

**A SURVEY OF HAND HYGIENE KNOWLEDGE, ATTITUDE AND PRACTICES  
AMONG HEALTH CARE WORKERS IN A SECONDARY CARE CENTRE: A CROSS  
SECTIONAL STUDY**\*<sup>1</sup>Dr. Twinkle Sood and <sup>2</sup>Dr. Divya Dhiman<sup>1</sup>M.S. Obstetrics and Gynaecology, Indira Gandhi Medical College Shimla, Himachal Pradesh.<sup>2</sup>M.D. Paediatrics, Dr. Rajendra Prasad Government Medical College Tanda, Himachal Pradesh.

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**ABSTRACT**

**Background:** Maintenance of proper hand hygiene among health care professionals is important to prevent transmission of most of the infections. It been described as the single most important, simplest and least expensive means of preventing nosocomial infections. The present study was conducted to determine the knowledge, attitude and practices of hand hygiene in a secondary care centre. **Methods:** A self-administered questionnaire based cross sectional study was conducted among 150 doctors, nurses and ward attendants at civil hospital, Palampur, Himachal Pradesh. Data was collected and analysed using SPSS version 20.0. **Results:** Majority of the respondents were in the age group of 31-40 years. Most of the respondents were nurses (46.7%) and 72% of the respondents had a good knowledge of hand hygiene. Washing of hands before and after contact with patients was 32% and 55% respectively. Most of them (55.3%) had received training on hand washing in the last three years and 60% respondents routinely used alcohol based hand rub. **Conclusions:** Although knowledge, attitude and practice of hand hygiene were good among respondents in this study there is still need for conducting regular training. Lack of hospital resources is one of the major constraints preventing adequate implementation of knowledge of hand hygiene practices among healthcare professionals.

**KEYWORDS:** Hand hygiene, knowledge, attitude, practice, healthcare workers and secondary care.

**INTRODUCTION**

Hand hygiene is recognized as the leading measure to prevent cross-transmission of microorganisms and to reduce the incidence of hospital acquired infections (HAI).<sup>[1]</sup> Although hand hygiene can be described as an effective, simple, cheap and not time consuming HAI control strategy most studies show low compliance rate of between 40% and 70%.<sup>[2,3]</sup> WHO introduced the "My five moments with hand hygiene" approach for health-care workers and these are before and after touching a patient, before performing aseptic procedures, after exposure to body fluids and after touching patient surroundings.<sup>[4]</sup> According to WHO an estimate 1.4 million patients acquire HAI at any time and improper hand hygiene accounts for about 40 % of this incidence<sup>[5]</sup>. Health care workers (HCW) have reported several factors that negatively impact their adherence with recommended practices including inadequate knowledge and lack of awareness, hand washing agents cause irritation and dryness, sinks are inconveniently located, lack of soap and paper towels, not enough time, over workload with understaffing, lack of knowledge of guidelines/protocols and forgetfulness.<sup>[6,7]</sup> HCW spend more time with patients hence their compliance with

hand washing guidelines seems to be more vital in preventing the disease transmission among patients.

**Aims and objectives**

The study was conducted to assess the knowledge, attitude and practice of hand washing among HCW at a secondary care centre. The finding of this study would help the management to bridge the gaps and implement appropriate measures to increase the compliance rate of hand hygiene subsequently reducing the prevalence of HAI.

**MATERIAL AND METHODS**

A cross sectional descriptive study was conducted on 150 healthcare workers which included 35 doctors, 70 nursing staff and 45 ward attendants working at civil hospital, Palampur, Himachal Pradesh. Sample size was determined using the Fishers formula to obtain a total of 150 based on 95% confidence interval and 5% margin of error. Data collection was done using a pretested, structured and self-administered questionnaire. The questionnaire consisted of 3 sections: with section A) exploring the socio-demographic characteristics, B) consisting of questions on the level knowledge and

attitude of hand washing and C) consists of the prevalence and practice of hand washing. Data was analysed using SPSS version 20.0.

## RESULTS

A total of 150 participants were included in the study out of which 35 (23.3%) were doctors, 70 (46.7%) nursing staff and 45 (30%) ward attendants. Majority of the respondents were nurses. There were 62 (41.3%) males and 88 (58.7%) females respectively. Their ages ranged from 20-60 years with maximum participants in the age group of 31-40 years (47.3%). 70% of the participants were educated up to graduate level and above (Table 1). All the respondents were aware of hand hygiene practices and a large proportion (70%) was informed by HCW while in training. Only 55.3% of the participants had ever received any form training on hand washing in preceding 3 years and 60% routinely used alcohol-based

hand rub for hand hygiene. Less than half (48%) of the HCW under study knew the estimates of hospitalized patients who may develop HAI and only 42.7% of them knew that hand hygiene was very highly effective in preventing HAI. 76.7% knew that hand washing could prevent respiratory tract infections 90% diarrhoeal diseases. Only about 30 % of them responded in the affirmative that hand washing was given a very high priority in our institution (Table 2).

