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RESEARCH ARTICLE

KNOWLEDGE ON HOSPITAL ACQUIRED INFECTION AMONG NURSES

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ABSTRACT

A descriptive exploratory research design was carried out to identify on Hospital Acquired Infection among Nurses in Western Regional Hospital, Pokhara. A total of 141 nursing personnel were selected by using census method. Self administered questionnaire were used for data collection. The obtained data were coded and entered in SPSS version 20 programs and analyzed by using descriptive, statistical methods such as frequency, percentage, mean and standard deviation. This study finding revealed that only 14.9 percent of the total respondent had average knowledge about hospital acquired infection. Comparing respondent's level of knowledge according to their qualification, only 15.2 percent of graduate nurses had average knowledge and 14.5 percent of respondent had average knowledge who work in general ward whereas 15.2 percent had average knowledge who work in critical ward. Eighteen percent of the respondents with 6 months to 3 years work experience had average knowledge whereas above 5 years work experience had only 12.8 percent knowledge.

It can be concluded that most of the nurses had below average knowledge on hospital acquired infection. Graduate nurses had more knowledge than undergraduate nurses but nurses with less than 5 years of working experience had more knowledge as compared to above 5 year experiences. So, there should need of providing in-service education to experienced nurses for up to date their knowledge on control of hospital acquired infection.

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INTRODUCTION

Hospital Acquired Infections (HAI) is considered one of the most serious and complex health problems worldwide. The problem of HAIs becomes more serious in developing countries with limited resources and inadequate government budgetary allocation for health care (Al-Rawajfah *et al.*, 2011).

Nurses have hands-on daily contact with their patients and therefore play a vital role in patient safety and infection control. Nurses are expected to be aware of standards and relevant governmental directives concerning infection prevention and control practices. Public protection is achieved when nurses practice according to the standards. Knowledge of clinical infection control practices is continually growing and changing. While the principles of infection control (prevention, transmission and control) do not change, specific clinical practices may evolve as a result of new evidence (Smith, Dyan, and Lokhorst, 2011).

An Evaluative study was conducted to assess the level of knowledge and practice of infection control measures carried out in a tertiary care hospital in New-Delhi, India on 100 Nurses. Study revealed that the mean knowledge of staff nurses regarding infection control measures was 75.5% and the mean reported infection control practice was 57.5%. After conducting exhaustive lectures on infection control related topics, a significant decline in the hospital-acquired infections (HAIs) rates was seen in the high-risk areas. The study concluded that the training of nursing staff is needed to improve knowledge and practice in infection control (Taneja *et al.*, 2009).

METHODOLOGY

The descriptive explorative study design was conducted among nursing personnel working at of Western Regional Hospital (WRH). The study populations were all nursing personnel working in different wards of WRH. Census method was used to select the sample and all the subjects meeting the criteria were included in the study. There were 170 nursing personnel

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working in selected wards, out of which 141 were accessible for data collection.

Structured self administered questionnaire was developed to assess the knowledge of nurses regarding hospital acquired infection. Study was implemented after getting approval from the Institutional Review Board, Institute of Medicine and written permission from the authority of WRH. Verbal informed consent was obtained from the subjects prior to data collection. Data were collected by the principal investigator and co-investigator from 6th December to 18th December 2015 (6th December to 18th).

The collected data were organized, coded and entered in SPSS 20 version and analyzed by using descriptive statistics like frequency, percentage, mean and standard deviation.

Findings

Table 1 Background Information (n=141)

Variables	Number	Percent
Qualification		
PCL nursing	90	63.8
BN/B Sc nursing	51	36.2
Working Area		
General Wards	62	44.0
Critical Wards	79	56.0
Work Experience		
6 months to 3 years	72	51.0
4-5 years	30	21.3
>5 years	39	27.7

Table 1 shows that 63.1 percent of the respondents were passed PCL nursing, 56.0 percent were working in critical ward and 51.0 percent had 6 months to 3 years work experience.

Table 2 Knowledge on Hospital Acquired Infections (n=141)

Variables	Number	Percent
Meaning		
Infection Acquired during hospital visit or one developing among hospital staff	115	81.6
Infection Acquired during hospital visit only	26	18.4
Time for Hospital Acquired Infection		
48 hours or more after hospital admission or within 30 days after discharge	67	47.5
24 hours or more after hospital admission or within 30 days after discharge	21	14.9
24hours or more after hospital admission or within a week after discharge	15	10.6
12 hours or more after hospital admission or within a week after discharge	38	27.0
Most common Infection		
Urinary Tract Infection	32	22.7
Surgical site Infection	34	24.1
Respiratory Infection	75	53.2
Action after accidentally touching patient blood		
Wash with soap and water Immediately	91	64.5
Wash under running water	37	26.2
Clean with spirit	13	9.3
Time for hand washing		
Only performing invasive procedure	77	54.6
Before and after procedure and touching wound	64	45.4

Table 2 revealed that 81.6 percent of the respondent had knowledge about meaning of hospital acquired infection as infection acquired during hospital visit or one developing among hospital staff. Similarly, 47.5 percent of the respondent

answered infection appears in 48 hours or more after hospital admission or within 30 days after discharge, 53.2 percent had answered the most common infection is respiratory tract infection. Similarly, 64.5 percent of the respondents had answered wash with soap and water immediately after accidentally touching patient blood and 54.6 percent had answered hand washing is necessary only while performing the invasive procedure.

