

KNOWLEDGE AND ATTITUDE TOWARDS INFECTION CONTROL AMONG NURSES WORKING AT SELECTED HOSPITAL IN BANGLADESH

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Abstract: Health care providers, especially nurses and doctors are constantly exposed to microorganisms and most of them can be affected by serious as well as lethal infections. The estimations shows that the risk of nosocomial infection is 2 to 20 times higher in developing countries compared to developed countries. The study was aimed to assess the level of knowledge and attitude towards infection control among the nurses in a selected hospital in Bangladesh. A descriptive cross-sectional type of study was carried out, data were collected using self-administered semi-structured questionnaire and it was analysed using SPSS version 20. About 77.4% of the respondents were in the age group 23-33 years and above eight-tenths (84.5%) of the respondents were female. Below half (46.5%) of the respondents had diploma in nursing and more than six-tenths (68.4%) of the respondents had <5 years of service experience. Most (92.3%) of the respondents mentioned that infection happens when germs invade in a body and cause diseases. Majority (93.5%) of the respondents know about the signs and symptoms of infection and more than three-fifths (67.1%) of the respondents had attended training on infection control. The findings of this study reveal that more than seventy percent of the nurses had good level of knowledge regarding the infection control and two-thirds of the nurses were found to have positive attitude towards infection control. Training programs on infection prevention and control for newly healthcare providers should be provided.

Keywords: Knowledge, attitude, infection control, nurses, Bangladesh

Introduction

According to World Health Organization the hospital acquired infection is an infection occurring in a patient during the process of care within a health care facility which was not present or incubating at the time of admission¹. These infections are those occurring more than 48 to 72 hours after admission and within ten days after hospital discharge². Infectious patients are admitted into hospitals and therefore hospitals have become common settings for transmission of diseases. In hospitals, infected patients are a source of infection transmission to other patients, health care workers and visitors³. Nosocomial infection, also known as hospital-acquired infections is one of the leading causes of death and has much economic cost due to increased hospitalization and prognosis⁴.

Lack of knowledge among nurses can increase the rate of hospital-acquired infections as reported in the similar study conducted in Africa⁵. The majority of health care professionals are nurses and therefore nurses have the ability to facilitate safe patient care through infection prevention and control knowledge, attitude and practice in hospitals⁶. Hospital Associated Infections (HAIs) have been associated with significant morbidity and attributable mortality, as well as greatly increased health care costs⁷. A study suggested that there is a need to implement educational activities so as to permit a balance between theory and professional practice concerning hospital infection preventive measures aiming to improve knowledge and behavior⁸. This study was aimed to assess the level of knowledge and attitude towards infection control among nurses in a selected hospital in Bangladesh.

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Materials & methods

This study was carried out at Shaheed Suhrawardy Medical College & Hospital (ShSMC), Dhaka Bangladesh for a period of four months (January to April, 2017). It was a cross-sectional type of study conducted among the nurses working in the selected hospital. The registered nurses working in this hospital and who gave consent of participation were included.

A total of 155 nurses were selected using purposive sampling technique and the data were collected from the respondents using self-administered semi-structured questionnaire. After collection of the data, all the interviewed questionnaires were checked for completeness and correctness. Corrected data were entered into Statistical Package for Social Sciences (SPSS) statistical software version 20 for the analysis. The study was approved by Research Ethics Committee of the Faculty of Allied Health Sciences, Daffodil International University, Bangladesh through Department of Public Health. Written inform consent was taken from the study participants prior to data collection.

Results

Table 1: Socio-demographic characteristics of the respondents (n=155)

Socio-demographic variables	Frequency	Percent
Age (years)		
≤22	3	1.9
23-33	120	77.4
34-44	19	12.3
≥45	13	8.4
Mean± SD		30.2±6.5
Sex		
Male	24	15.5
Female	131	84.5
Marital Status		
Married	107	69.0
Unmarried	48	31.0
Educational Qualification		
Diploma in Nursing	72	46.5
B.Sc. in Nursing	60	38.7
M.Sc./MPH	23	14.8
Years of Professional Experience		
<5 years	106	68.4
5-10 years	29	18.7
>10 years	20	12.9
Monthly Income (Taka)		
≤27000	11	7.1
28000-38000	59	38.1
39000-49000	18	11.6
50000-60000	47	30.3
61000-71000	10	6.5
≥72000	10	6.5
Mean		44374.2±16367.9 Taka

Table 1 shows that close to eight-tenths (77.4%) of the respondents were in the age group 23-33 years, followed by 12.3% who were in the age group 34-44 years and the mean age of the respondents was 30.2±6.5 years. Above eight-tenths (84.5%) of the respondents were female and the rest of them were male. Close to seven-tenths (69.0%) of the respondents were married and the rest of the respondents

were unmarried (31.0%). More than two-fifths (46.5%) of the respondents had diploma in nursing, followed by B.Sc. nursing (38.7%) and the remaining of the respondents had M.Sc./MPH level of education. More than six-tenths (68.4%) of the respondents had <5 years of service experience, followed by 5-10 years (18.7%) and the rest had above >10 years' service experience (12.9%). The mean monthly income of the respondents was 44374.2±16367.9 taka.

