

Knowledge, Attitude and Practice of nursing students regarding hand hygiene in Western region of Nepal

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ABSTRACT

Background & Objectives: Hospital acquired infections (HAIs) are thought to be transmitted by the hands of health care workers (HCWs). Reducing HAIs requires that HCWs take responsibility for ensuring that hand hygiene becomes an everyday part of patient care. This study was conducted with objectives of assessing the level of Knowledge, attitude and practice (KAP) regarding hand hygiene among nursing students in the Western Region of Nepal. **Materials & Methods:** This descriptive cross-sectional study was conducted among nursing students posted in different wards of two hospitals of Pokhara. A self administered questionnaire containing different set of questions regarding knowledge, attitude and practice on hand hygiene were used for data collection. **Results:** A total of 99% of the participants reported that they were acquainted with the WHO recommended steps of hand washing. The knowledge on hand hygiene was moderate (84%) among the total study population. Knowledge regarding the minimum time needed for alcohol based hand rub (20 sec) was known correctly by only 24 % of the participants. A total of 90% of the participants had positive attitude towards hand-hygiene. A total of 29% of the correspondents believed that they had not been properly instructed in hand hygiene during their practice, 56% of the participants exhibited good practice regarding hand hygiene and 91% realized that the presence of an infection prevention team would have positive influences on their hand hygiene practices. **Conclusion:** Moderate knowledge among majority of the nursing students reflected upon their positive attitude and practice regarding hand hygiene among them. Essentially, most of the nursing students considered hand hygiene as an essential part of their role. Improvement of accessibility to hand hygiene facilities would play an important role to improve the compliance to hand-hygiene in current practice.

Key words: HAIs; HCWs; KAP; Hand-hygiene; Hand-washing

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INTRODUCTION

Health care associated infections (HAIs) are the major cause of mortality and morbidity among the hospitalised patients contributing 7-10% of the hospital admissions.¹ Effective hand hygiene can lower the prevalence of healthcare associated infections. Unfortunately, the prevalence of these infections continues to rise and poses a challenge to healthcare providers. Healthcare associated infections due to poor hand hygiene has been linked to an unacceptably high level of morbidity, mortality and healthcare costs.² The concept of hand hygiene and antiseptics was introduced by

Ignel Semmelweis who demonstrated that cleansing heavily contaminated hands with an antiseptic agent between patient contacts may reduce health-care-associated transmission of contagious diseases more effectively than handwashing with plain soap and water.³ Nurses constitute the largest percentage of the health careworkers⁴ and they are considered as the “nucleus of the healthcare system”.⁵ Because they spend more time with patients than any other HCWs, their compliance with hand washing guidelines seems to be more vital in preventing the disease transmission among patients.

The knowledge, attitude, practice and satisfaction of facilities of nursing students regarding hand hygiene are unsatisfactory. Various studies show the need for further improvement of existing hand hygiene programmes to address the gaps in KAP.^{6,7} However in the context of Nepal, very limited studies have been conducted to explore this subject although the prevalence of healthcare associated infections is higher in our region.

This study was undertaken with the objective of assessing the Knowledge, attitude and practice of hand-hygiene among the nursing students in the Western part of Nepal. It also aims to determine the various factors involved in poor hand-hygiene practices and possible solutions to address them.

MATERIALS AND METHODS

Study design: Descriptive-cross-sectional study conducted among the nursing students in the Western region of Nepal.

Study site: Gandaki Medical College Teaching Hospital (GMCTH) and Fewacity Hospital (FCH), Pokhara

Study population: PCL Nursing students posted at different in-patient wards of the hospitals

Sample size: 117

Study period: May-June, 2016

Sampling procedure: All nursing students available at different wards of the hospitals during the survey were included in the study.

Instruments and Techniques: Semi structured, Semi structured, self administered questionnaire consisting of questions on knowledge, attitude and practices on hand hygiene. Knowledge was assessed using WHO's Hand Hygiene knowledge Questionnaire for Health Care Workers which consisted of 21 questions including "yes" or "no" questions and multiple choice questions.

Attitude and practice were assessed using another self-structured questionnaire consisting of 10 and 6 questions respectively. The respondents were given "yes" or "no" options to select based on their attitude and practice regarding hand hygiene.

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. The cut-off values to determine good, moderate, and poor levels were taken from previously published studies with some

modification to suit our purpose. A score > 75% was considered good, 50% - 74% moderate, and < 50% poor.

