

Knowledge, attitude and perceived barriers of doctors towards hand hygiene in a govt. tertiary care hospital

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Abstract

Introduction: Health-care Providers hands become progressively colonized by germs and potential pathogen during patient care. Absence of hand hygiene practices by health care providers possesses high risk to patient's safety. Hand hygiene practices either by Hand rub by disinfectant or hand washing by Soap & Water is very important for preventing Health Care Associated Infections (HCAIs).

Objective: Assessment of Knowledge, Attitude & Perceived Barriers among doctors towards practice of Hand Hygiene during patient care.

Materials and Methods: Cross sectional observation study carried among 36 doctors working in 8 indoor departments of a Govt. Tertiary care Hospital. Semi Structured Questionnaires was used for data collection. Data Entry was done in MS excel and was analysed in SPSS software. Categorical Variables was expressed in frequency and Percentage. Result was extrapolated on Graph and Table.

Result: 53% Doctors do not have knowledge about "5 moments of hand hygiene". 92% Doctors realised the importance of practice of Hand hygiene as in prevention of transmission of infection. 61% Doctors realised that forgetfulness' leads to omission of practice of hand hygiene. Perceived Barriers to practice Hand Hygiene identified were increased workload, lack of water, sinks, hand rubs and antiseptic solutions in the practice area.

Conclusion: The study identifies the knowledge gap still exist among Doctors regarding Hand hygiene and although Doctors have good attitude towards hand hygiene, Perceived barriers which are rectifiable prevents them from practicing hand hygiene everywhere and all the time.

Keywords: Hand hygiene, Doctors, Knowledge, Attitude, Perceived barriers, Health Care Associated Infections.

Introduction

Hand hygiene Practices prevents transmission of Health Care Associated Infections (HCAIs) among patients as well as health care providers at health care delivery points. Various factors have been identified for noncompliance to hand hygiene practices and Lack of knowledge among health care providers was found to be most important factor responsible for poor compliance towards hand hygiene practices.¹

Most shocking finding identified is that compliance towards hand hygiene practices was found to be worst before conducting high risk procedure.^{2,3} Comparing various Professional cadre of health care provider, compliance for hand washing was found to be maximum among nurses, least among doctors.⁴ Although numerous studies have shown that hand hygiene decreases the transmission of potential pathogens or antimicrobial-resistant organisms, there is no sustained improvements towards practice of hand hygiene recommendations and adherence to proper hand washing technique among health care providers.⁵ Perceived Barriers towards hand hygiene practices were found to be low education, high work load, lack of human resource, lack of facilities, working in critical care units, lack of encouragement and role model among senior staff along with absence of any guidelines of practice of hand hygiene as set by the institution.⁶

Various studies have showed that health care facilities where training sessions were held to improve hand hygiene practices has resulted in sustained improvement in compliance.⁷⁻⁹ Performance Indicator of health care staff by

direct observation is also found to be additional factor contributing to hand hygiene practice.¹⁰ Direct observation of hand hygiene practice is still considered superior as it shows compliance with all 5 moments of Hand Hygiene.^{11,12}

This study assess the Knowledge, Attitude and Perceived barrier towards practicing hand hygiene among Doctors and provide the information for intervention needed to improve compliance and adherence to hand hygiene practice among health care providers and further reduction in Health Care Associated Infections.

Objectives

1. To assess the Knowledge and Attitude of Doctors towards Hand Hygiene Practices in a Govt. Tertiary Care Hospital.
2. To explore the Perceived Barrier for practice of Hand Hygiene among Doctors.

Materials and Methods

Cross sectional observation Study was conducted to assess their Knowledge, Attitude & Perceived Barriers to practice Hand Hygiene among 36 Doctors working in 8 departments in a Govt. Tertiary care Hospital. 8 Department (Medicine, Surgery, Obstetrics & gynaecology, Orthopaedics, Paediatrics, TB & chest, Dermatology & ENT) were chosen as they have indoor patient care facility. Study Participants were enrolled by Convenient Sampling. Study was carried for a period of Two Months (Mid Aug-Mid October 2018). Data was collected on Semi Structured Questionnaires after taking informed consent from participants. Data regarding

Knowledge, Attitude and Perceived barriers towards hand hygiene Practices was quantified to assess the Gap as compared to WHO standard protocol. Data Entry was done in MS excel and was analysed in SPSS software. Categorical Variables was expressed in frequency and Percentage. Result was extrapolated on Graph and Table. Approval from Institutional Ethics Committee was taken prior to the initiation of the study.

