Knowledge and Practice regarding Infection Control among Nurses in a Private Hospital of Lalitpur: A Cross-sectional Study

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Infection control is a scientifically based approach aimed at preventing infections among patients and healthcare workers in hospitals by adhering to established infection prevention guidelines. This study aimed to assess the level of knowledge and practice regarding infection control and associated factors among nurses working at B&B Hospital in Lalitpur, Nepal. A descriptive cross-sectional research design was conducted among 173 nurses working at B&B Hospital, Lalitpur, selected by a stratified random sampling technique. A self-administered semi-structured questionnaire was used to collect data on their knowledge level, and practice was measured by asking questions (audit questionnaire). Data analyses were performed on the Statistical Package for Social Science (SPSS) 20.0, using descriptive and inferential statistics. The majority of respondents (62.4%) had adequate knowledge and good practice (71.1%) regarding infection control. The level of knowledge was significantly associated with work experience (p=0.04), but had no association with age, education status, and training regarding infection control. There was no association between the level of practice and age, educational status, working experience, and training regarding infection control. Though the majority had adequate knowledge and good practice regarding infection control, the nurses in early career should be provided with regular training, and their practice should be monitored and supervised.

Keywords: infection control, knowledge, nurses, practice.

Infection prevention is a key component of quality healthcare, which prevents the transmission of microorganisms to the susceptible host.[1] Healthcare-associated infections (HAIs), also known as nosocomial infections, contribute to morbidity and mortality but are largely preventable through infection prevention strategies such as proper hand hygiene.[2] Around the world, there is a serious issue with infection control, particularly in institutions that lack the necessary tools and knowledge of infection control procedures.[3] Health care facilities frequently experience nosocomial infections, spread by direct contact with infected objects, contaminated hands, and spoiled syringes in hospitals.[4] Infection control is a crucial aspect of healthcare settings to protect both patients and healthcare workers.[5] Nurses, being in primary contact with patients, should have adequate knowledge and good practice regarding infection control to minimize the risk of getting hospital-acquired infections among patients.[6] This study aims to assess the knowledge and practice regarding infection control among nurses in a private hospital of Lalitpur.

Materials & Methods

A descriptive, cross-sectional study was conducted among 173 nurses working at B&B Hospital in Lalitpur, Nepal. Nursing in-charge, supervisors, and those working in the outpatient departments were excluded. The sample size was calculated by using Slovin's formula, the final sample size was determined to be 173, with an additional non-response rate. The Stratified Proportionate Sampling Technique was used to select the respondents.

A self-administered questionnaire with 26 knowledge-related and 20 practice-related items was used for data collection. The tool was pretested among 10% of the total sample, i.e., 17 from a similar setting, and revised accordingly.

The collected data was reviewed, coded, organized, and entered into Microsoft Excel and transferred into Statistical Package for the Social Sciences version 20.0. program for further analysis. Frequency, percentage, mean, median, and standard deviation were used to describe the descriptive data. Inferential statistics, i.e., Pearson's chi-square test method, were used to identify the association between knowledge and practice regarding infection control and

socio-demographic variables. The level of significance was set at less than 0.05.

Results

Among 173 respondents, more than half (54.3%) of the respondents were of age 25 years and below, with a mean±SD of 25.6±2.3. Regarding the level of education, the majority (61.3%) of the respondents had completed the Proficiency Certificate Level (PCL) in Nursing. More than half (54.9%) of the respondents had worked for less than 3 years. Similarly, more than half (52.6%) of the respondents received training regarding Infection Control.

Levels	Frequency (n)	Percent (%)
Adequate Knowledge (≥32 mean score)	108	62.4
Inadequate Knowledge (<32 mean score)	65	37.6
Good Practice (≥16 mean score)	123	71.1
Poor Practice (<16 mean score)	50	28.9

Table 1. Respondent's Level of Knowledge and Practice regarding Infection Control (n=173

Knowledge and Practice regarding Infection Control

Out of 173 respondents, the majority (62.4%) had adequate knowledge, and about 37.6% had inadequate knowledge regarding infection control. Likewise, the good practice of infection control was found among the majority (71.1%) of the respondents, followed by 28.9% adopting poor practice of infection control, as shown in **Table 1**.

