

Research Article

Survey of Hand Washing Facilities in the Out Patient department (OPD) of a Tertiary Care Teaching Institute of Northern India

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Abstract: The first global patient safety challenge is “Clean care is safe care” and is aimed at reducing health care-associated infection (HCAI) worldwide. A key action within “Clean Care is Safer Care” is to promote hand hygiene globally and at all levels of health care. Hand hygiene, is well accepted to be one of the primary modes of reducing HCAI and of enhancing patient safety. The aim and objective of the study was to survey the hand washing facilities in OPD. A check list was adopted from another study for assessing the condition of each sink in different rooms of OPD complex. All the available rooms were assessed on a single occasion and the descriptive analysis was done. The hand washing facility was available in 80 (99%) rooms. At all places sinks were easily accessible to the users. The taps were in the working conditions at all the sinks, out which 71(89%) were hand operated and rests were elbow operated. Soap stand was available at the majority of the places (90%). The cleansing agent was available at most of the places (i.e. 96%) and at most of the places it was soap bar (96%). No sink had hand washing instructions displayed demonstrating the correct technique of hand washing. The physical facilities required for hand washing were adequate though there is a scope of improvement. The Hospital Administrators should work in the direction of providing best possible hand washing facilities keeping in view their budgetary estimates.

Keywords: Hospital acquired infection (HAI), Hand hygiene, HCW (Health care worker).

INTRODUCTION

WHO Patient Safety has developed multiple streams of work and focused actions on the various problem areas [1]. Hospital acquired infection is a major concern of patient safety all over the world [2]. The WHO has laid special emphasis on reducing the hospital acquired infection by launching “Clean Care is Safer Care” in October 2005 as the first Global Patient Safety Challenge [3]. These hospital acquired infections occur all over the world and are one of the major causes of death and increased morbidity for hospitalized patients [4]. A main action within “Clean Care is Safer Care” is to promote hand hygiene globally and at all levels of health care [1].

Hand hygiene is a very simple action that is well accepted to be one of the primary modes of reducing HCAI and enhancing patient safety. It is the primary measure that has been proven to be effective for the prevention of HCAI and spreading of antimicrobial resistance. Transmission through contaminated Health care worker’s hands is the most common mode in most settings and includes the steps:

Hand washing or hand antisepsis by the Health care worker must be inadequate or omitted entirely, or the cleaning agent used for hand hygiene is inappropriate; and the contaminated hand or hands of the health care worker must come into direct contact with another patient or with an inanimate object that will come into direct contact with the patient [1, 5]. Health care-associated pathogens can be recovered not only from infected or draining wounds but also from frequently colonized areas of normal, intact patient skin [6-20]. Nearly 10⁶ skin squames that contain viable microorganisms are shed daily from normal skin. Patient gowns, bed linen, bedside furniture and other objects in the patient’s immediate environment become contaminated with patient flora [17-20, 21-27]. Hospital acquired infection is a major problem for safety of the patient and its prevention must be a first priority for settings and institutions that are committed to make a safer health care. In developed countries, HCAI concerns 5–15% of hospitalized patients and can affect 9–37% of those admitted to intensive care units (ICUs) [28, 29]. In spite of advances in the health care system, patients are harmed every day all over the world in the

course of receiving health care, and patient safety in hospitals remains at risk from Hospital acquired infection [30]. At any given time more than 1.4 million people in the world become seriously ill from Hospital acquired infections (HAI) [31]. HAI rate has been reported from 6-27% in various studies conducted in developing countries [32-34]. According to the estimates of Hospital Infection Society of India the incidence of HAI in India is between 5-30% [35]. In a study [36] it is reported that most of the infections are transmitted by the hands of Health Care Workers and in other study [37] it was reported that hand washing reduces the carriage of potential pathogens on the hands of Health care workers. Hand washing with soap and water is a simple and cheap method and can be practices to reduce Hospital Acquired Infections and save many lives, but the compliance with hand hygiene is low in developing countries [38-39]. The proportion of medical treatment given in outpatient departments is increasing rapidly [40]. Goodman and Solomon [41] concluded that in most of the cases the outbreak of disease in OPD settings were associated with lack of adherence to established infection control practices and inadequate hand washing practice was one of the factors identified for most of the outbreaks. In different studies [42-47] it was found that the role of availability and accessibility of hand washing facilities in enhancing the compliance of hand washing is conflicting. In few studies [48, 49] it was concluded that the health care workers has reported inadequate number or inconvenient placement of sinks as one of the barrier to hand washing practices. It is reported [50] that limited infrastructure regarding the provision of sinks and inadequate access to soap and water are hindrances in the hand hygiene practices during health care delivery. In a study [51] it is concluded that managers are responsible for ensuring the provision of adequate facilities and supplies of hand-washing agents in all clinical settings. The commitment of hospital managers in this area is crucial to improve compliance with hand washing and reducing infection rate [52]. Therefore this study was conducted in the Ch. Ranbir Singh OPD complex of PT.B.D.S. PGIMS, Rohtak for evaluating the availability and accessibility of hand-washing facilities and supplies of hand washing agents. PGIMS, Rohtak, is around 1700 bedded tertiary care teaching, research and referral health-care institute in Haryana. Its OPD complex is a four-storied stand alone building exclusively serving outpatients in almost all the major specialties and super specialties. The daily average OPD census is around 5000 patients.