Result

During this study 36 Doctors working in 8 Departments having indoor patient care facility were contacted to explore their knowledge, attitude & Perceived Barriers to practice Hand Hygiene. It was found that 44% Doctors have not received any training regarding hand hygiene practices, 53% Doctors do not have knowledge about “5 moments of hand hygiene” and 19% doctors do not indulge in practice of usage of alcohol based Hand Rub as shown in Table 1.

Table 1: Profile of Doctors Participated in Study (n=36)

Variables		Result				
Gender	Male	19				
	Female	17				
Age	21-30 years	19				
	31-40 years	12				
	>41 years	05				
Department	Designation					
	General medicine	JR	SR	Assistant Professor	Associate Professor	Professor
		2	1	1	-	-
	General surgery	3	1	-	1	-
	Obst & gynae	1	-	2	-	1
	Pediatrics	4	1	1	1	-
	Orthopaedics	3	2	1	1	-
	Ent	1	1	1	-	-
	Dermatology	2	1	1	-	-
Tb & chest	2	-	-	-	-	
Experience of work in hospital after graduation	<5 years	15				
	>5 years	21				
Training received in hand hygiene	Yes	20				
	No	16				
Usage of alcohol based hand rub	Yes	29				
	No	07				
Knowledge about 5 moments of hand hygiene	Yes	17				
	No	19				

Knowledge of doctors about transmission of infection was analysed and it was found that 33% doctors believe that after exposure to the immediate surroundings of a patient there is no role of hand hygiene in prevention of transmission of infection to patients. Knowledge about Increased likelihood of colonisation of hands with harmful germs was assessed and it was shocking to find that that 31% doctors believes that wearing jewellery, 25% doctors believes that damaged skin, 22% doctors believes that artificial fingernail and 67% believed that Regular Use of hand cream do not increase likelihood of colonisation of hand with harmful germs as shown in Table 2.

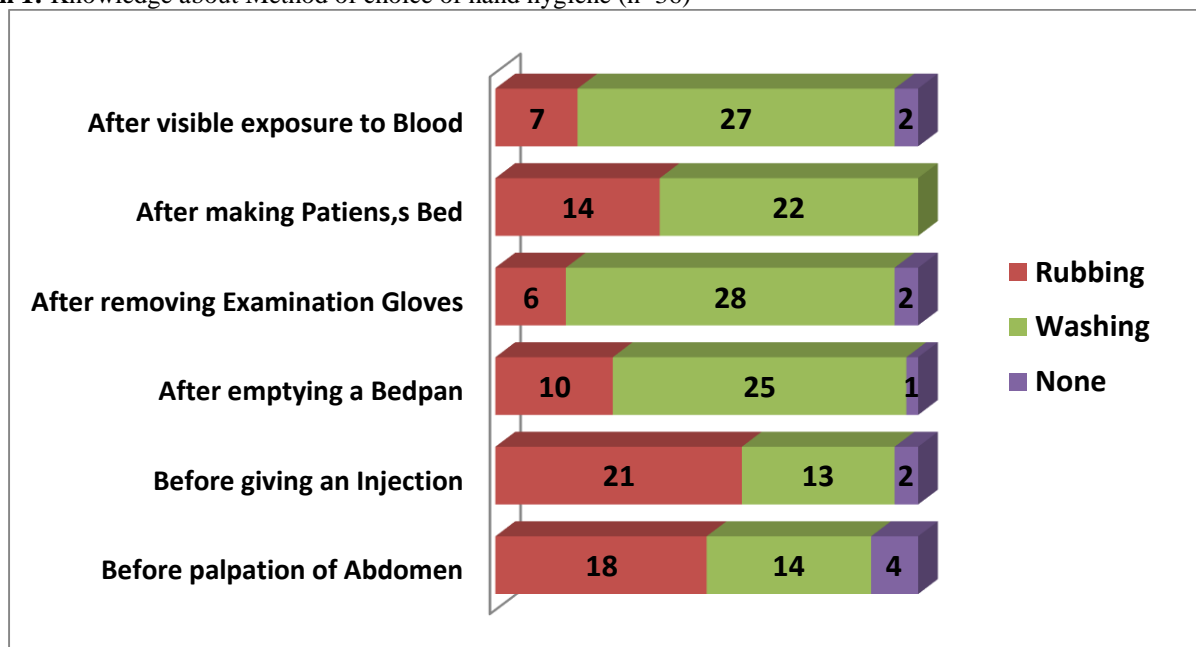
Table 2: Knowledge about Practice of hand hygiene among Doctors (N=36)