Table 2: Nurses' knowledge on Infection Control (n=155)

Variables	Yes	No
	N (%)	N (%)
Infection is the invasion and multiplication of microorganism	142(91.6)	13(8.4)
Infection happens when germs invade in a body and cause disease	143(92.3)	12(7.7)
Knows the sign and symptoms of infection	145(93.5)	10(6.5)
Nosocomial infection is the hospital acquired infection	152(98.1)	3(1.9)
Training on infection control	104(67.1)	51(32.9)
Knows the time required for development of post-operative infection	85(54.8)	70(45.2)
Knows the source of infection in hospital setting	96(61.9)	59(38.1)
Knows the best method of sterilization	87(56.1)	68(43.9)

Table 2 shows that slightly above nine-tenths (91.6%) of the respondents mentioned that infection is the invasion and multiplication of microorganism and 92.3% of the respondents mentioned that infection happens when germs invade in a body and cause diseases. About 93.5% of the respondents know the sign and symptoms of infection and 98.1% of the respondents mentioned that nosocomial infection is the hospital acquired infection. More than three-fifths (67.1%) of the respondents had attended training on infection control and 54.8% of them knew about the time required for development of post-operative infection. About 61.9% of the respondents knew the source of infection in hospital setting and 56.1% of them knew the best method for sterilization.

Table 3: Attitude on Infection Control (n=155)

Variables	Agree	Neutral	Disagree
	N (%)	N (%)	N (%)
I wash my hand after contacting any patient	141(90.9)	6(3.9)	8(5.2)
I used chemicals for sterilization	122(78.7)	24(15.5)	9(5.8)
Healthcare providers are at risk for getting nosocomial infection	112(72.3)	31(20.0)	12(7.8)
Visitors are also at risk of getting nosocomial infection	109(70.3)	40(25.8)	6(3.9)
Poor hygiene causes most of the infection	129(83.2)	24(15.5)	2(1.3)
Improper maintenance of equipment causes some nosocomial infections	119(76.8)	33(21.3)	3(1.9)
Sterilization is one of the best method to control hospital acquired infection	130(83.9)	17(11.0)	8(5.1)

Table 3 shows that most of the respondents (91.0%) have agreed with washing hand after contacting any patients and 78.7% of the respondents were agreed with use of chemicals for sterilization. About 72.3% of the respondents were agreed that healthcare providers are at risk of getting nosocomial infection and 70.3% of them were agreed that visitors are also at risk of getting nosocomial infection. More than four-fifths (83.2%) of the respondents were also agreed that poor hygiene causes most of the infection and about 76.8% of the respondents were agreed that improper maintenance of equipment causes some nosocomial infection. About 83.9% of the respondents were agreed that sterilization is one of the best methods to control hospital acquired infection.

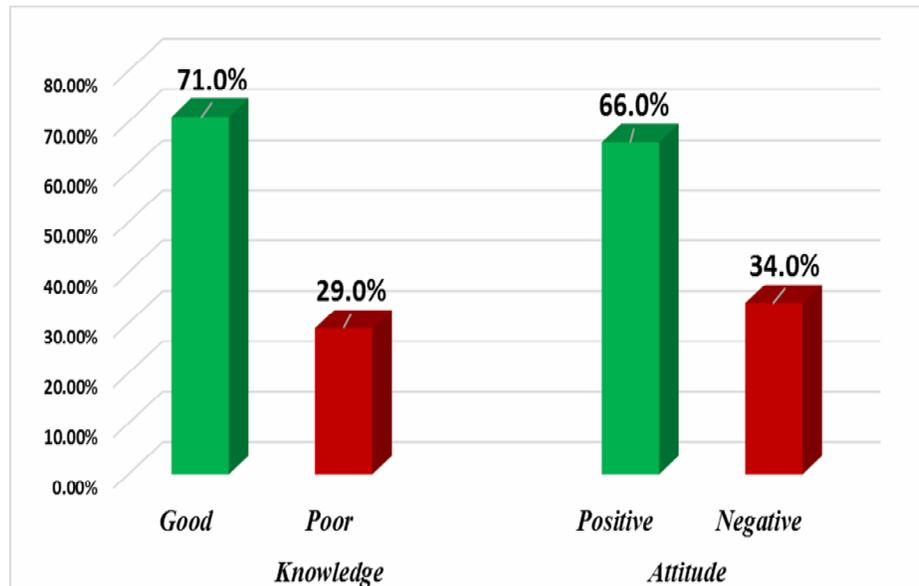


Figure 1: Level of Knowledge and Attitude on Infection Control (n=155)

Figure 1 shows that little above seven-tenths (71.0%) of the respondents had good level of knowledge regarding the infection control and the rest (29.0%) of them had poor level of knowledge regarding the infection control. It also shows that about 66.0% of the respondents had positive attitude towards infection control and the remaining (34.0%) of them had negative attitude towards the infection control.

