



Knowledge & Compliance on Hand Hygiene among Staff Nurses Working In Community Health Centers – Literature Review

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Abstract

The current study aims to assess knowledge & compliance on hand hygiene among staff nurses working in selected community health centers employing literature review as the methodology. Multiple databases were searched focusing of the hand hygiene knowledge and adherence with the practice to prevent spreading of hospital acquired infection. It was concluded that to prevent spreading of infection, proper knowledge and practice have to follow on hand hygiene.

Keywords

Hand hygiene, Knowledge, Compliance, Community health center, Hospital acquired infection, Staff nurses

INTRODUCTION

Hygiene is the practice of keeping oneself and one's surroundings clean, especially in order to prevent illness or the spread of disease. Hand washing for hand hygiene is the act of cleaning the hands with or without the use of water or another liquid, or with the use of soap, for the purpose of removing soil, dirt, and/or microorganisms. The Centers for Disease Control and Prevention (CDC) has stated, "It is well-documented that one of the most important measures for preventing the spread of pathogens is effective hand washing." The main medical purpose of washing hands is to cleanse the hands of pathogens and chemicals which can cause personal harm or disease¹.

Most healthcare-associated infections (HAI) are thought to be transmitted by the hands of Healthcare Providers (HCPs) through direct contact, mainly when the hands of HCPs transfer microorganisms between individuals or between individuals

and the environmental reservoir.² It has long been known that hand hygiene among HCPs plays a central role in preventing the transmission of infectious agents².

The literature reviewed was obtained through different database includes CINAHL (Cumulative index TO Nursing & Allied Health Literature), MEDLINE (Medical Literature Analysis & Retrieval System Online), PubMed, Science Direct, SpringerLink, ProQuest & Google scholar.

MATERIAL METHODS & FINDINGS

The study is headed mainly on the knowledge and compliance level of hand hygiene.

A descriptive and cross-sectional study was conducted in neonatal units in the hospitals affiliated to Tabriz University of Medical Sciences. This study was conducted by Malihe Asadollahi, Mohammad Arshadi Bostanabad, Mahnaz Jebraili, Majid Mahallei, Alehe Seyyed Rasooli,

Marzieh Abdolalipour at 2014. The participants surveyed in this study were 150 nurses who were invited by census sampling method. The quantitative analysis of this study used Statistical Package for Social Sciences SPSS version 13 by descriptive statistics and Pearson correlation test, independent samples t-test, One-way ANOVA. For multivariable explanation of nurses' knowledge based on independent variables multiple linear regressions was used. Results: Most of participants have an acceptable level of knowledge regarding hand hygiene. The highest score was for infection control domain and the lowest score was for definition of hand hygiene domain. Multivariable analysis showed that work experience and history of previous training were the most important predictors of participants' knowledge about hand hygiene³.

Cross-sectional study conducted in 42 bedded Medical (Pulmonary, Medicine and Stroke) intensive care units (ICU) of a tertiary care teaching hospital of Punjab. This study was conducted by Sarit Sharma, Shruti Sharma, Sandeep Puri, Jagdeep Whig at Oct 2005. A total of 114 HCWs were observed over 79 hrs of observation period, spread over two months, which created 911 HH opportunities. The HCWs comprised of 18

attending physicians, eight intensivists, nine senior residents, 10 PG residents, four non-PG residents, and 65 nurses posted in the ICUs. Result of this study was, HCWs (doctors and nurses) were observed during routine patient care by observers posted in each ICU and their HH compliance was noted. The overall compliance was 43.2% (394/911 opportunities). It was 68.9% (31/45) in the intensivists, 56.3% (18/32) in attending physicians, 40.0% (28/70) in the postgraduate residents and 41.3% (301/728) in the Nurses. Compliance was inversely related to activity index. It indicates that Compliance of the study group is affected by the activity index (number of opportunities they come across per hour) and professional status. The HCWs listed less knowledge, lack of motivation, increased workload as some of the factors influencing HH⁴.

A study regarding online learning to improve hand hygiene knowledge and compliance was conducted in two north-eastern Ohio hospitals, including a community-based hospital and an urban children's hospital. This was done by Sonia A. Alemagno, (PhD) Sharon M. Guten, (PhD), Shawn Warthman, MBA, Elizabeth Young, BSN, and David S. Mackay, BS at 2010 by using *Prevention Guideline for Hand Hygiene in Health-Care Settings* (Centers for Disease Control



and Prevention, 2002). A total of 256 using convenience sample of volunteer health care workers at two hospitals completed all three sessions (behavioural, normative, and control beliefs) of the online continuing education program. The result of study was like that the Health care workers reported a significant improvement in hand hygiene knowledge and self-assessed compliance with hand hygiene behaviours. Most (97%) of the participating health care workers reported that the program was effective in improving clinical compliance behaviours. The results of this study indicated that individual health care workers can and will use self-assessment to prompt improvement in hand hygiene⁵.

A non-experimental descriptive study was undertaken to determine the level of knowledge and practice on hand hygiene among the student nurses in Regional Advanced Paediatric Care Centre, Mangalore (RAPCC), A total of 60 student nurses were selected using convenience sampling technique the study was conducted by Siji Jose, Asha P Shetty and Praveen V Bagali in oct-2013. A structure questionnaire and an observation checklist were developed and validated to collect the data. The results revealed that 53.3 percent of student nurses had good level of knowledge and 60 percent of student nurses had an average level of practice on

hand hygiene. No significant association was found between level of knowledge and practice on hand hygiene and demographic variables such as age of the students, gender, year of study, type of nursing course attended on hand hygiene. A significant positive correlation was found between knowledge and practice scores of hand hygiene among student nurses. It is concluded that the student nurses who had high knowledge scores had better practice as compared to those with poorer scores⁶.

