

A DESCRIPTIVE CROSS-SECTIONAL STUDY ON KNOWLEDGE OF HAND WASHING AMONG HEALTH PROFESSIONALS IN A MEDICAL COLLEGE

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ABSTRACT

Introduction

Nosocomial infection is common due to poor practice of hand hygiene. There is a variation in the level of knowledge of hand washing among different health professionals.

Objectives

The aim of the study was to assess the basic knowledge of hand washing among health professionals.

Methodology

This cross-sectional study was done in 370 healthcare professionals like doctors, nurses, health assistants of a National medical college. The questionnaire used was adapted from the World Health Organization about hand hygiene knowledge for health professionals. There were 18 questions assessing the basic knowledge and practice of hand washing. The level of hand hygiene knowledge was calculated by dividing the responses into four groups based on score more than 90% as excellent, 75-90% considered as good, 50-74% moderate, and less than 50% considered as low. All data was transferred to the excel sheet and transferred to a statistical package for the social sciences-17. The result was presented using frequency tables, graphs, and charts.

Result

Out of 370 participants, 318(85.9%) were females, and 52(14.1%) males. The mean age was 24.59±4.48 years. Of all the respondents, 24% had low, 30% moderate, 26% good, and 21% had excellent knowledge of hand hygiene. In terms of practice, only 34% had a moderate level of practice of hand hygiene.

Conclusion

Regular training and re-training through simulations of hand hygiene will lead to an improvement in the knowledge and practice of hand washing.

KEYWORDS

Hand-hygiene, knowledge, Nepal, practice



INTRODUCTION

Hands are the major source of nosocomial infections due to poor hand hygiene and cause of increased morbidity, mortality, and health care costs among hospitalized patients worldwide.¹ A washing time of 10 to 15 seconds is recommended to remove transient flora from the hands. Hand washing by soap and water or an alcohol-based sanitizer is considered the most important step in hand washing. The use of proper hand washing techniques can reduce the health care-associated infection rates. Every person involved in patient care, healthcare worker or otherwise, should be able to accurately perform hand hygiene and at the appropriate time. Infection

The knowledge of hand washing is low in developing countries among the common people and health professionals due to a lack of formal education training programs.^{2,3} There is a variation in the knowledge among health professionals within the same country or between the countries about hand washing.⁴ Prevention of infection due to improper hand washing techniques is a challenge to the health care providers. Nosocomial infections can be prevented by the formal training and education program on hand washing.

This study was done to assess the basic knowledge of handwashing among health professionals in a tertiary care hospital.

METHODOLOGY

It was a descriptive cross-sectional study conducted in a National Medical College, Birgunj Nepal between September 1 2021 to November 30, 2021. The ethical approval from the Institutional Review Committee was obtained before enrolment of participants in this study. The ethical approval number was F-NMC/543/078-079. Written informed consent was obtained from each participants in the study.

Health professionals like doctors, nurses, health assistants were included in this study. Healthcare professionals who did not give consent and were not interested to participate in the study were excluded from the study.

The questionnaire used was adapted from the World Health Organization (WHO) hand hygiene knowledge questionnaire for health professionals. There were 18 questions assessing the basic knowledge and practice of hand washing. The questionnaires contained closed and open-ended questions about three different parts which included socio-demographic, characteristics, knowledge, and practice of hand washing among health professionals.

The questionnaires were distributed to wards, emergency department, operation rooms, adult and pediatric intensive care unit. Then, they were filled by health professionals at their work place and collected by the data collectors. The questions could be answered as yes, no. For scoring, 1 mark was given for each correct response and 0 marks for each incorrect or not sure response indicating a poor level of knowledge. The level of hand hygiene knowledge was calculated by dividing the responses into four groups based

on score more than 90% as excellent, 75-90% considered as good, 50-74% moderate, and less than 50% considered as low.

The conventional formula for calculation of sample size was not used. The whole sampling method was used in our study. Bias reduction was done by collecting data from all groups of patients, increasing the number of participants by making them understand the importance of this study by proper counseling by the investigators. The collected data were checked for completeness and validity and analyzed by SPSS 17. The result was presented using frequency tables, graphs, and charts.

RESULTS

385 Healthcare professionals were in the hospital

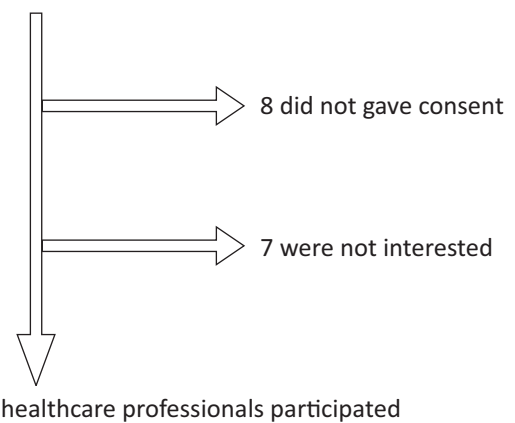


Figure 1: Flow diagram of healthcare professionals that were included in this study

Out of 370 participants, 318 (85.9%) were females and 52 (14.1%) males.