Discussion

In present study more than three-fifths of the respondents had attended training on infection control. Training, workshop and seminars among the healthcare providers can help to reduce the occupational exposure which causes many infections. A similar study reported that the training of healthcare workers (HCWs) regarding the infection control policies is inadequate. Therefore, hospitals should review their policies on the provision of education and training regarding infection prevention and control procedures^{9,10}.

Most of the respondents (91.0%) were agreed with washing hand after contacting any patients and more than four-fifths (83.2%) of the respondents were also agreed that poor hygiene causes most of the infection. A study reported that the knowledge and practice gap in hand hygiene needs to be bridged, as the hand hygiene is the single most important means of preventing healthcare acquired infections¹¹. A hand hygiene practices have been recommended by the Centre for Disease Control & Prevention (CDC) and the Association for Professionals in Infection Control and Epidemiology¹².

Above seven-tenths (71.0%) of the respondents had good level of knowledge regarding the infection control and the rest (29.0%) of them had poor level of knowledge regarding the infection control. Our overall level of knowledge was low compared to the findings of a similar study (>80.0%)¹³. A study reported that there is need to educate healthcare providers on infection control and prevention measures. Nevertheless, this can only be achieved by understanding the gaps in knowledge and practice of infection control among healthcare providers¹⁴.

Conclusion

The findings of this study reveals that more than seventy percent of the nurses had good level of knowledge regarding the infection control and it also reported that two-third of the nurses were found to have positive attitude towards infection control. Training programs on infection prevention and control for newly healthcare providers should be provided and the nurse's knowledge needs to be updated through continuing in-service educational programs.

References

1. World Health Organization (WHO). *The Burden of Health Care-Associated Infection World Wide; 2010*. Available at: <http://www.who.int/gpsc/country-work/summary-20100430-en.pdf>. [Accessed: 20 November 2018].
2. Amy S. Collins. *Preventing Health Care-Associated Infections. Patient Safety and Quality: An Evidence-Based Handbook for Nurses*. 2008. Chapter 41. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK2683/>
3. Sydnor, E. R. & Perl, T. M. Hospital epidemiology and infection control in acute-care settings. *Clin. Microbiol. Rev.* 2011; 24; 141–173.
4. World Health Organization (WHO). *Infection prevention and control in healthcare; 2015*. Available at: http://www.who.int/csr/bioriskreduction/infection_control/en/. [Accessed: 24 March 2017].
5. Tirivanhu, C., Ancia, M. & Petronella, S. Barriers to infection prevention and control practice among nurses at Bindura provincial hospital, Zimbabwe. *Journal of nursing and health science*; 2014; 1(3):69-73.
6. Benson, S. & Powers, J. *Nursing Made Increasingly Easy*, 2011; 9(3):36-4
7. Rosenthal MB. Nonpayment for performance? Medicare's new reimbursement rule. *N Engl J Med.* 2007; 357(16):1573-1575.
8. De Oliveira, A.C., Cardoso, S.C. & Mascarenhas, D. Intensive Care Unit professionals' knowledge and behaviour related to the adoption of contact precautions. *Rev. Latino-Am. Enfermagem* 2009; 15:5.
9. Suchitra JB, Lakshmi D.N. Impact of education on knowledge, attitudes and practices among various categories of health care workers on nosocomial infections. *Indian J Med Microbiol.* 2007; 25(3):181-7.
10. Angelillo IF, Mazziotta A, Nicotera G. Nurses and hospital infection control: knowledge, attitudes and behaviour of Italian operating theatre staff. *Journal of Hospital Infection*, 1999; 42: 105-112
11. World Health Organization (WHO). *WHO Guidelines on hand hygiene in health care*. 2009. Available at: http://whqlibdoc.who.int/publications/2009/9789241597906_eng.pdf. [Accessed: 24 February 2018].
12. Garner J.S, Favero MS. CDC. *Guidelines for the prevention and control of nosocomial infections, Guideline for hand washing and hospital environmental control, 1985. Supersedes guideline for hospital environmental control published in 1981. American Journal of Infection Control*, 1986; 14; 110-129
13. Larson E, Kretzer EK. Compliance with hand washing and barrier precautions. *J Hosp Infect.* 1995; 30(Suppl):88–106.
14. Iliyasu G, Dayyab FM, Habib ZG, Tihamiyu AB, Abubakar S, Mijinyawa MS, et al. Knowledge and practices of infection control among healthcare workers in a Tertiary Referral Center in North-Western Nigeria. *Ann Afr Med.* 2016; 15(1):34-40.