Data Analysis: Data was analyzed using Microsoft excel 2010 software.

Ethical considerations: Ethical clearance was obtained from the Institutional Ethical Committee of Gandaki Medical College.

RESULTS

A total of 117 participants were enrolled in the study. Majority of the students (89%, 105 out of 117) had received formal training in hand-washing. On inquiry about their acquaintance with the WHO recommended steps of hand-washing 99% (116 out of 117) reported that they were acquainted with the steps.

Knowledge regarding hand hygiene:

The knowledge on hand-hygiene was moderate (84%, 98 out of 117) among the total study sample population. 15% of the participants (18 out of 117) had poor knowledge and 1% had good knowledge.

The response of participants regarding prevention of transmission of germs to the patient, could be done by adopting hand hygiene at different times: before touching the patient (90%), immediately after a risk of body fluid exposure (90%).

Conversely the response of participants for prevention of transmission of germs to the HCWs could be done by hand hygiene action were identified as: after touching the patient (85%), immediately after a risk of body fluid exposure (89%). A fact to be noted is the correct knowledge regarding the minimum time needed for alcohol based hand rub (20 sec) was known correctly by only 24 % of the participants.

66% of the correspondence identified hand rubbing as a more rapid method for hand cleansing than hand washing. 46% of the participants identified hand washing as a more effective method as hand rubbing.

Most of the participants were aware that wearing jewellery, damaged skin, artificial fingernails are associated with increased likelihood of colonization of hands with harmful germs.

Attitude regarding hand hygiene:

The response of the participants to attitude based questions revealed that their attitude towards hand-hygiene was satisfactory. Majority of the participants (90%, 105 out of 117) had positive attitude towards hand-hygiene.

74% of the participants adhered to correct hand

Table 1: Knowledge regarding hand hygiene (Correct responses)

Questions	N=117	%
K1 Before touching the patient (yes)	105	90
K2 Immediately after a risk of body fluid exposure (yes)	104	90
K3 After exposure to the immediate surroundings of a patient (no)	38	32
K4 Immediately before a clean/aseptic procedure (yes)	94	80
K5 After touching the patient (yes)	100	85
K6 Immediately after a risk of body fluid exposure (yes)	104	90
K7 Immediately before a clean/aseptic procedure (no)	27	23
K8 After exposure to the immediate surroundings of a patient (yes)	86	74
K9 Minimal time needed for alcohol based handrubs (20 seconds)	28	24
K10 Handrubbing is more rapid for hand cleansing than handwashing (true)	77	66
K11 Handrubbing causes skin dryness more than handwashing (false)	50	43
K12 Handrubbing is more effective against germs than hand washing (false)	54	46
K13 Handwashing and handrubbing are recommended to be performed in sequence (false)	20	17
K14 What is the minimal time needed for alcohol-based handrub to kill most germs on your hands? (20 seconds)	28	24
K15 Before palpation of the abdomen (rubbing)	35	30
K16 Before giving an injection (rubbing)	15	13
K17 After emptying a bedpan (washing)	84	72
K18 After removing examination gloves (rubbing/washing)	112	96
K19 After making a patient's bed (rubbing)	20	17
K20 After visible exposure to blood (washing)	80	68
K21 Wearing jewellery (yes)	106	91
K22 Damaged skin (yes)	99	85
K24 Artificial fingernails (yes)	108	92
K24 Regular use of a hand cream (no)	40	34

hygiene practice at all times and 96% responded that they suggest others to engage in hand hygiene all the times. However 52% responded that sometimes they had more important things to do than hand hygiene and 84% responded that Emergencies and other priorities make hygiene more difficult at times.

Notably, 29% of the correspondence believed that when they were in enrolled in nursing school, they had not been properly instructed in hand hygiene during their practice.

Practice regarding hand Hygiene:

On analyzing the hand-hygiene practice among the participants most of them exhibited good hand-

hygiene practices (56%, 66 out of 117). Similarly, 38% (44 out of 117) had moderate practices and 6% (7 out of 117) exhibited poor practice regarding hand-hygiene.

97% of the participants felt that hand hygiene was an essential part of their role. However 52% agreed that they sometimes missed out hand hygiene simply because they forgot it. 91% realized that the presence of an infection prevention team would have positive influences on their hand hygiene practices.

