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Research Article

KNOWLEDGE AND PRACTICES REGARDING HOSPITAL ACQUIRED INFECTIONS AMONG NURSES OF MAYO HOSPITAL LAHORE, PAKISTAN

¹Iram Sadiq, ²Gulshad Akhtar, ³Tahira Shaheen

¹Charge Nurse, Mayo Hospital Lahore, Email ID: iramsteven@gmail.com

²Charge Nurse, Service Hospital Lahore, Email ID: gulshadakhtar@gmail.com

³Nursing Instructor, Post Graduate College of Nursing Punjab, Lahore,

Email ID: ushnaumna@gmail.com

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Abstract:

Introduction: Hospital acquired infection commonly known as nosocomial infection is a complication resulting from hospital stay either short or long term for diagnostic and therapeutic aims. The etiology may involve all types of pathogens (bacterial, viral, fungal, parasitic and protozoal) inhabiting in the air, beddings and fomites; posing a contagious threat. **Objectives:** The aim of this study is to analyze the knowledge and practices of nurses regarding the outbreak of hospital acquired infections in Mayo Hospital Lahore, Pakistan. **Design:** A cross sectional Descriptive study was conducted in Mayo Hospital Lahore, Pakistan during January 2019 to April 2019. 200 nurses were recruited and their responses were recorded through simple random sampling technique. Data was analyzed by using SPSS version 21. **RESULTS:** Most of the respondents were female 188 (94.0%) and 12 (6.0%) were male. It is discovered that nurses have enough knowledge about phenomenon associated with nosocomial infection. Out of 200 participants 84 (42.0%) agreed and 64 (32.0%) strongly agreed that they have possessed adequate knowledge regarding hand washing techniques but their practices to combat the spread of nosocomial infections were not satisfactory as 60 (30.0%) were neutral and 50 (25.0%) disagreed that they followed the recommended guidelines for use of alcohol-based antiseptics before and after attending the patients. **Conclusion:** Nurses had good knowledge about spread of hospital acquired infection, use of safety precautions, uses of alcohol-based formulations but their practices to reduce the spread of nosocomial infection were not up to satisfactory level.

Keywords: Knowledge, Practice, Spread, Nosocomial Infection

Corresponding author:**Iram Sadiq,**

Charge Nurse,

Mayo Hospital Lahore,

Email ID: iramsteven@gmail.com

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INTRODUCTION:

Hospital acquired infection formally known as nosocomial infections are an incidental finding occurring in either short and long stay admitted patients for therapeutic or diagnostic purpose with no existing evidence of infection [1]. The manifestations mostly appear as a result of contact with the air, water borne and droplets through contaminated and infected beddings, fomites, washroom and exhausts etc. All types of pathogens namely bacteria, viruses, fungi, protozoa and parasites are involved and can cause the outbreak [2]. Developed countries such as USA and UK report a much lower prevalence <16 % than rest of the world with ICUs carrying a prevalence rate of about 50 per 1000 patients. The most common presentation was surgical site infection that was about 6% of all surgical procedures [3]. Nosocomial infections render a major blow not only to the health and recovery of thousands of patients but is also being ranked a serious global threat today by all the stakeholders. Worse scenario exists in underdeveloped nations, where its prevalence is touching 30% mark. World Health Organization and UNO must intervene to ensure safe and healthy environment. Without adopting sterilization and disinfectant protocols all the health care providers can act as a potential source of secondary infection [4]. To promote a healthy attitude and environment it is imperative for all nurses to have sound knowledge regarding this phenomenon, so that the SOPs must be endorsed in full letter and spirit to check the spread [5]. The outcome of catching a hospital acquired infection is lengthening of the hospital stay and increasing the cost of treatment and antibiotic resistance. Thus it is the utmost liability of all the health care professionals especially nurses to comply and implement aseptic measures for the prevention and control of hospital acquired infections [6]. The patients on ventilator support are more prone to contract hospital acquired infection where contaminated tubing, exhausts and inlets can act as reservoirs for infection. The statistics of International Nosocomial Infection Control Consortium 2007-2012 documented that ventilator related pneumonia is 15 times higher and catheter related infection was four times higher in developing world [7]. Nurses are at increased risk of catching and transmitting hospital acquired infections while performing their professional duties; therefore, they should possess adequate knowledge and practice to prevent and control the spread of the nosocomial infection.

