCTION

Nosocomial infections, also known as hospital acquired infections, occur in patients admitted in a hospital for a long or a time due to some therapeutic or diagnostic purpose while patient has no evidence of any infection before admission to the hospital.¹ Patient has no signs and symptoms of infection before being hospitalized, however when remained hospitalized for some time came in contact with beds, linens and utensils that had been contaminated by the others patients and their attendants and acquired nosocomial infections. The etiological organism of nosocomial infection may be bacterial, viral or parasitic, that are normally found in the air and in the utensils and can easily spread from one person to another.²

The prevalence of nosocomial infections in developed countries is much lower than the developing countries,

¹Department of Pathology, Rashid Latif Medical College, Lahore,

²Department of Pathology, Rashid Latif Medical College, Lahore,

³Department of Physiology, Rashid Latif Medical College, Lahore,

⁴Department of Physiology, Rashid Latif Medical College, Lahore,

⁵Department of Anatomy, Rashid Latif Medical College, Lahore, Pakistan.

Corresponding author: Dr Sahar Mudassar, Assistant Professor, Department of Pathology, Rashid Latif Medical College, 35-Km Ferozepur Road, Lahore, Pakistan

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Control Consortium 2007-2012 showed that ventilator associated pneumonia is 15 times higher and catheter associated infection is 4 times higher in the developing countries.⁷

Nurses are at risk of gaining and transmitting the hospital infections while providing nursing care; therefore, they must gain good knowledge to control and prevent nosocomial infection spread. Application of standard measures to prevent nosocomial infection is an important part of nursing care. It has therefore been suggested that every health care workers must have a satisfactory knowledge regarding the spread of communicable diseases.⁸

A study in Kenya showed that 100% subjects practiced hand hygiene; 87.8% by using soap and water while 12.2% used alcohol based hand rub for hand hygiene. However, when observed practically, a very small proportion (16.7%) of the participants actually practiced hand hygiene before doing any procedure. A large number (100%) performed hand hygiene after touching any infected materials, for example after emptying a catheter bag. This shows that the nurses are more concerned about their lives than those of the patients.¹ Using standard precautions is the key to minimize hospital acquired infections and therefore it is essential for all health care professionals and nurses to follow standard guidelines since they are more exposed to patients. Nurses' awareness and attitudes have great influence on control and prevention of nosocomial infection.⁹

MATERIAL AND METHODS

It was a cross sectional, descriptive study conducted to check the awareness and attitudes of nurses with respect to the spread of hospital infections in a tertiary hospital of Lahore from June 2018 to September 2018. The population in this study were nurses of a tertiary hospital in Lahore, with a total of 120 samples. Data was collected by simple random sampling. We adopted 5 point Likert scale questionnaire from another article named "Exploring Knowledge, Attitudes and Practices of Registered Nurses Regarding the Spread of Nosocomial Infections" by Eunice W. Kamunge. The questionnaire had three sections: Section A had demographic

data, Section B consisted of 10 questions on the Likert scale starting from strongly agree towards strongly disagree so to check the awareness, while Section C had 14 questions on the practices of nurses with respect to spread of hospital infections. The questionnaire took about 10 minutes in completion.

Each staff nurse was given equal chance to participate in this study except the staff nurses with 1 year or less than 1 year clinical experience. To undertake the present study, consent was taken from the institute's Ethics Review Committee. Each participant voluntarily took part in the study with the reassurance that their bio data will be kept confidential and results will be anonymously presented.

STATISTICAL ANALYSIS

Statistical analysis of data was done using SPSS version 21. Descriptive statistics like mean and percentages were used for the interpretation of the data.

RESULTS

The majority of participants were females, n=115(95.8%) as compared to male n=5(4.2%). Among 120 participants, 52 (43.3%) belonged to 21-30 age group, 40 (33.3%) belonged to 31-40 age group and 28 (23.3%) belonged to 41-50 age group. 80 participants (66.7%) were having general nursing diploma, 38 (31.7%) were BSN POST RN and 02 (1.7%) participants were BSN generic (table 1,2).

DISCUSSION

The aim of this study was to check the awareness and practices of staff nurses regarding the spread of hospital infections. The demographic findings of this study were that from total 120 participants, females nurses were in the majority n=115 (95.8%) as compared to male nurses n=5 (4.2%). Nurses' knowledge regarding the spread of hospital infections was adequate. Out of 120 participants 47 (39.2%) were agree that they are fully aware of hand washing guidelines and 21 (17.5%) were strongly agree about awareness of hand washing guidelines.

