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Original Article

The impact of hand hygiene awareness programme on health care professionals' compliance with hand hygiene in a tertiary care hospital: A clinical audit

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ARTICLE INFO

Article history:
Received 26 December 2014
Accepted 16 May 2015
Available online 28 June 2015

Keywords:
Compliance
Health care professionals (HCP)
Hand hygiene awareness programme (HHAP)
Clinical audit

ABSTRACT

Background: Hand hygiene is the most cost effective method to control the health care associated infections. Despite knowing the fact the compliance of health care professionals with hand hygiene is not up to the mark.

Methods: An observational, prospective study was designed to assess knowledge, and attitude of health care professionals towards hand hygiene practices. The impact of hand hygiene awareness programme (HHAP) on the compliance of 106 health care professionals working in paediatric medical and surgical wards of a tertiary care hospital was also evaluated. Clinical audit comprised of 200 observations each before and after the HHAP was done.

Results: Of total 106 health care professionals 73 (68.8%) were nurses, 33 (31.13%) doctors with mean age (years) of 32.14 ± 7.4. Mean knowledge and attitude scores of HCP were 19.28 ± 2.4and 39.26 ± 3.9 respectively. Majority HCP had good knowledge (91/106, 85.8%) and favourable attitude (89/106, 83.9%) related to hand hygiene practices. Significant improvement in hand hygiene compliance was observed among the health care professionals following the hand hygiene awareness programme ($p < 0.001$).

Conclusion: Hand hygiene awareness programme should be continued on ongoing basis to improve the compliance of HCP with hand hygiene practices.

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http://dx.doi.org/10.1016/j.jpsic.2015.05.003
2214-207X/

1. Introduction

Health care-associated infection (HAI) transmission in the hospital environment remains a significant hazard for hospitalized patients and health-care workers.[1] The HAI are the most common serious complication of hospitalization, and the leading cause of death among hospitalized patients.[2] Most HAI are thought to be transmitted by the hands of health care workers. Hand hygiene has been recognized for more than 150 years as the single most effective and cost-effective means of preventing hospital acquired infection, as well as an effective means of preventing illness in the community that may lead to hospitalization.[3] It has long been known that hand hygiene among health care workers plays a central role in preventing the transmission of infectious agents.[1] Hand-washing is the most effective way of preventing the spread of infectious diseases. But despite, Centres for Disease Control and Prevention (CDC) hand hygiene guidelines being implemented in hospitals, compliance among health care professionals remains low.[4] Studies in the literature have repeatedly documented that the importance of hand hygiene is not sufficiently recognized by health care professionals (HCP) and compliance with recommended practices is unacceptably low.[5–7]

2. Aims and objectives

To assess knowledge, and attitude of health care professionals towards hand hygiene practices, and to measure the impact of hand hygiene awareness programme on the compliance of health care professionals.

3. Material and methods

The study took place from January 2014 to July 2014 in paediatric medical and surgical wards of a tertiary care hospital. The study targeted 106 health care professionals including doctors and nurses involved in direct patient care in paediatric medical and surgical wards of a tertiary care hospital. Total enumeration technique was used to enrol the health care professionals. All those consented were included in the study. The study was approved by the Ethics Committee of the hospital. Formal information about the research project was given to the assistant nursing superintendents of the wards and heads of the department of paediatric medicine and surgery by infection control nurses before the initiation of project.

Subject datasheet, self administered knowledge questionnaire, attitude scale and audit sheets were used for data collection. The subject data sheet had baseline information related to age, basic qualification, professional qualification, designation, total professional experience, experience in the present area of work, in-service education training related to hand hygiene etc. Self administered knowledge questionnaire and attitude scale were prepared with the help of experts after extensive review of literature. The knowledge questionnaire had 31 items. For every correct response a score of one and incorrect response a score of 0 was given. The maximum obtained score could be 31. Attitude questionnaire had 10 items measured on five point likert scale. The maximum possible obtained score could be 50. Total knowledge and attitude scores were graded as Excellent (>80%), Good (61–80%), Average (50–60%) and Poor (<50%). Audit sheet were prepared based on hospital infection control policy and experts' opinion to check hand hygiene practices either using hand rub or hand washing. Audit sheet was a checklist indicating absence or presence of short nails, jewellery, six steps of hand washing, duration of hand washing/application of hand rub, through rinsing and drying. Compliance with hand hygiene practices was categorized as appropriate (if all the steps were followed), inappropriate (missed one or more steps) and not at all (no hand hygiene observed). Reliability of knowledge and attitude questionnaire($r = 0.94$, $r = 0.95$) and audit sheet ($r = 0.89$) was established by test retest method and inter-rater test, respectively.

The study was conducted in three phases: pre-intervention phase, intervention and post intervention phase. In pre-intervention phase baseline knowledge and attitude of 106 health care professionals working in paediatric medicine and surgery wards towards hand hygiene were assessed. A clinical audit of hand hygiene practices was done over a period of one month, which included 200 observations among the available health care professionals including doctors and nurses working in paediatric medicine and surgery wards (Table 1). The hand hygiene practices before and after the invasive procedures like medication injections (bolus/infusion), endotracheal suction, surgical dressing, I/V cannulation, biopsy, peritoneal lavage were observed.

The observers were the four infection control nurses who used direct non-participatory observation technique for data collection. Two infection control nurses were present around the patients in each ward, on all working days for a period of 2 h, daily between 9 am and 1 pm. It was ensured that patients' privacy was respected and the observation did not interfere with health-care activities being carried out during the session. Observations in extreme situations like cardio-pulmonary resuscitation were avoided. The audit sheet was filled immediately after the observation session. Feedback was given to every HCP individually after the clinical audit. The second phase was an intervention phase of one week duration, in which hand hygiene awareness programme (HHAP) was implemented. The HHAP was a campaign program consisted of displaying pamphlets, posters and reminders related to five moments of hand hygiene, steps of hand washing and application of hand rubs at specified places in the wards like near hand washing area, treatment room, and near the bedside of the patients, where health care professionals–patient contact could occur. During the evaluation or post-intervention phase another clinical audit of 200 hand hygiene practices was done in the same manner in one month time as done in pre-intervention phase.

Collected data was coded, and entered in Excel sheet and analysed using Stata 9.0 and SPSS 17.0. Descriptive statistics were used to analyse the data. Frequency, percentage, mean, median, range, SD were calculated. Pearson coefficient correlation test was used to find out correlation between knowledge and attitude scores of HCP related to hand hygiene practices. Compliance of the HCP with hand hygiene practices