



Knowledge, Attitude and Practice of Staff nurses on Hospital Acquired Infections in tertiary care Hospital of Dhaka city

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Abstract

Introduction : Hospital acquired Infections (HAIs) are called those infections that were not present at the time of patient' hospitalization in a hospital and have been acquired after hospitalization. Nurses are an important part of the any healthcare team who play a unique role in the control of Hospital acquired infections.

Objective : The aim of this study was to investigate the level of knowledge, attitudes, and practices of staff nurses about preventing the spread of hospital acquired infections (HAIs) at tertiary care Hospital of Dhaka city.

Methods and Materials : This descriptive cross-sectional study was done among nurses having two years experience from two tertiary level hospitals in Dhaka city during January to June 2017. Self administered questionnaire containing different set of questions regarding knowledge, attitude and practice on HAI were used as a tool for data collection. Questionnaire was supplied to all staff nurses available at different in-patient wards of these two hospitals. Only 234 staff nurses who completed and returned the questionnaire were included in this study. Data were analyzed using Microsoft excel 2013 software.

Result : Staff nurses were found to have good knowledge, moderately positive attitude but poor practice in prevention of hospital acquired infections. About 95% of the participants considered that prevention of HAIs were a valuable part of their role. About 65% of the staff nurses had received formal training regarding hand hygiene. The 100 % of participants felt that they would be less likely to transmit infection to the patients if they performed hand-hygiene. About 64% of them argued that hand hygiene agents were not readily available in current settings. Regarding practice, only 6% performed hand hygiene before patients contact and 27% of the staff nurses reported that they often forgot to perform hand hygiene.

Conclusion : The finding of this study revealed a good knowledge of infection prevention among the majority of participants with relatively minimal level of practice. For strengthening the knowledge, attitude and practice towards HAIs, there is in need of developing regular training program and monitoring on performance feedback regarding hand hygiene is recommended.

Key Words : HAIs. KAP. Hand-hygiene. Hand-washing.

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Introduction

Hospital Acquired Infections (HAIs) are not present at the time of patient' hospitalization but acquired after admission in to hospital. It is also referred to as Nosocomial infections. The time frame definition of HAIs is at least 48-72 hours after hospitalization, 3 days after leaving the hospital, 30 days after surgery or 1 year after the implant. Hospital acquired infections (HAIs) are a common global challenge mainly in low and middle-income countries.¹ An estimated 10% of hospitalized patients in developed countries and 25% in developing countries

develop HAIs and subsequently results in adverse healthcare outcomes as increased hospital stay, economic burden, significant morbidity, and mortality.¹

The high burden of HAIs is due to lack of standardized infection prevention program which was neglected due to limited resources, poor sanitary conditions and hygiene practices.² In 2010, a data report for HAIs cases among 2,473 hospitals showed an increased number of infections associated with the use of medical equipment, most of which were displayed in surgical units. Also, other researchers reported

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that patients who underwent surgical procedures had a greater chance of developing HAIs, compared to other patients.³ HAIs associated morbidity and mortality are preventable through infection prevention strategy like, proper hand hygiene.⁴ A prevalence survey conducted under the auspices of WHO in 55 hospitals of 14 countries representing 4 WHO Regions (Europe, Eastern Mediterranean, South-East Asia and Western Pacific) showed an average of 8.7% of hospital patients had HAIs. At any time, over 1.4 million people worldwide suffer from infectious complications acquired in hospital.⁵

HAIs are mostly transmitted by healthcare workers (HCW) who fail to practice infection prevention measures. Hence, Healthcare workers including nurses, doctors are front line of protecting themselves and patients from infection.³ Identifying existing infection control knowledge attitudes, and practices (KAP) among health care workers (HCWs) is a key first step in developing a successful infection control program. In an effort to raise awareness and provide guidance in combating HAIs in resource limited settings (RLS), the World Health Organization (WHO) launched the Global Patient Safety Challenge: Clean Care is Safer Care campaign. A cornerstone of the program is to decrease HAIs through improving hand hygiene among healthcare workers.^{6, 7} Most HAIs are transmitted by health care personnel who fail to practice proper hand washing procedures or change gloves between patient contacts. Health care workers such as nurses, doctors can be a major source of pathogens.⁸

As members of the health care team, nurses play a very important role in HAI control. Nurses must have sufficient information and necessary skills in this field. The results of a study conducted by Darawad et al. on nursing students in Yemen showed that most nursing students have low levels of knowledge, a positive attitude, and a moderate practice about infection control. The education, training, motivation regarding HAIs has a positive impact on retention of KAP in all categories of health workers including nurses to prevent infections that was evidenced in previous researches.⁹ Therefore, this study aimed to investigate the knowledge, attitude and practice on hospital acquired infection prevention among health care workers (staff nurses) at tertiary care hospital.