Compliance with the internationally recommended guidelines to check the spread of infection is an integral part of the nursing profession [8]. A study from Kenya depicted that the 100% participants practiced hand hygiene measures; 87.8% were using simple soap and water while 12.2% of them used alcohol-based preparations for hand sanitization. However, for practical purposes, a lower proportion (16.7%) of the participants performed hand hygiene before performing a procedure. Almost (100%) performed hand hygiene after handling infected materials, for example emptying a urine catheter/surgical drain. This showed the concerns of the nurses towards their wellbeing [1]. Use of standard precaution and optimizing nurse's knowledge and practices can minimize the outbreak of nosocomial infection [6].

METHODOLOGY A cross sectional descriptive study was conducted to assess the knowledge and practices of nurses regarding occurrence of nosocomial infection in Mayo Hospital Lahore, Pakistan from January 2019 to April 2019. 200 nurses were inducted through purposive simple random sampling technique. 5 point Likert scale questionnaire adopted from the article "Exploring Knowledge, Attitudes and Practices of Registered Nurses Regarding the Spread of Nosocomial Infections" by Eunice W. Kamunge was used to collect data. Questionnaire consists of three sections, section A for demographic data, section B having 10 questions on Likert scale from strongly agree to strongly disagree to assess the knowledge, while section C include 14 questions regarding the practices of nurses regarding spread of nosocomial infection. All staff nurses having clinical experience of less than 1 year were excluded. Formal approval was sought from the Ethical Review Committee, KEMU Lahore. Confidentiality and privacy was observed after duly filling the informed consent forms. SPSS version 21 was used for statistical analysis.

RESULTS:

The majority of the participants were females n=188 (94.0%) as compared to male n=12 (6.0%). Among 200 respondents, 96 (48%) belongs to 21-30 age group, 64 (32.0%) respondents belonged to 31-40 and 40 (20%) were from to 41-50 age group. 144 participants (72%) were having general nursing diploma, 48 (24%) had BSN POST RN and 8 (4.0%) participants held BSN generic. Variable Analysis Practices.

TABLE I: KNOWLEDGE OF NURSES REGARDING OCCURRENCE OF HOSPITAL ACQUIRED INFECTIONS

S#	Question	Strongly disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly agree n (%)
01	Do you agree that Nosocomial infections can be transmitted via medical equipment such as syringes, thermometers, needles, catheters, stethoscopes, BP cuffs etc?	5(2.5%)	17(8.5%)	36(18.0%)	84(42.0%)	58(29.0%)
02	Do you agree that Immunocompromised patients or those with communicable diseases (e.g. diseases respiratory, GI Tract and CNS) should be kept in private rooms?	9(4.5%)	19(9.5%)	52(26.0%)	87(43.5%)	33(16.5%)
03	Do you agree that Hand hygiene should be performed before and after removing sterile/non-sterile gloves?	16(8%)	18(9%)	67(33.5%)	83(41.5%)	28(14.0%)
04	Do you agree that Nosocomial infections are mainly caused by pathogens brought into the hospital by hospital staff?	13(6.5%)	35(17.5%)	65(32.5%)	73(36.5%)	14(7.0%)
05	Is it necessary to wash or disinfect hands before and after attending each patient.	20(10.0%)	50(25.0%)	60(30.0%)	51(25.5%)	19(9.5%)
06	I wash hands or apply alcohol based gel before performing simple surgery and caring for wounds, in patients with healthy immune systems.	6(3.0%)	23(11.5%)	55(27.5%)	90(45.0%)	26(13.0%)