Aim & Objective

- To survey the Hand washing facilities in Ch. Ranbir Singh OPD at PT. B. D. S. PGIMS, Rohtak

METHODOLOGY

A survey check list was adopted from the previous available literature [53] for assessing the condition at each sink in different rooms of the Out Patient Department (OPD). The survey check list was adopted as such without any modifications as the PGIMER, Chandigarh and PGIMS, Rohtak are situated in the same geographical region and the hand washing practices are almost same in this region. The check list carries different points pertaining to different aspects of hand washing facilities. The sinks were assessed for their easy accessibility and their blockage with some equipment or due to problem in architectural design. The availability of item for hand washing was assessed. In our hospital soap bar is used as most common agent for hand washing as compare to non aqueous alcohol based hand washing agents therefore the availability of soap bar was assessed. In our hospital drying of hands with towel is a standard practice instead of use of electric hand dryer or paper napkin. Therefore we studied the availability of towel at each sink. All the rooms of Ch. Ranbir Singh OPD were assessed on a single day. The data collected was studied through SPSS 16.0 (SPSS Inc, Chicago, USA) and descriptive statistical analysis was performed.

RESULTS

Total of 81 different rooms were studied including the rooms for consultants, Senior Residents, Junior Residents, Dressing Rooms, Minor Operation Theatres etc. The rooms which are not used in patient care activities viz. Store room, demonstration Room, Drug distribution area i.e. dispensary etc. were not included in the study. It was found that sink was available in all most all the rooms (99%). The sink was accessible to the doctors in majority of the cases (99%) and all the sinks were intact and were in working conditions. The taps were in functional condition at majority of the sinks (99%) except at one sink. Most of the taps (89%) were hand operated and rest were elbow operated. The elbow operated taps were installed in the Minor OT's and procedure Rooms. The soap stand was available at majority of the sinks and it was missing at 9% sinks and was found broken at one sink. Cleansing agent was available at majority of the sinks (96%). At all the places (100%) the soap bar was used as cleansing agent however alcohol based hand rub antiseptic solution was available at few places (8%) in addition to soap bar. The alcohol based antiseptic solution was available in the Minor OT's and procedure rooms. At majority of the places (88%) the towel stand was available and in 12% places it was found missing and in broken state. The towel was available at majority of the sinks (55%) and it was missing in 45% sinks. The towel was found clean at majority of the sinks (99%). Almost all the sinks were found in the working conditions except at one place; however hand washing instructions demonstrating correct technique were missing at all places.

Table 1: Table showing results of check list survey

Sr. No.	Points to be Checked	Result	
1	Availability of Sink	Available	80 (99%)
		Not Available	01 (1%)
		Accessible	79 (99%)
		Not Accessible	01 (1%)
		Intact	80 (100%)
		Broken	0
2	Taps	Hand Operated	71 (89%)
		Elbow Operated	09 (11%)
		Working	79 (99%)
		Not Working	1 (1%)
3	Soap Stand	Yes	72 (90%)
		No	7 (9%)
		Broken	1 (1%)
4	Sink drain	Open	79 (99%)
		Blocked	1 (1%)
5	Type of cleansing agent	Soap Bar	77 (96%)
		Liquid Soap	-
		Antiseptic	6 (In six Rooms both Soap bar & Antiseptic were available) (8%)
6	Towel stand	Yes	70 (88%)
		No	5 (6%)
		Broken	5 (6%)
7	Towel	Towel Present	44 (55%)
		Towel Absent	36 (45%)
		Clean Towel	43 (54%)
		Dirty Towel	1 (1%)
8	Cleansing agent	Yes	77 (96%)
		No	3 (4%)
9	Sink with Hand washing instructions demonstrating correct technique	0	