S.no	Variables	Response	
1	Main route of cross-transmission of potentially harmful germs between patients in a health-care facility	Health-care workers' hands when not clean	21
		Air circulating in the hospital	2
		Patients' exposure to colonised surfaces (i.e., beds, chairs, tables, floors)	12
		Sharing non-invasive objects (i.e., stethoscopes, pressure cuffs, etc.) between patients	1
2	Most frequent source of germs responsible for health care-associated infections	The hospital's water system	2
		The hospital air	0
		Germs already present on or within the patient	5

		The hospital environment and surfaces	29
3	Hand hygiene actions prevent transmission of germs to the patient?	Indications (Multiple Responses)	Yes
		Before touching a patient	31
		Immediately after a risk of body fluid exposure	32
		After exposure to the immediate surroundings of a patient	24
		Immediately before a clean/aseptic procedure	34
4	Hand hygiene actions prevents transmission of germs to the health-care worker	Indications (Multiple Responses)	Yes
		After touching a patient	33
		Immediately after a risk of body fluid exposure	30
		Immediately before a clean/aseptic procedure	26
		After exposure to the immediate surroundings of a patient	29
5	Increased likelihood of colonisation of hands with harmful germs is associated with:-	Indications (Multiple Responses)	Yes
		Wearing jewellery	25
		Damaged skin	27
		Artificial fingernails	28
		Regular use of a Hand cream	12

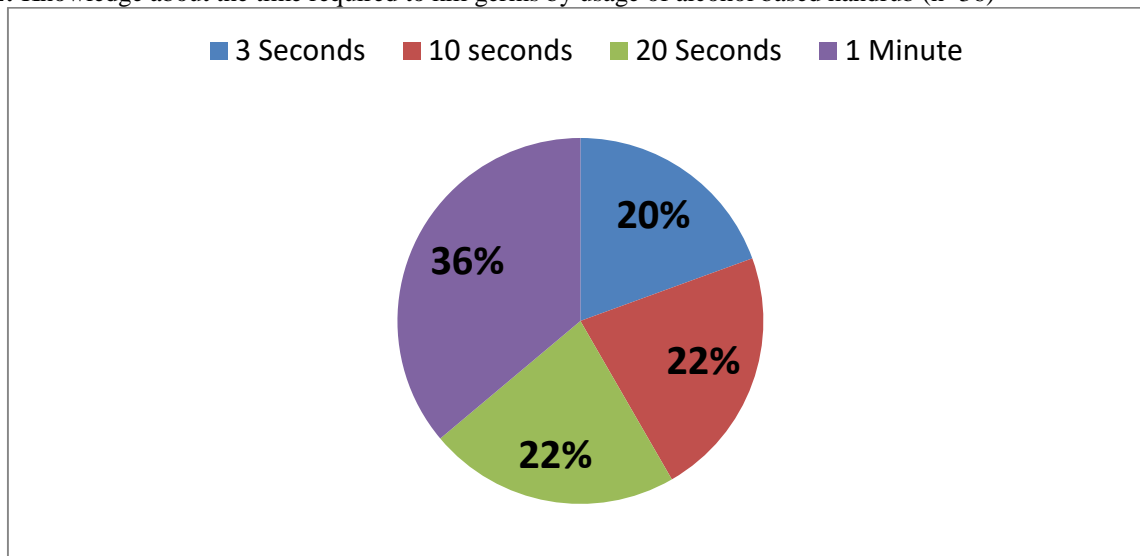
Assessment of the knowledge about the method of choice of hand hygiene was done and it was found that majority of doctors have knowledge about hand rub and hand washing but there were very few doctors who still have misconception, that situations like after visible exposure to blood (2), after removal of examination gloves (2), after emptying bed pan (1), before giving an injection (2) and before palpation of abdomen (4) do not require hand hygiene practices as shown in Graph 1.