TABLE 2: PRACTICES OF NURSES REGARDING SPREAD OF NOSOCOMIAL INFECTION

S#	Question	Strongly disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly agree n (%)
01	Do you follow the recommended guidelines for use of alcohol based preparations/povidine before opening invasive care equipment?	20(10%)	24(12%)	56(28%)	61(30.5%)	39(19.5%)
02	Do you wash your hands or scrub with alcohol based gels or other antiseptics before and after performing a nursing procedure?	10(5.0%)	25(12.5%)	35(12.5%)	95(47.5%)	45(22.5%)
03	Do you wash your hands before and after contacting a patient skin?	5(2.5%)	47(23.5%)	61(30.5%)	68(34.0%)	19(9.5%)
04	Do you wash your hands when moving from a contaminated body site to a clean-body site during nursing care?	4(2.0%)	18(9.0%)	18(9.0%)	84(42.0%)	76(38.0%)
05	Do you wear nail colors or artificial nails?	32(16.0%)	68(34.0%)	50(25.0%)	44(22.0%)	6(3.0%)
06	I am less compliant with recommended guidelines for reducing transmission of NI when workload increases or in emergencies	9(4.5%)	47(23.5%)	64(32.0%)	68(34.0%)	12(6.0%)
07	Do you wash your hands after touching surfaces and objects in patient's surroundings?	14(7.0%)	47(23.5%)	75(37.5%)	56(28%)	8(4.0%)
08	Do you remove your rings, watch, bracelet and hand ornaments before performing hand hygiene?	29(14.5%)	91(45.5%)	40(20.0%)	30(15.0%)	10(5.0%)

DISCUSSION:

The purpose of the study is to quantify the knowledge and practices of nurses working in Mayo Hospital Lahore, Pakistan about spread of nosocomial infection. The demographic finding of this study showed that out of 200 participants majority n=184 (92.0%) were female nurses as compared to male n=16(8.0%). Knowledge of nurses about spread of nosocomial infection was adequate. Out of 200 participants 75(37.5%) agreed that they are fully aware of hand washing guidelines and 63(31.5%) were strongly agreed about awareness of hand washing guidelines.

These findings are congruent to those reported by Kamunge⁶ who found that out of 352 respondents 318 (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 84(42%) agreed and 77 (38.5%) strongly agreed on 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 study [11] it has been advocated that the spread of hospital acquired infections can enormously be controlled by complying with the simple hand hygiene techniques.

These findings of the study depicted that nurse had good knowledge about the use of alcohol-based formulations as 61(30.5%) agreed and 39 (19.5%) strongly agreed about it. These study findings were supported by Kamunge who found that 347(98.65%) respondents were knowledgeable about the safety benefits of alcohol-based formulations [6].

The study highlighted that despite of possessing good knowledge about spread of nosocomial infection practices of nurses were not up to the mark to provide the quality of care for the prevention and control of nosocomial infections. 25(12.5%) agreed and 10 (5.0%) disagreed that they follow the recommended guidelines for use of alcohol-based solutions or other antiseptics before and after performing any procedure. These finding are not supported with literature because nurses should have prompt reflexes for infection control and prevention while moving from patient to patient [12].

The findings of this study revealed that out of 200 respondents 84 (42.0%) were agree and 76 (38.0%) were strongly agree that they perform hand hygiene by

when moving from contaminated body site to clean body site. It was also endorsed by another study that for the prevention of nosocomial infection, it is imperative to modify the practices of health care providers about infection control practices and hand hygiene [13].

CONCLUSION:

We conclude that nurses harbored enough knowledge about nosocomial infections, associated risk factors for transmission and prevention by the observance of hand hygiene techniques to combat the spread of nosocomial infection but their practices to halt the spread and compliance with global recommended guidelines for hand hygiene are unsatisfactory.

RECOMMENDATIONS

Hospital administration should ensure the provision of infection control gears and equipment round the clock in all shifts with strict surveillance and compliance so that the nurses can provide aseptic care to the patients. Tutorials, flow charts and steps and significance of hand washing techniques should be demonstrated on regular basis for sharpening the reflexes of the health care professionals.

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