

An audit on hand hygiene as a practice in the eye department of a teaching institute in Dehradun. A cross-sectional study.

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Abstract

Background

The eye is not only a sense organ but also an optical medium. Ocular hygiene is dependent on hands, as any condition requires the instillation of drops and ointment into the eye. Hand Hygiene (HH) is a safe and effective tool to prevent ocular infections pre- and post-operatively. Health Care Associated Infections (HCAIs) are an economic burden and contribute to morbidity and mortality. The present study evaluates Hand Hygiene as a practice in the eye department of a teaching institution over six months.

Material and Method

All health personnel working in the eye department were included in the study. They were observed on the first day of their duty, and the status of hand hygiene was noted. After proper guidance, they were observed every week, and their compliance was documented at the end of their posting. The study draws a comparison of their status of Hand Hygiene on the first and last day of their presentation.

Results

Hand hygiene compliance improved significantly after counseling across all staff groups. Intern compliance improved significantly ($p=0.0001$), and attendants/housekeeping staff also showed improvement ($p=0.0098$). Support staff compliance increased from 0% to 75%, OPD optometrists from 29% to 57%, while faculty improved from 90% to 100% after intervention.

Conclusion

The practice of Hand Hygiene is of utmost importance in any healthcare system. It needs proper guidance and persistence for a thorough implementation of Hand Hygiene to become a regular habit.

Keywords: Hand Hygiene, Eye Department, Dehradun

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Introduction

Handwashing has been a measure of personal hygiene for centuries and has been embedded in religious and cultural habits worldwide. Evidence is available that strict adherence to Hand Hygiene reduces the risk of Cross-transmission of infections. [1-5] Health Care Associated Infections (HCAIs) draw attention and scrutiny from patients, insurers, government, and regulatory bodies. It is not just the knowledge but also the practice of Hand Hygiene that needs our attention. Such cross-sectional studies remind us of our status in health and hygiene and help us to gain

input for comparisons of the existing state of affairs. This study is also an attempt to gauge the Hand Hygiene practices and take into account the factors that need modification and intervention.

Objective

To assess the hand hygiene of health care personnel (HCP) in the Eye department

To draw comparisons of their status pre- and post-guidance

Material and Method

Study design

Cross-sectional study

Study setting

Done in the Department of Ophthalmology at Shri Guru Ram Rai Institute of Medical and Health Sciences, Dehradun, for a period of one month

Inclusion and Exclusion Criteria

With due approval from the hospital research committee and accreditation board, all healthcare personnel posted in the Ophthalmology department were observed for hand hygiene practice and were guided on improvement, which was noted after one month. They were classified as Trained Doctors, Nurses, Optometrists, Trainees (Junior Residents, Nursing Interns, Optometry Interns, Doctor Interns), and Housekeeping. They were observed on the first day of their duty, and the status of hand hygiene was noted. After proper guidance, they were observed every week, and their compliance was documented at the end of their posting. The

study draws a comparison of their status of Hand Hygiene on the first and last day of the month. A total of 276 cases (health care professionals) were evaluated over one month. Hand Hygiene was classified as Proper or Improper (Long Nails, Nail Paint, jewelry on wrist and fingers, gadget). The key five moments of handwashing that were used as criteria were: 1. Before touching a patient, 2. Before a clean/aseptic procedure 3. After body fluid exposure risk 4. After touching a patient 5. After touching the patient's surroundings. All the HCPs were observed and marked for their Hand Hygiene on the above-cited parameters.

Statistical Analysis

Data were collected using a pretested, semi-structured, self-administered questionnaire and an observational checklist. Data analysis was done using the SPSS statistical package, and the level of significance was set at $P < 0.05$.

Ethical consideration

This study is not research. It is an Audit only, which is promoted by the Institutional NABH committee to promote hand hygiene practice among health care workers.

Results

Table 1: Comparison of Hand Hygiene at Presentation and Post Guidance

Category	n	Age Group	Hand Hygiene at Baseline, n (%)	Hand Hygiene Post-Guidance, n (%)	p Value
Interns	228	20–30 years	96 (42.1%)	205 (89.9%)	0.0001
└ Male	61	20–30 years	36 (59.0%)	55 (90.2%)	—
└ Female	167	20–30 years	60 (35.9%)	150 (89.8%)	—
Residents	11	20–30 years	5 (45.5%)	11 (100%)	1.0
└ Male	5	20–30 years	2 (40.0%)	5 (100%)	—
└ Female	6	20–30 years	3 (50.0%)	6 (100%)	—
Faculty	10	>30 years	9 (90.0%)	10 (100%)	1.0
└ Male	4	>30 years	4 (100%)	4 (100%)	—
└ Female	6	>30 years	5 (83.3%)	6 (100%)	—
Nursing Staff	12	20–30 years	9 (75.0%)	12 (100%)	1.0
Optometrists	7	20–30 years	5 (71.4%)	7 (100%)	0.445
└ Male	3	20–30 years	3 (100%)	3 (100%)	—
└ Female	4	20–30 years	2 (50.0%)	4 (100%)	—
Attendants/House keeping	8	>30 years	0 (0%)	6 (75.0%)	0.0098
└ OPD	3	>30 years	0 (0%)	2 (66.7%)	—
└ Ward	5	>30 years	0 (0%)	4 (80.0%)	—