The level of education in study participants was proficiency level certificate nursing (PCL-Nursing) 143 (38.6%), auxiliary nurse midwife (ANM) 92 (24.9%), community medicine assistant (CMA) 46 (12.4%), doctor 46 (12.4%), health assistant 19 (5.1%), bachelor of science (B.Sc- Nursing) 16 (4.3%) and a bachelor of nursing (BN) 8 (2.2%).

The mean age of participants was 24.59±4.48 years.

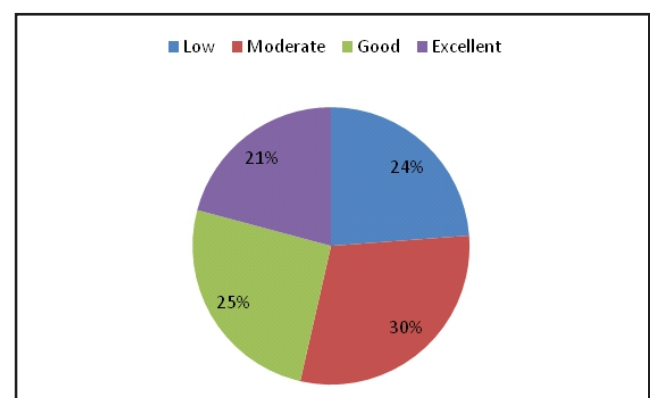


Figure 2: Distribution of the level of knowledge hand washing among study participants

One hundred and ten (30%) participants had a moderate level of knowledge of hand washing.

Table 1: Knowledge of hand washing among study participants

Variable	Response	n(%)
Wash hands before contact with patient	Yes	359(97)
	No	11(3)
Source of infection could be bathroom	Yes	341(92.1)
	No	29(7.9)
Jewellery and accessories could be source of infection	Yes	337(90.9)
	No	33(9.1)
Nail extension or artificial nail could be source of infection	Yes	357(96.4)
	No	13(3.6)
Injuries and scratches are source of infection	Yes	357(96.4)
	No	13(3.6)
Is sterilization of hands with alcohol based hand rub faster than washing with soap and water	Yes	307(83)
	No	63(17)
Sterilization using alcohol based hand rub is more effective in eliminating germs than washing with soap and water	Yes	319(86.1)
	No	52(13.9)
It is preferable to wash hand with soap and water followed by alcohol based hand rub to obtain best result	Yes	267(72.1)
	No	103(27.9)
what is the least time necessary to sterilize your hands with alcohol to eliminate most germs in your hands	Yes	305(82.1)
	No	65(17.6)
what is the least time necessary to sterilize your hands with alcohol to eliminate most germs in your hands	1-5 mint.	36(9.7)
	20 sec.	99(26.7)
	<15 sec.	145(39.4)
	Until it dry	90(24.2)
Have you received any training regarding hand washing/hand hygiene within last 1 year	Yes	193(52.1)
	No	177(47.9)
How many moments of hand washing/hygiene by WHO	4	5(1.2)

WHO: World Health Organization

This study showed that 359(97%) had knowledge that linens and utensils could be a source of infection.

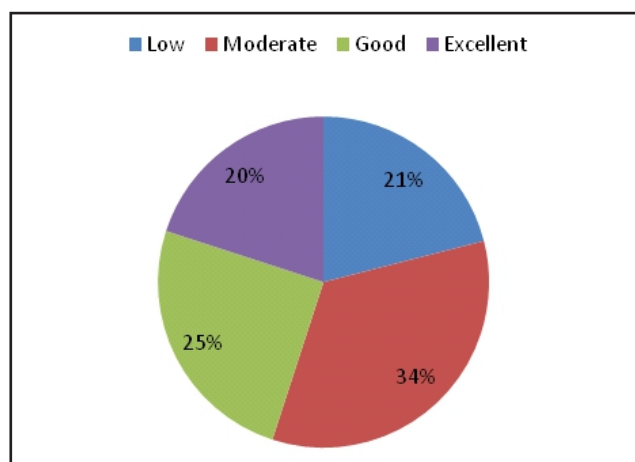


Figure 3: Distribution of the level of practice of hand washing among study participants.

One hundred and twenty six (34%) showed a moderate level of practice among study participants.

Table 2: Practice of hand washing among study participants

Variable	Response	n(%)
Before touching a patient	Yes	359(97)
	No	11(3)
After touching a patient	Yes	361(97.6)
	No	9(2.4)
After touching patient surroundings	Yes	355(95.8)
	No	15(4.2)
After body fluid exposure risk	Yes	368(99.4)
	No	2(0.6)
Before clean/aseptic procedure	Yes	361(97.6)
	No	9(2.4)
Before leaving a ward	Yes	254(68.5)
	No	116(31.5)

This study showed that 368(99.4%) participants wash their hand after exposure to body fluid.