Materials And Methods

This descriptive-cross-sectional study was done among staff nurses in two tertiary care Hospitals, Dhaka Medical College Hospital and Holy Family Red Crescent medical College hospital of Dhaka city during January-June, 2017.

Following inclusion and exclusion criteria a questionnaire was supplied to all staff nurses available at different in-patient wards of these two hospitals. Among 234 nurses who responded, filled completely and returned the questionnaire were included in this study.

Inclusion criteria: Only staff nurses who completed at least diploma in nursing or having higher degree, 2 years experience in nursing service and agreed to participate in this study.

Exclusion criteria: Staff nurses having less than 2 years working experience and were not to agree to participate and staff nurses who did not complete and returned data sheet were excluded from this study sample. Data was analyzed using Microsoft excel 2013 software. Permission from Ethical review board of these two hospitals was obtained and written consent was taken from all participants in this study.

Instruments and Techniques: Structured, self administered questionnaire prepared following the guide line of "WHO hand hygiene knowledge questionnaire for health care workers". It was consisting of questions on knowledge, attitude and practices on HAIs. Knowledge was assessed using 10 questions with options either "yes" or "no". Attitude and practice were assessed using a set of 14 and 8 questions respectively. The participants were given "yes" or "no" options to select based on their attitude and practice regarding HAIs. All the questions were subjected to a pre-testing prior to the study and obtained suggestions were taken into consideration. A scoring system was used where 1 point was awarded for each correct response to knowledge, positive attitudes, and good practices. Incorrect knowledge, negative attitudes, and poor practices were given 0 points. A score greater than 75% was considered as good, 50% -74% moderate and less than 50% poor.

Knowledge-is clear awareness and understanding on infection prevention activities when caring patients.

Attitude-is s personal view on infection prevention activities when caring patients.

Practice-is a skill on infection prevention activities when caring patients.

Results

Highest proportion of the participants(95%) were aware of the fact that washing hands with soap or an alcohol based antiseptic decreases the risk of transmission of hospital acquired pathogens. Similarly, (91%) of them disagreed to the fact that hand washing is not necessary if the hand are not visibly dirty. A larger proportion (79%) of the participants still considered that gloves provided complete protection against acquiring/transmitting infections. Only (88%) of them realized that same pair of gloves cannot be worn for multiple patients as long as there is no visible contamination on the gloves and it should be changed after each patient contact. The percentage of participants who considered that healthcare-associated pathogens can be found on normal, intact patient skin was (78%) whereas the rest (12%) believed that intact skin does not harbor pathogens. The knowledge that when using alcohol

based antiseptics, hands should be rubbed until dry prevailed among 70% of the participants. The fact that hand hygiene act should be performed before and after direct patient contact was agreed upon by 91% of the study population. About 77.3% of the participants had good knowledge regarding HAIs. However, 22.7% still lacked good knowledge regarding HAIs

Table 1: Knowledge on Hospital acquired infections (correct responses):

No	Questions regarding Knowledge	no of participant (N=234)	%
K1	Gloves provide complete protection against acquiring/transmitting infection (false)	49	21
K2	Healthcare-associated pathogens can be found on normal, intact patient skin (true)	183	78
K3	Washing your hands with soap or an alcohol based antiseptic decreases the risk transmission of hospital acquired pathogens (true)	222	95
K4	If my hands are not visibly dirty, there is no need to wash my hands prior to patient contact (false)	213	91
K5	Use of an alcohol based antiseptic for hand hygiene is as effective as soap and water if hands are not visibly dirty (true)	138	59
K6	Gloves should be worn if blood or body fluid exposure is anticipated (true)	204	87
K7	When using alcohol based antiseptics, I should keep rubbing my hands until dry (true)	164	70
K8	There is no need to wash hands before doing procedures that do not involve bodily fluids (false)	218	93
K9	Hand hygiene should be performed before and after direct patient contact (true)	213	91
K10	I can wear the same pair of gloves for multiple patients as long as there is no visible contamination on the gloves (false)	206	88

In relation to attitude of the staff nurses, (65%) of the staff nurses had received formal training regarding hand hygiene and (57%) thought their supervisors stressed on the importance of hand hygiene. (27%) of the staff nurses reported that they often forgot to perform hand hygiene. Majority of the staff nurses 100 % felt that they would be less likely to transmit infection to the patient if they performed hand-hygiene. Regarding various hindrances in adoption of hand hygiene 64% participants identified that hand hygiene agents (alcohol based hand sanitizer or soap and water) were not always available. 84% identified that clean towels to dry their hands after washing were not always available. 56% identified that the sinks were inconveniently located. 95 % participants considered that prevention of HAIs is a valuable part of nurse's role. Regarding attitude on HAIs 64% showed moderate attitude.