Graph 1: Knowledge about Method of choice of hand hygiene (n=36)



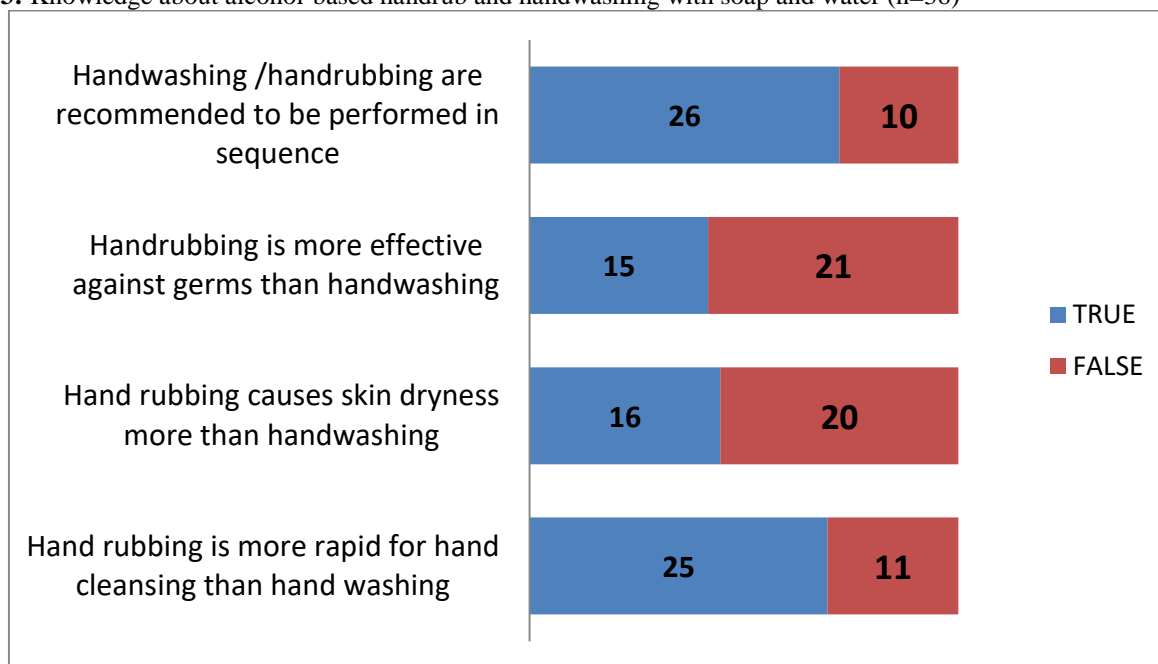
36% Doctors believes that 1 minute is required to kill germs by usage of alcohol based hand rub as shown in graph 2 and only 22% were able to answer it correctly (20 Seconds).

Graph 2: Knowledge about the time required to kill germs by usage of alcohol based handrub (n=36)



69% Doctors believes that although hand rub is more rapid method for hand hygiene practice, it is the hand washing(58%) which is more superior to hand hygiene and majority(72%) also believed that they should be performed in sequence(as shown in graph 3).