DISCUSSION

In few studies [35, 50] it was concluded that large scale implementation of high standards of hand hygiene practices and effective Hospital Acquired Infection control requires instituting system changes, overcoming resource crunches and implementing organizational and human change. Earlier very few studies were conducted in India for assessing the availability and accessibility of hand washing facilities in Out Patient Department of large teaching hospitals. One such study was conducted in PGIMER, Chandigarh by Devnani *et al.* [53]. In one study [54] indoor hand washing facility in 22 hospitals of Mediterranean countries were studied and Kesavan *et al.* [55] evaluated the hand washing facilities in elderly care wards of seven UK hospitals. Devnani *et al.* [53] assessed 209 hand washing sinks, while Amazian *et al.* [54] assessed 908 sinks and Kesavan *et al.* [55] assessed 264 sinks. The present study assessed 81 sinks in the outpatient department. In our present study the availability & accessibility of hand washing facilities was high (99%). This is similar to the findings of study done by Devnani *et al.* [53] where sinks were available in 99.05% cases. However Kesavan *et al.* [55] reported

that 11% of the sinks were inaccessible and Amazian *et al.* [54] concluded that 10% of the sinks were non functional. It was found that most of the taps (89%) were hand operated. The similar findings were reported by Devnani *et al.* [53] (99.5%) and Amazian *et al.* [54] (93%) in their studies. However on the other hand Kesavan *et al.* [53] reported low number of hand operated taps (39%) in his study. The difference may be due to difference in the setting of the study as this study was carried out in a developed country.

The soap stand was available at majority of the sinks and it was missing at 9% sinks and was found broken at one sink. However Devnani *et al.* [53] reported that 16.75% sinks lacked soap stands and an additional 10.48% had broken soap stands. However it was reported in the present study that despite the availability of soap stand at 88% sinks the Cleansing agent was available at majority of the sinks (96%), the finding were similar to the findings of a study [53] in which the availability of cleansing agents was high as only 6.7% sinks were without soap, and on the other hand compared to 42.9% and 12.1% reported by Amazian *et*

al. [54] and Kesavan *et al.* [55] respectively. At all the places (100%) the soap bar was used as cleansing agent however alcohol based hand rub antiseptic solution was available at few places (8%) in addition to soap bar. This number is comparable to those of Devnani *et al.* [53], Amazian *et al.* [54] and Kesavan *et al.* [55] who reported 2.87%, 4.1% and 6.8% sinks with antiseptic agents, respectively. This is due to the fact that in our settings soap bar is most commonly used as hand washing agent. The striking finding of present study was that at majority of the places (88%) the towel stand was available and in 12% places it was found missing and in broken state. The towel was available at majority of the sinks (55%) and it was missing in 35% sinks. The towel was found clean at majority of the sinks (99%). In Devnani *et al.* [53] the number of sinks without towel stands or with broken towel stands was less than 6%, there was no towel at 20% of the sinks. At an additional 11% of sinks, towels were dirty and therefore potential reservoirs for recontamination. Kesavan *et al.* [55] reported the availability of paper towels at 97.4% of sinks. In the present study it comes out that hand washing instructions demonstrating correct technique were missing at all places. The similar findings were found in the study conducted by Devnani *et al.* [53]. In the current study the hand-washing compliance was not measured directly, but the results provide some indirect evidence that the facility surveyed provides convenient access to hand washing, which has been argued to increase hand-washing compliance among HCWs [43, 52]. The results of this study should be interpreted in light of a limitation that the findings cannot be generalised to other tertiary care hospitals as PGIMER, Chandigarh, is an autonomous institute directly funded by the government of India and similar resources may not be available to other tertiary care hospitals. In conclusion, the study has shown that the physical facilities required for hand washing in the OPD were adequate though not perfect. More effort and resources should be put in place for the maintenance and upgrading of the existing infrastructure. There is also a need to shift from cloth towels to paper towels as evidence from other investigations suggests that cloth towels are significant potential sources of re-infection [47].

CONCLUSION

Hand-washing instructions demonstrating the correct technique should also be displayed near sinks. Hospital managers in developing countries should continuously strive to provide the best possible hand washing facilities available within their financial resources.

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