Table 2: Attitude on Hospital acquired infections (Responses on agreement)

No	Questions regarding attitude	no of participant (N=234)	%
A1	Hand Hygiene agents are not always available	149	64
A2	Clean towels to dry my hands after washing are not always available	196	84
A3	Gloves are always available when needed	134	57
A4	Sinks are inconveniently located	134	56
A5	Sinks are not available	79	34
A6	Hand hygiene agents cause Irritation and dryness	58	25
A7	Hand hygiene interferes with HCW-patient interactions	116	50
A8	I often forget to perform hand hygiene	64	27
A9	I have a very low risk of acquiring infections from my patients.	78	33
A10	If I perform hand hygiene, I am less likely to transmit infections to my patients.	234	100
A11	Prevention of HAIs is a valuable part of HCWs role	223	95
A12	I have received training about the importance of hand hygiene	152	65
A13	The importance of hand hygiene is emphasized by my clinical supervisors.	134	57
A14	I would feel uncomfortable reminding a HCW to perform hand hygiene.	98	42

With respect to hand hygiene practices, 79 % of the participants had performed hand hygiene after going to toilet. Only 43% of the participants performed hand hygiene before caring for wound and 61% after caring for the wound. Only 6% performed hand hygiene before patient contact and 29 % performed hand hygiene act after patient contact. If the hands felt or looked dirty, 71% of the participants performed hand hygiene. Practice of hand hygiene after removal of gloves was performed by 37 % of the participants. Practice was poor only 36% practiced on HAI prevention.

Table 3: Practice on Hospital acquired infections (Always/often responses)

No	Questions regarding practice of hand wash	no of participant (N=234)	%
P1	Before Patient Contact	14	6
P2	After Patient Contact	67	29
P3	If they look or feel hand is dirty	167	71
P4	After going to the toile	185	79
P5	After contact with blood or bodily fluids	198	85
P6	Before caring for a wound	101	43
P7	After caring for a wound	142	61
P8	After removing gloves	87	37

Discussion

In order to reduce HAIs in any hospital, knowledge of HAIs and compliance to methods in preventing them like proper practice of aseptic and antiseptic precautions by health care workers are very much essential. This study was done to assess the level of knowledge, attitudes, and practices of staff nurses working in tertiary hospitals.

In our study among the staff nurses, we found good knowledge

among the staff nurses on HAIs and measures to prevent it. This was consistent with the study conducted among the HCWs in Ethiopia and Nepal in similar settings.^{10,11} Our study revealed that still 35 % did not received any formal training in hand hygiene. A study conducted in India regarding the knowledge, attitude and practice of different group of HCWs about infection control concluded that training has a positive impact on the improvement of KAP in health care personnel. They also suggested that development of continuous training program for all HCWs is necessary.¹²

More than half (64%) of the participants reported that hand hygiene agents like- alcohol based hand sanitizer, soap and water were not easily available. Similarly, (84%) reported, clean towels to dry the hands after washing were also not always available. The sinks for washing purposes were inconveniently located and inadequate at the hospital-settings. These findings are in accordance to a similar study conducted in Srilanka¹³. Thus increasing the supplies necessary for hand washing and institutional support is essential in combating the substandard practices in hand hygiene.^{9,11,12} Limited accessibility of hand hygiene facilities has been shown to be an important risk factor for poor adherence to recommendations.¹³ Our study showed that although there were a number of limitations in current-health care settings, staff nurses had moderately positive attitude towards limiting hospital acquired infections control.

More than half (57%) of the participants reported that the importance of hand hygiene was emphasized by their clinical supervisors. An important finding from this study was that 94% of the participants do not adopt any measure of hand hygiene for prevention of HAIs prior to patient contact despite 91% have the knowledge that hand hygiene should be performed before and after direct patient contact. The result of the present study showed that nurses had a good knowledge but poor practice in prevention of HAIs. A study in India reported less than desirable level of practice but a study in Nepal reported more among the health care personnel.¹¹

Conclusion

The finding of this study revealed a good knowledge of infection prevention among the majority of participants with relatively minimal level of practice. However there is the need of regular

training and performance feedback regarding hand hygiene and the hospital environment should be hand-hygiene friendly with easily accessible to sinks and other facilities. It is also necessary for an effective infection prevention team for updating of existing practices to reduce hospital acquired infections among staff nurses.

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