Table 3 Knowledge on Mode of Transmission, Handling of Urinary Bag, Skin Disinfectant (n=141)

Variables	Number	Percent
Mode of Transmission*		
Contact Transmission	91	64.5
Droplet Transmission	109	77.3
Airborne Transmission	111	78.7
Water borne Transmission	25	17.7
Vector borne Transmission	30	21.3
Handling of Urinary Bag*		
Touch only with gloved hand	107	75.9
Emptied when it is 1/4 th	77	54.6
Kept off the floor	79	56.0
Sprayed with disinfectant daily	12	8.5
Indication of skin disinfectant*		
Dressing	73	51.8
Cannula Insertion	105	74.5
NG tube Insertion	23	16.3
IM Injection	102	72.3
Catheterization	70	49.6
Blood drawing	107	75.9
Taking temperature	37	26.2

***Multiple Responses**

According to table 3, in mode of transmission of infection, 64.5 percent answered contact, 77.3 percent had answered droplet, 78.7 percent answered air borne and 17.7 percent answered water borne is the mode of transmission. Regarding while handling of urinary bag, 75.9 percent respondents answered touching only with gloved hand, 54.6 percent had answered urinary bag emptied when it is one-fourth, 56.0 percent had answered kept off the floor and 8.5 percent answered sprayed with disinfectant. Regarding indication for skin disinfectant to prevent infection, 51.8 percent of the respondents answered indication for skin disinfectant while dressing, 74.5 percent had answered while cannula insertion,

Table 4 Level of Knowledge according to Qualification, Working Area and Experiences

Variables	(n=141)			
	Excellent	Good	Average	Below Average
Qualification				
PCL	0	4 (4.4%)	12 (13.4 %)	74 (82.2%)
BN/B Sc	1 (1.9%)	5 (9.9%)	9 (17.6%)	36 (70.6%)
Total	1 (0.7%)	9 (6.4%)	21 (14.9%)	110 (78.0%)
Mean ± SD=22.5±34.6939 (PCL)				
Mean ± SD=12.75±15.84035 (BN)				
Working Area				
General Ward	0	4 (6.5%)	9 (14.5%)	49 (79.0%)
Critical Ward	1 (1.3%)	6 (7.6%)	12 (15.2%)	60 (75.9%)
Mean ± SD= 15.5±22.63478				
Mean ± SD= 19.75±27.20754				
Working Experience				
6 months -3 years	1 (1.4%)	3 (4.2%)	13 (18.0%)	55 (76.4%)
4 -5 years	0	3 (10.0%)	4(13.3%)	23 (76.7%)
Above 5years	0	2 (5.1%)	5 (12.8%)	32 (82.1%)
Mean ± SD= 18±25.21904				
Mean ± SD= 7.5±10.47219				
Mean ± SD=9.75±14.97498				

72.3 percent had answered while giving intramuscular injection, 49.6 percent had answered while performing catheterization and 75.9 percent had answered while blood drawing.

Table 4 shows that among all respondents 78.0 percent of respondent have below average (less than 70% positive response) knowledge about hospital acquired infection. According to qualification of the respondents, 82.2 %, 70.6% of PCL and BN/B Sc Nursing level had below average level of knowledge regarding hospital acquired infection. Among the respondents of general ward, 79.0 percent had below average knowledge whereas among the respondents of critical unit, 75.9 percent had also below average knowledge about Hospital Acquired Infection. Similarly, 76.4 percent, 76.7 percent. 82.1 percent respondents with 6 months – 3 years, 4 - 5 years, above 5 years working experience had below average knowledge about Hospital Acquired Infection respectively.

DISCUSSION

This study shows that majority (63.1%) of the respondent had done Proficiency Certificate Level Nursing course, majority (79.0%) of the respondents working in critical ward and 51.0 percent had 6months-3 years work experience.

Regarding knowledge of respondents on hospital acquired infection, 81.6 percent respondents had knowledge about the meaning of hospital acquired infection, 47.5 percent had answered time for hospital acquired infection is 48 hours or more after hospital admission or within 30 days after discharge. Likewise, 53.2 percent of the respondents had answered that respiratory infection as most common hospital acquired infection which is contrast with the result found by Alessandra, Gabriella, Italo (2011).

The findings of this study shows that 64.5 percent of the respondents washes their hand with soap and water after accidentally touching patient blood and 54.6 percent had answered that hand washing is necessary only while performing invasive procedure.

In total, 78.0 percent of the respondents had below average knowledge about hospital acquired infection which is contrast with the result found by Sodhi Srivastav, Arya and Kumar (2013).

Comparing respondent's knowledge according to their qualification, only 13.4 %, and 17.6% of undergraduate and graduate nurses had average knowledge (70% - 80% correct response) about hospital acquired infection. This finding is supported by study of Arati, Williamson and Gupta (2007) which reveals that graduate nurses possess more knowledge than undergraduate nurses. This study also shows that, 15.2 percent of respondents who works in critical ward had slightly more knowledge than respondents of general ward (14.5%).

Regarding working experience of the respondents, less than 5 years of working experience had average knowledge than above 5 years of working experience. This study is not supported by the study of Slyne, Phillips & Parkes (2012) which says that nurses with above 5 years experience had significantly increased knowledge of infection prevention compared to nurses with less than 5 years experience.

CONCLUSION

It is concluded that most of the nurses had below average knowledge on hospital acquired infection. Graduate nurses had more knowledge than undergraduate nurses but nurses with above 5 years experience had less knowledge than less than 5 years experience nurses. So, it is necessary to provide in-service education to above 5 years experienced nurses to update and increase their knowledge in hospital acquired infection.

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