DISCUSSION

Hand washing is a process to remove soil and transient microorganisms from the hands using soap and water. Hand antisepsis is a process of removing or destroying the resident and transient microorganisms on the hands using an antiseptic agent, either by rubbing hands with an alcohol-based hand rub or hand washing with an antiseptic soap. Hand antisepsis is also known as antiseptic hand wash, antiseptic hand-rubbing, hand decontamination, and hand disinfection.

The poor accessibility of hand washing facilities, high workload, lack of adequate knowledge, and failure of administrative leaders to make hand-hygiene an institutional priority are the factors that contribute to poor adherence to hand-hygiene.⁵ Hand washing techniques should be a part of patient care in each institution.

This study showed that females 318(85.9%) were common health professionals in our study which is similar to the other studies.²⁻⁵ Study by Jemel¹ has shown that male was common health professional in their study. Females are common than males because most of the studies on hand washing include nurses and most of the nurses in the developing countries are female. Nursing education is gained mostly by females in developing countries because people believe that females can provide good nursing care, sympathy to the patient and their family members than male.

Nurses were common in our study which is similar to the other studies.¹⁻⁵ All health care professionals play a very important role in the prevention of health-care-associated infections but nurses play a very significant role because they are health workers who spend more of their time with patients than doctors.

In this study 111(30%) had a moderate knowledge of handwashing which is similar to other studies,^{1-3,5-14} while

other studies have shown a low level of knowledge for handwashing.^{4,15-18} Study by Chakraborty et al¹⁹ has shown that healthcare professionals had an excellent level of knowledge. This difference may be because the level of knowledge depends upon the type of training, practices in different health institutions, level of health care facilities, awareness programs among the common people, healthcare professionals, type of hospitals, and study population. A moderate level of knowledge among healthcare professionals signifies the pathetic situation among healthcare providers. There should be a good level of knowledge among health care providers as handwashing is directly related to patient outcome.

This study has shown that out of 370 respondents, 319(86.1%) responded that sterilization using alcohol-based hand rub is more effective than washing with soap and water. While the study by Ra'awji BAA et al⁹ and Chakraborty¹⁹ has shown that soap and water was the most common method for disinfection. This might be due to differences in the availability of antiseptic agents. The use of alcohol-based hand rub has increased the last few years due to easy availability, easy to avoid water during handwashing, can be done in every situation and less cumbersome to use alcohol based than soap and water.

This study has shown that 193(52.1%) has received training in handwashing in the last one year which is similar to the study by Kudavidnange et al¹² while in a study by Ekwere et al¹³ it was 68.1%. This difference might be a failure to understand the importance of hand hygiene among health professionals. This also shows that lack of training programmes in institutions, failure of health professionals to understand that one-time knowledge is not sufficient for patient care but up-gradation of skills and knowledge is required for effective patient care.

In this study, 126(34%) had a moderate practice of handwashing which is similar to the other studies.^{5,6,9,10} While other studies^{1,3,8,12} have shown that the practice of handwashing was poor. This difference may be because the practical application of theoretical knowledge is not always possible, lack of an infection control committee in most of the hospitals in the developing countries, and a lack of political commitment. This may be because it is human nature that what we learn we do not implement and we always choose the easy options that require less time and money. A moderate practice of handwashing signifies that health professionals are poor in patient care that requires a strictly vigilance policy for aseptic handwashing techniques. This study showed that there was a similar level of knowledge and the practice of handwashing which is similar

to the other studies.^{5,6,9-11,13,14,19} While other studies^{1,3,8,12} have shown that there is a moderate level of knowledge but practice of handwashing was poor. This difference might be due to a lack of commitment and negligence of health care professionals. It also shows that practice cannot be improved unless we start upgrading the knowledge by regular training and re-training.

In this study 368(99.4%) participants wash their hand after exposure to body fluid. This shows that health professionals do not have knowledge that handwashing is important in each step of patient care.

Nurses should be part of training, involved in training committee of handwashing. This is because implementation of handwashing can become easier when a nurse can give message about handwashing than doctor himself.

CONCLUSION

There was a moderate level of knowledge and practice of hand washing among health professionals. Strict protocol for handwashing, regular training, and re-training through simulations of hand hygiene will lead to an improvement in the knowledge and practice of handwashing.

RECOMMENDATIONS

Regular institution based training programme should be done to increase the level of hand washing. Adherence to hand hygiene recommendations is the only single most important practice for preventing the transmission of infection in health care. An infection control committee that includes doctors, nurses, and other professionals from all specialty and sub-specialty should be established in all institutions to regularly check the progress and implementation of handwashing programmes.

LIMITATIONS OF STUDY

It was a single-center, non-randomized study. The intervention was not done to assess the change in the knowledge and practice of handwashing.

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CONFLICT OF INTEREST

None

FINANCIAL DISCLOSURE

None

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