When asked about the average percentage of situations that they actually performed hand rubbing 40% said they did not know. About 55.3% washed their hands over 5 times during their shift and 49.3% practiced hand-washing occasionally before interacting with patients while 55% said they practiced it always after patient interaction (Table 3).

**Table 1: sociodemographic characters.**

Variable	Frequency	Percentage (%)
<b>Age (years)</b>		
20-30	42	28%
31-40	71	47.3%
41-50	25	16.7%
51-60	12	8%
<b>Gender</b>		
Male	62	41.3%
Female	88	58.7%
<b>Education</b>		
Primary	5	3.3%
Secondary	40	26.7%
Graduation and above	105	70%
<b>Profession</b>		
Doctors	35	23.3%
Nurse	70	46.7%
Ward attendant	45	30%

**Table 2: Knowledge and attitude of hand washing.**

Variable	Response	Number (%)
Ever heard about hand washing practices	yes	150 (100%)
	no	0(0%)
Sources of information*	Media	51(34%)
	Health workers	105(70%)
	Lectures	66(55%)
	Friends/ Relatives	30(20%)
Ever received training in hand hygiene in the last 3 years	yes	83(55.3%)
	no	67(44.7%)
Routinely use alcohol- based hand –rub	yes	90(60%)
	no	60(40%)
Percentage of patients who develop a HAI	≤ 10%	22(14.7%)
	11-30	34(22.7%)
	31-50	10(6.6%)
	>51	6(4%)
	Don't know	78(52%)
Effectiveness of hand hygiene in preventing HAI	Very low	5(3.3%)
	Low	13(8.7%)
	High	68(45.3%)

	Very high	64(42.7%)
<b>What hand hygiene can prevent *</b>	Malaria	35(23.3%)
	Diarrhea	135(90%)
	Pneumonia	98(65.3%)
	Respiratory tract infection	115(76.7%)
<b>How important is hand washing to your institution</b>	Low priority	8(5.3%)
	Moderate priority	25(16.7)
	High priority	72(48%)
	Very high priority	45(30%)
*multiple responses		

Table 2: Practices of hand washing.

Variable	Response	Number (%)
<b>Average percentage of situations you actually perform hand washing</b>	≤20%	4(2.7%)
	21-40%	8(5.3%)
	41-60%	12(8%)
	61-80%	27(18%)
	81-100%	39(26%)
	Don't know	60(40%)
<b>Number of times you wash hands</b>	1-2 times	22(14.7%)
	3-5 times	45(30%)
	Over 5 times	83(55.3%)
<b>How often do you practice hand-washing before interacting with patients</b>	Never	22(14.7)
	Always	48(32%)
	Occasionally	74(49.3%)
	No response	6(4%)
<b>How often do you practice hand-washing after interacting with patients</b>	Never	11(7.3%)
	Always	84(55%)
	Occasionally	51(34%)
	No response	4(2.7%)

## DISCUSSION

Hand hygiene is the most important tool in preventing the transmission of nosocomial infections as the hands of HCWs are the most common mode of transmission of pathogens to patients. Factors that contribute to poor adherence to hand hygiene include poor access to hand-washing facilities (sinks), the time required to perform standard hand washing, irritant contact dermatitis associated with frequent exposure to soap and water, high workloads, knowledge deficits among HCWs, and the failure of administrative leaders to make hand hygiene an institutional priority.<sup>[8]</sup> The findings from this study show that the rates of compliance in our hospital are still very low as only 26% of the HCW could claim to have actually performed handwashing on an average of 81 to 100% of situations and an alarming 40% of them could not even remember. In a systematic review by Erasmus *et al.*<sup>[9]</sup> on hand hygiene practices, it was discovered that in ICUs and general wards, the compliance rate was 40% among physicians. 44.7% of the respondents did not receive any training on hand hygiene practices in the last 3 years which was comparable to the study conducted by Dutta *et al.*<sup>[10]</sup> (54.9%). In our study 32% and 55% of participants always performed hand washing before and after interacting with the patient respectively. The results were similar to the study conducted by Agbana *et al.*<sup>[11]</sup>

wherein 37.6% and 56.2% performed hand washing before and after interacting with the patient respectively.

High noncompliance rates of hand hygiene after touching patients at hands of HCW could then become reservoir for the transmission of pathogens among patients. The several infection causing microorganisms are regularly mutating and as such antimicrobial resistance rates are higher in HAI compared to the community.<sup>[12,13]</sup> The WHO has recommended guidelines.<sup>[4]</sup> for hand hygiene and its central theme is to wash hands with soap and water or an alcohol-based hand rub. Studies on efficacy of alcohol-based hand rub show that they have good efficacy when the concentration of alcohol ranges from 62% to 95% thus ensuring that they are rapidly bactericidal.<sup>[14]</sup>

## CONCLUSION

This study established that the participants have good knowledge of hand hygiene but compliance rate needs to be improved upon. It is important to conduct regular training programs on hand hygiene for HCW with continuous monitoring and performance feedback to encourage them to follow correct hand hygiene practice.

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