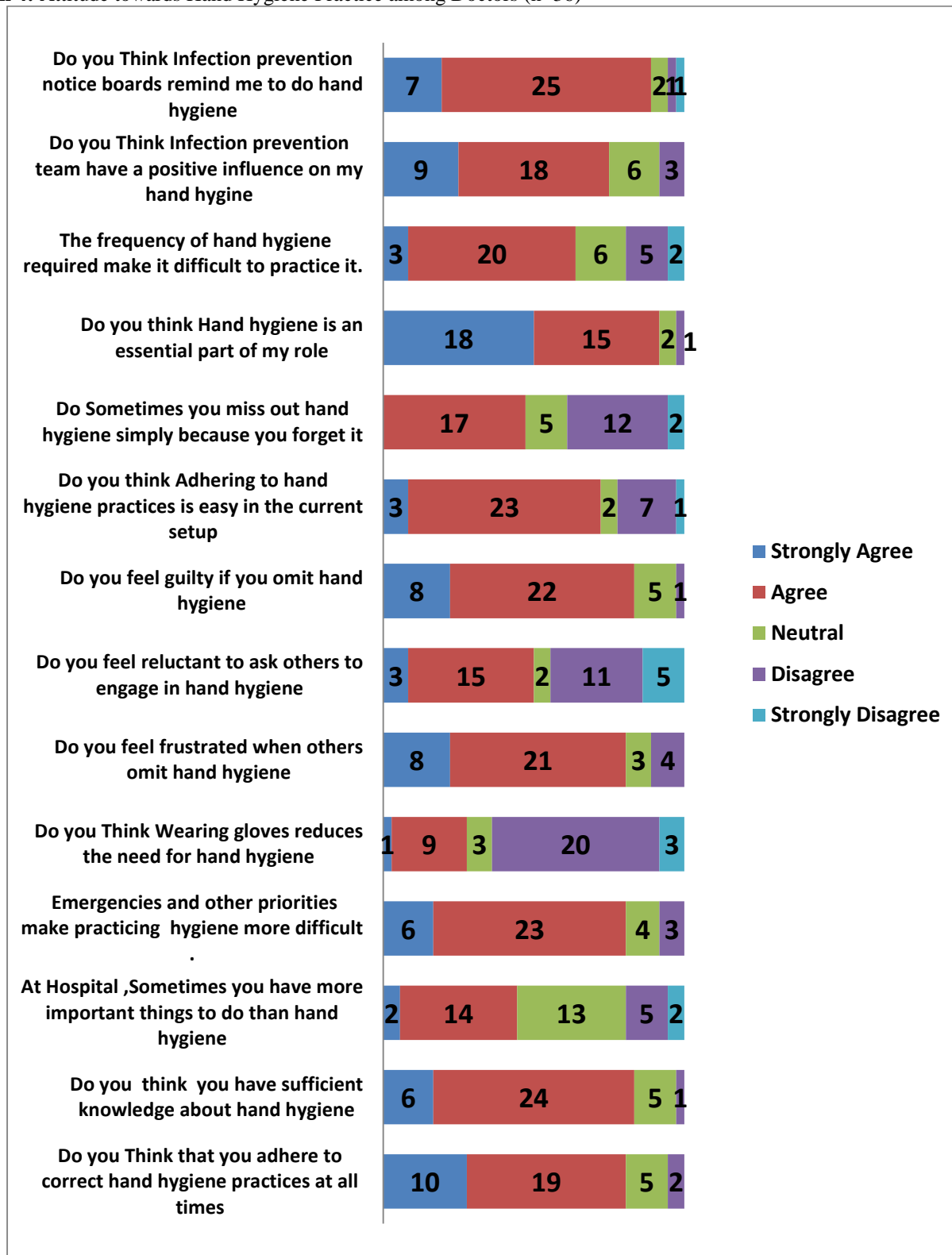
Graph 3: Knowledge about alcohol-based handrub and handwashing with soap and water (n=36)



Attitude of Doctors was assessed towards practice of hand hygiene(as shown in graph 4) and it was found that 69% Doctors believed that Infection Prevention Notice Board plays a vital role in reminding about hand hygiene practices and 50% of Doctors also believed that infection prevention team also promotes practice of hand hygiene. 55% Doctors believed that frequency that is required for hand hygiene makes it difficult to practice it. 92% Doctors realises the importance of practice of Hand hygiene in prevention of transmission of infection. 61% Doctors realised that