Associated Factors of Knowledge and Practice regarding Infection Prevention

Table 2 illustrates the association of level of knowledge and socio-demographic variables, where there was significance between level of knowledge and work experience (p=0.04), but there was no significance between level of knowledge and age, level of education and training regarding infection control shown in **Table 3**.

Correlation analysis between knowledge and practice score

Table 4 demonstrates the results of Spearman's correlation analysis between total knowledge and practice score. There was no significant relationship between knowledge score and practice score regarding infection control among nurses.

Variables	Level of Knowledge		$\chi 2$	p-value
	Adequate	Inadequate		
Age in years				
≤25	55	39	1.4	0.3
>25	53	26		
Educational Qualification				
PCL	64	42	0.5	0.5
BSN/PBNS	44	23		
Work Experience				
≤3 years	66	29	4.5	0.04*
>3 years	42	36		
Training received on Infection Control				
Yes	54	37	0.8	0.4
No	54	28		

Table 2: Association of Level of Knowledge regarding Infection Control with Respondents' Characteristics (n=173)

*p<0.05

Variables	Level of Practice		X^2 value	p-value
	Good	Poor		
Age in years				
≤25	64	30	0.9	0.3
>25	59	20		
Educational Qualification				
PCL	74	32	0.2	0.6
BSN/PBNS	49	18		
Work Experience				
≤3 years	68	27	0.02	0.9
>3 years	55	23		
Training regarding Infection Control				
Yes	67	24	0.6	0.4
No	56	26		

Table 3: Association of Level of Practice regarding Infection Control with Respondents' Characteristics (n=173)

Scores	Knowledge	Practice	P-value
Knowledge	1	0.1*	0.1
Practice	0.1*	1	

Table 4: Correlation between Knowledge and Practice Score regarding Infection Control among Nurses (n=173)

Significance level at P-value <0.05;

∗Spearman correlation coefficient

Discussion

The study illustrated the level of Knowledge and Practice of respondents regarding Infection Control. The majority (62.4%) of the respondents had adequate knowledge and good practice regarding infection control. In this study, more than half of the respondents were provided training regarding infection control, and the infection control guidelines were available in the hospital. In consistent, a consistent study from Yemen reported that most of the nurses (87%) had a fair level of knowledge, and practices (71%) about nosocomial infections. [7]

In contrast, a study conducted in Egypt among 245 staff nurses reported that most (85.3%) of them had unsatisfactory knowledge and inadequate practice (71.0%) regarding infection control measures.[8] Unlike the findings of the present study, a study in Trinidad and Tobago revealed that only 20.3% of respondents were knowledgeable, and 44.0% had good practices toward infection prevention.[9] A study carried out in Bir Hospital, Nepal, among 170 nurses showed that 57.1% of respondents had adequate knowledge, and only 48.2% had good practice on infection prevention.[10] The result of the study exhibits a statistically significant association between the level of knowledge and work experience (p=0.04), while no other variable showed a significant association. The practice level was not found to have a significant association with the respondents' characteristics. In contrast, the study conducted in Northwest Ethiopia showed that age, educational status, work experience, taking training, and adherence to infection prevention and health facility factors were significantly associated with knowledge and practice of infection prevention.[11]

Conclusion

The majority of the nurses working at the tertiary care centre have adequate knowledge and good practice regarding Infection Control. The work experience was found to be significantly associated with the knowledge level. Since some proportion of the respondents still had inadequate knowledge and poor practices, regular training and monitoring of nurses would furthermore help in improving their competencies.

Conflict of interest: None

Source of research fund: None

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