These study findings were also supported by the findings of Kamunge⁶ who found that out of 352 respondents 318

Serial No.	Question	Strongly Disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly Agree n (%)
1	Can Hospital infections be transmitted through needles, syringes, catheters, thermometers, etc?	2(1.7%)	08(6.7%)	18(15%)	48(40%)	44(36.7%)
2	Should patients with any communicable disease like tuberculosis, dengue, etc be kept in a separate room?	03(2.5%)	08(6.7%)	26(21.7%)	51(42.5%)	32(26.7%)
3	Should hands be disinfected properly, before and after wearing gloves?	01(0.8%)	10(8.3%)	41(34.2%)	47(39.2%)	21(17.5%)
4	Nosocomial infections are mainly due to pathogens brought into the hospital by hospital staff?	07(5.8%)	25(20.8%)	37(30.8%)	40(33.3%)	11(9.2%)
5	Should hands be properly disinfected before and after touching a patient?	12(10%)	31(25.8%)	36(30%)	35(29.2%)	06(05%)
6	I do rub and wash my hands using alcohol before helping any surgery or caring for wound in any immunocompetent patient.	02(1.7%)	11(9.2%)	33(27.5%)	54(45%)	20(16.7%)

Table-1: Awareness of nurses regarding transmission of hospital infections

Serial No.	Question	Strongly Disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly Agree n (%)
1.	Did you follow the recommended guidelines for use of alcohol based solutions or other antiseptics before opening vascular access equipment?	01(0.83%)	13(10.8%)	31(25.8%)	51(42.5%)	24(20%)
2.	Did you wash your hands or rub with alcohol based solution or other antiseptics before and after providing a nursing procedure?	05(4.2%)	13(10.8%)	15(12.5%)	57(47.5%)	30(25%)
3.	Did you wash your hands before and after having direct contact with patient's intact skin?	02(1.7%)	27(22.5%)	34(28.3%)	41(34.2%)	16(13.3%)
4.	Did you wash your hands when moving from a contaminated body site to a clean body site during patient care?	02(1.7%)	10(8.3%)	08(6.7%)	52(43.3%)	48(40%)
5.	Did you occasionally polish your fingernails or wear artificial nails?	17(14.2%)	44(36.7%)	33(27.5%)	24(20%)	02(1.7%)
6.	I am less compliant with recommended guidelines for reducing transmission of nosocomial infections when workload increases or in emergencies.	04(3.3%)	25(20.8%)	34(28.3%)	51(42.5%)	06(5%)
7.	Did you wash your hands after touching inanimate surfaces and objects in patient's surroundings?	06(5%)	32(26.7%)	45(37.5%)	35(29.2%)	02(1.7%)
8.	Did you remove your rings, watch or bracelet before beginning hand hygiene?	15(12.5%)	51(42.5%)	22(18.3%)	23(19.2%)	09(7.5%)

Table-2: Practices of nurses regarding spread of hospital infections

(90.3%) were fully aware of hand washing guidelines. This is also revealed from this study that nurses also had good knowledge about safety precautions as 48 (40%) were agree and 44 (36.7%) were strongly agree about safety precautions. Okechukwu et al has also showed that 77.5% respondents had good knowledge about the use of safety precautions.¹⁰ In a national study¹¹ it has also been shown that the spread of hospital acquired infections can adequately be controlled by observing safety precaution and hand hygiene.

This portrayed from the findings of the study that nurses had good knowledge about the use of alcohol based formulations as 57 (47.5%) were agree and 30(25%) were strongly agree about it. These study findings were supported by Kamunge who found that 347 (98.65) respondents were knowledgeable about alcohol based formulations.⁶

The study findings showed that nurses have good knowledge about spread of nosocomial infection since 41(34.2%) were agree and 27(22.5%) were disagree that they follow the recommended guidelines for use of alcohol based solutions or other antiseptics before and after each patient contact. These finding are supported with literature where sufficient practice about control and prevention of infection from one patient to another patient and these practices should applied to every patient if patient has an infectious disease or not.¹²

The findings of this study revealed that out of 120 respondents 52(43.3%) were agree and 48(40%) were strongly agree that they wash their hands when moving from a contaminated body site to a clean body site during patient care. It was also supported by another study findings that revealed that prevention of nosocomial infection, it is necessary to change the practices of health care providers about infection control practices and hand hygiene.¹³

In a recent study conducted at the NRCOT Healthcare

Institution in Kazakhstan, it is proposed that the most important interventions to prevent HAI are active surveillance, regular infection control audits, rational and effective antibacterial therapy and general hygiene measures.¹⁴

Recommendations

Hospital management team must ensure the provision of effective equipments to control infections so that nurses could provide safe nursing care to all patients and prevent them from nosocomial infection.

Hospital management should arrange different seminars and workshops to update the knowledge and practices of nurses about control and prevention of hospital acquired infection.

CONCLUSION

From the present study we found that nurses had good knowledge of nosocomial infections, risk factors for transmission and standard hand washing guidelines to reduce hospital infections but a little more improvement in their practices to minimize the spread of hospital infections and use of hand washing guidelines is needed.

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