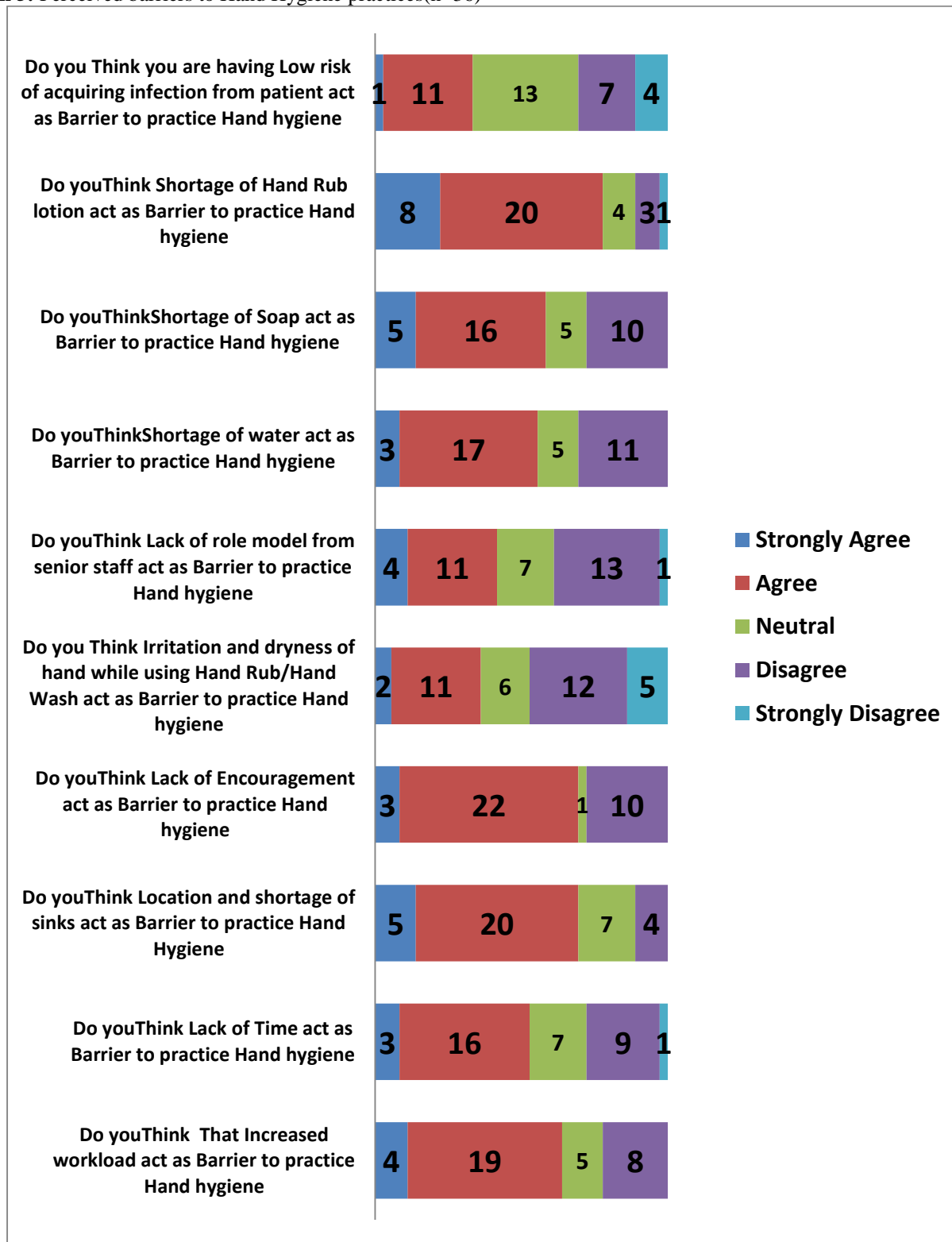
forgetfulness leads to omission of practice of hand hygiene, 83% Doctors felt guilty of not practices hand hygiene when they remember it and which leads to frustration.81% Doctors believed that it is difficult to practice hand hygiene during emergencies.83% Doctors believed to have sufficient knowledge about hand hygiene. 81% Doctors believes that they strongly adheres to correct hand hygiene practices at all times.

Graph 4: Attitude towards Hand Hygiene Practice among Doctors (n=36)



Perceived barriers about practice of Hand Hygiene was assessed (as shown in graph 5) among and 64% Doctors expressed that workload acts as barrier to practice Hand Hygiene. 53% Doctors mentioned that Lack of time at the workplace acts as barrier to practice correct hand hygiene methods.