Display of posters, pamphlets for infection prevention would remind all to do hand hygiene was agreed upon by 85%. Similarly, 28% of the participants felt that it was difficult for them to

Table 2: Attitude regarding hand hygiene

Questions	N=117	%
A1 I stick to correct hand hygiene practices at all times	87	74
A2 I have sufficient knowledge about hand hygiene	94	80
A3 Sometime I have more important things to do than hand hygiene	61	52
A4 Emergencies and other priorities make hygiene more difficult at times	98	84
A5 Wearing gloves reduce the need for hand hygiene	51	46
A6 I feel frustrated when others omit hand hygiene	61	52
A7 I suggest others to engage in hand hygiene	112	96
A8 When I am enrolled in nursing school I have not been properly instructed in	34	29
A9 I feel guilty if I omit hand hygiene	83	71
A10 Practicing hand hygiene technique is easy in the current setup	97	83

Table 3: Practice regarding hand hygiene

Questions	N=117	%
P1 Sometime I miss out hand hygiene simply because I forget it	61	52
P2 Hand hygiene is an essential part of my role	113	97
P3 Practicing hand hygiene for each patient makes it difficult for me to carry it out as often as necessary	55	47
P4 Infection prevention team would have a positive influence on my hand	107	91
P5 Infection prevention posters, pamphlets remind me to do hand hygiene	99	85
P6 It is difficult for me to attend hand hygiene courses due to time	33	28

attend hand hygiene courses due to time pressure to update their knowledge regarding hand hygiene.

DISCUSSION

Hand hygiene is the most important tool in preventing the nosocomial infections as the hand of healthcare workers including nurses are the most common mode of transmission of microbes to patients. Poor access to hand washing facilities like sinks, irritant contact dermatitis associated with frequent exposure to soap and water, the time required to perform standard handwashing, high workload, knowledge-deficit among HCWs and failure of administrative leaders to make hand-hygiene an institutional priority are the factors that contribute to poor adherence to hand-hygiene.²

It is important to carry out training programmes on hand hygiene regularly for health care workers as it has been associated with increased compliance to

hand hygiene practices and reduction of infection.^{8,9} It is very much essential to instill correct knowledge, good attitude and correct practice regarding hand hygiene during the period of primary training of all HCWs.

In our study majority of the participants were found to have moderate knowledge on hand hygiene which is definitely a positive finding. This result is in accordance to the similar study conducted in Sri Lanka and India.^{6,7} Use of alcohol-based hand rub solutions or gels has been shown to be effective for hand antisepsis.¹⁰ But in our study only 24% of the participants knew that 20 seconds is the minimum time required for effective hand hygiene as recommended by the WHO guidelines.¹¹ This finding is similar to a study conducted in India where majority of the participants didn't know the minimum time required for effective hand hygiene by alcohol

based hand sanitizers.⁷ Our study reveals that most nursing students (90%) have a positive attitude towards hand-hygiene. This finding reveals a better scenario in the context of our country as a similar study conducted in Raichur, India reported that majority of the students had poor attitude towards hand hygiene.¹² In our study 20% of the participants felt that they didn't have sufficient knowledge on hand hygiene. This explains the need to conduct the training sessions to emphasize on the techniques and importance of hand hygiene prior to their hospital postings. The good level of knowledge could not be completely translated into practice as only 56% exhibited good hand hygiene practices thereby showing a wide gap between knowledge and practice of hand hygiene.

In order for the students to develop good practices regarding hand hygiene, it is important to make proper hand hygiene facilities available. When these students are facing situations requiring urgent patient care, they are more likely to omit hand hygiene practices when facilities are not easily accessible to them. Increasing the supplies necessary for hand washing and institutional support is essential in combating substandard practices in hand hygiene.⁶ Thus it is recommended a quantitative measure of hand hygiene facilities be done to better access the available resources and necessary improvements be made accordingly.

CONCLUSION

Our study shows that knowledge regarding hand hygiene is moderate among nursing students of the Western region of Nepal which accounted for their positive attitude and good practice in health care settings. HAIs constitute one of the greatest challenges of modern medicine and most of the participants considered that hand hygiene was an essential part of nurses' role in order to reduce the risk of HAIs. This study also highlights the importance of regular training sessions regarding hand hygiene practices among nurses to provide the current and updated knowledge in the area of nosocomial infections and prevention of infections. Also, there is need for easy accessibility to proper hand hygiene facilities in hospital settings in order to improve the compliance of nursing students to hand hygiene.

Our results can provide important baseline information about infection control practices in a resource limited countries and highlight some of the barriers to implementing effective infection

control policies in Nepal and potentially other similar settings.

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