Comparison of Hand Hygiene at Presentation and Post Guidance

The table shows a significant improvement in the practice of Hand Hygiene after adequate guidance and counseling at all levels in the department. Among interns, who included doctors, nurses, and optometrists, the Hand Hygiene

increased significantly (p -value=0.0001). Among attendants and housekeeping staff, the p -value = 0.0098. The table also shows that Hand Hygiene is found to be more adhered to among higher orders of the department than the lower orders. Out of 8 staff, none were found to be adequately following the Hand Hygiene practice; however, after proper counseling, 6 out of 8 (75%) began to comply with HH rules. Among 7 optometrists, 3 posted in the operating theatre (OT) strictly adhered to HH at presentation, and no lapse was noted during the observation period after the guidance. However, the optometrists posted in the Outpatient Department (OPD) showed less (29%) inclination towards HH but improved to 57% after counseling.

As the faculty included new employees also, the practice of HH swiftly converted from 90% at presentation to 100% post guidance.

Discussion

In the present study, we found that Hand Hygiene was significantly lacking amongst the lower staff, such as attendants and housekeeping. It could be due to their nature of work, which involved cleaning and mopping, or/and/or because of the use of gloves. Some staff were involved in a more indirect interaction, like carrying files of patients or running small errands. Interns were aware of the 'Five Moments of Hand Hygiene' but were not regularly practicing due to limited involvement with the patients. Through proper guidance, the Hand Hygiene practices improved significantly. The Ophthalmology residents were also adhering to Hand Hygiene Practice, and no gender predilection was noted. The Optometrists were optimum (100%) in the eye operation theatre (OT) than in the Outpatient Department (OPD) of the eye department. This could be attributed to strict asepsis being followed in OT during ophthalmic procedures, while in OPD, the HH was less than optimum due to lack of physical proximity and non-invasive procedures being performed with the patient in eye OPD. In non-participatory observations at ten tertiary-care hospitals using the WHO's '5-moments for hand hygiene tool' to record HH compliance among physicians, nurses, and cleaning staff, a study from Bangladesh by M.G.D. Harun et al. observed that the overall HH compliance was 25.3%, the highest among nurses (28.5%), and the lowest among cleaning staff (9.9%), and the difference was statistically significant (p -value <0.001). The reported key barriers to performing HH were insufficient supplies (57.9%), skin reactions (26.3%), workload (26.3%), and lack of facilities (22.7%). [5]

In a cross-sectional study conducted at Gondar University Hospital in 2013, it was found that out of 405 study participants interviewed and observed good HH compliance, was found to be only 16.5%. The study reiterated the role of training and the provision of alcohol-based hand rub and tissue paper for hand hygiene compliance.[6]

In a cross-sectional, descriptive study from Nigeria, conducted among all cadres of doctors employed by the hospital, out of 326 doctors, 43.9% had good knowledge, and 48.2% had good practice of hand hygiene. Sex and specialty of the doctors were significantly associated with knowledge but not with the practice of hand hygiene. The Non-Compliance was attributed to a lack of soap (65.0%), forgetfulness (35.0%), being too busy/insufficient time (19.3%), and skin irritation from washing agents (4.6%). [7] In a study from Arabia, it was found that females had significantly better knowledge than males regarding the type of HH technique and actions. Females also had a significantly better attitude towards the importance of HH than males (240(62.5%) vs 144(37.5%); $P < 0.001$).

In the present study, we found that the compliance towards HH guidance was 100% among trained faculty, and they had not only imbibed the good habit themselves, but were also vigilant of the newcomers, and trainees (nursing, optometry, residents, doctors). Proper compliance was also noted among staff at the operating theatre, which constituted 43% of the trained HCPs. We also found that the compliance was determined by the nature and location of the duty. Those coming in direct contact with the patient or involved with invasive procedures were found to be alert and followed the Hand Hygiene guidelines completely. As residents under training have a longer stay in the department than the interns, the compliance of residents was significantly higher than that of interns. This reflects that a longer duration in the department brings about behavioral changes and makes one more cognizant of his/her role in the department. This study thus aptly shows the difference in the Hand Hygiene practice of a seasoned HCP and a novice in the eye department. It also shows that a good habit needs time and perseverance to become a practice.

Conclusion

This study is like an audit that emphasizes the need for proper education and training to practice Hand Hygiene. Also, such studies are needed at constant intervals as the department faces a constant inflow and outflow of health personnel, especially interns and trainees. One must also incorporate alcohol rubs, gloves, and the learned participation of the patients.

Limitation

The results cannot be generalized and applied to the whole of the teaching institution. However, the Eye department, being the most sensitive area for Hand Hygiene, does reflect the nature of the challenge and the efforts needed to mitigate the problems.

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Disclosure of interests

The authors report no conflict of interest.

Author contribution:

Vatsala Vats *MS* – Concept and design of study, Drafting of the article, Critical feedback, Final approval

Monika Jain, *MS* – Data acquisition, Analysis, Image editing, Drafting of the article, Final approval

Priyanka Gupta *MS* – Data acquisition, Analysis, Final approval

Tarannum Shakeel *MS* – Concept and design of study, Critical feedback, Final approval

Sreeram Jayaraj, *MD* – Drafting of article, Critical feedback, Final approval

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