Graph 5: Perceived barriers to Hand Hygiene practices(n=36)



69% Doctors elicited that Location of sinks and Shortage of Sinks acts as barrier for them to practice hand hygiene.69% Doctors expressed that there is no constant encouragement about it and Lack of Encouragement makes them not serious about hand hygiene. 56% Doctors mentioned that lack of

water at the wards at the point of patient care acts as barrier to practice Hand hygiene.78% Doctors mentioned that Lack of Hand Rub and 58% Doctors expressed lack of soap at the ward acts as barrier to practice hand Hygiene.

Discussion

This study explores the knowledge and attitude of doctors towards hand hygiene practices, 36 doctors participated in the study and it was found that 44% have not received any training regarding hand hygiene, 53% doctors do not have knowledge about “5 moments of hand hygiene” and 19% doctors do not indulge in practice of usage of alcohol based Hand Rub. The antimicrobial activity of alcohols based rub results from their ability to denature proteins.¹³ Alcohol solutions containing 60–80% alcohol are most effective, with higher concentrations being less potent.^{14,15} This paradox results from the fact that proteins are not denatured easily in the absence of water. A similar study conducted by Ariyaratne MHJD et al reported that 72% of participants knew that unhygienic hands of health care workers were the main route of transmission.¹⁶

Knowledge of doctors about transmission of infection was analysed and it was found that 33% doctors believes that after exposure to the immediate surroundings of a patient there is no role of hand hygiene in prevention of transmission of infection to patients. 28% believes that immediately before a clean/aseptic procedure there is no role of hand hygiene in prevention of transmission of germs to the health care worker 31% believed wearing jewelry, 25% believes that damaged skin, 22% believes artificial fingernail and 67% believes that Regular Use of hand cream do not increase likelihood of colonisation of hand. Contrast to this a study done by W.E Trick⁵ have shown that 40% of the nurses harboured the gram negative bacilli, *Acinetobacter* spp. on the skin under the rings and some of them carried the same organism under their rings for months.

In the present study, 36% of Doctors believed that 1 minute of time is required to kill germs by usage of alcohol based hand rub and only 22% were able to mention it correctly (20 seconds). 69% Doctors believes that although hand rub is more rapid method for hand hygiene practice, it is the hand washing (58%) which is more superior to hand hygiene and majority (72%) also believed that they should be performed in sequence. 69% of Doctors believed that Infection prevention notice board plays a vital role in reminding about hand hygiene practices, 50% of Doctors also believed that infection prevention team also promotes practice of hand hygiene. Among participants 55% doctors believed that frequency that is required for hand hygiene makes it difficult to practice it. 81% Doctors also admitted that it is difficult to practice hand hygiene during emergency.

Perceived barriers about practice of hand hygiene was assessed among 36 Doctors who participated in the study and findings indicated that Workload (64%), Lack of time (53%), Location and Shortage of Sinks (69%) Lack of Encouragement (69%), Lack of water (56%), Lack of Hand Rub (78%) Lack of soap (58%) are major barrier to practice of hand hygiene in health care setting. Previous studies showed increase in compliance with the availability of hand rub solutions at the bedside of the patient.¹⁶

These barriers can be corrected with extra efforts and will definitely lead to decline in HCAI in the country. The best way to improve hand washing compliance based on the finding of this study was motivation, training and education of health care workers followed by availability of alcohol based hand rubs which is similar to a study by JB Suchitra⁴ which listed that Barriers to practice hand hygiene were lack of education, high work load, understaffing, working in critical care units, lack of encouragement, lack of role model among senior staff & lack of knowledge of guidelines set by the institution.

Conclusion

The study identifies the knowledge gap still exist among Doctors regarding Hand hygiene and although Doctors have good attitude towards hand hygiene, perceived barriers which are rectifiable prevents them from practicing hand hygiene everywhere and all the time. The best way to improve hand washing compliance based on the finding of this study was motivation, training and education of health care workers followed by availability of alcohol based hand rubs. These barriers are rectifiable at the level of the hospital and there can be huge increment in hand hygiene practice in the hospital among health care providers.

Source of funding

None.

Conflict of interest

None.

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