The study was conducted for development of questionnaires to assess health care student's knowledge, beliefs and practices at Southern Cross University, Lismore, Australia by Thea van de Mortel, the Faculty of Arts and Sciences, Southern Cross University, Lismore, Australia in 2006. The study was done on Undergraduate students of nursing undergoing University education. The Hand Hygiene Questionnaire was administered to 14 student nurse volunteers in the final year of their undergraduate degree and to another 45 volunteers following revision. In result session, the face validity of the HHQ was high. Cronbach's alpha values of 0.80, 0.74 and 0.77 were obtained for the Hand Hygiene Beliefs scale (HBS), the Hand Hygiene Practices Inventory (HHPI), and the Hand Hygiene Importance Scale (HIS) following removal of items with low item-



to-total correlations or zero variance. The mean item-to-total correlations of the HBS, HHPI and IS were 0.37, 0.33, and 0.61 respectively. The two-week test-retest coefficients for each scale were 0.85, 0.79 and 0.89 respectively⁷.

A Qualitative cross sectional study was conducted to assess knowledge, Attitude and Practices of Five Moments of HH among Nursing Staff and Students at a Tertiary Care Hospital at Karad. The study was conducted at Krishna institute of medical sciences deemed university's Krishna hospital & medical research center karad. This was done by Mahadeo B Shinde and Vaishali R Mohite. The 100 samples selected was a staff nurse and 100 student nurses. The five moments that call for the use of hand hygiene include the moment before touching a patient, before performing aseptic and clean procedures, after being at risk of exposure to body fluids, after touching a patient, and after touching patient surroundings. This concept has been aptly used to improve understanding, training, monitoring, and reporting hand hygiene among healthcare workers. Knowledge was assessed using WHO hand hygiene questionnaire. Attitude and practices were evaluated by using another self-structured questionnaire. Z test was used to compare the percentage of correct responses between medical and

nursing students. Result of this study, the knowledge on hand hygiene was moderate (144 out of 200, 74%) among the total study population. The majority of students had poor attitudes with regard to hand hygiene. Nursing students had significantly ($P < 0.05$) better attitudes (52%) compared to nursing staff (12%). Student nurses had better five moments of hand hygiene practices than the staff nurses. (International Journal of Science and Research (IJSR))⁸.

An institution based observational descriptive epidemiological a cross sectional study was carried out to assess knowledge of hand hygiene among medical students at tertiary care teaching urban Government hospital of Kolkata, West Bengal, India. This study was conducted by Dr. Sita Chatterjee, Dr. Tushar Kanti Mondal, Dr. Kaushik Sarkar, Dr. Bhaskar Shahbabu, Dr. Ishita Sarkar, Dr. Gautam Barik and Dr. Mausumi Basu. The duration of this research was from May 2015- July 2015; a period of 3 months. 150 students of 4th semester and 98 students of 6th semester batch were included in the study. Knowledge was assessed using WHO's hand hygiene questionnaire for HCWs. The result obtained through the Statistical analysis was by Microsoft office excel 2010, Statistical Package for the Social Sciences SPSS 16



&Epiinfo 6.04d. Knowledge on hand hygiene was moderate among 76% of the total study population. Only 8% of participants had good knowledge and rest 16% had poor knowledge regarding hand hygiene. In conclusion emphasis on hand hygiene in the undergraduate curriculum is need of the hour⁹.

A cross sectional study was conducted to assess knowledge and attitude regarding HH among residents & nursing staff at Tertiary Health Care Setting of Bhopal City .this was done by VeenaMaheshwari, Navin Chandra M kaore, Vijay Kumar Ramnani, Sanjay Kumar Gupta,AmodBorle, and RitujaKaushal. The study was carried out for a period of three months from June to August 2013 .A total of 160 respondents was included in the study (80 Resident and 80 nurses) and pre-validated questionnaires were administered to respondents. Their level of knowledge was assessed on the basis of the Hand Hygiene Knowledge Questionnaires for Health-Care Workers designed by WHO and revised August 2009, which was modified. A significant difference with p-value of 0.0001 & 0.04 was observed in colonization due to jewellery and artificial nail among the study groups. The attitude regarding correct hand hygiene practices to be followed at all times was found to be better among nurses (62.5%) as compared

to residents (21.3%) which was found to be highly significant with p-value <0.001¹⁰. A descriptive study related to Knowledge and Practices Related to Compliance with Universal Precautions among Staff Nurse. This study was carried out in seven selected wards of the PGIMER, Chandigarh.the researchers are Suksham Chopra, IndarjitWalia, PremVerma and JogindraVati conducted this research during 2004-05. These wards were selected, assuming high prevalence of infections in these wards. All the nurses (Sister Grade - II) a group of 82 nurses(respondents) who expressed their willingness to participate in the study, were interviewed with the help of a semi-structured interview schedule were included in the study. The result shown that more than three-fourths of them were in the age - group of 26 -45 years and were either Hindus or Sikhs. More than ninety five percent were aware that proper hand washing could limit the spread of microorganisms but in practice only 74.4 percent of them were washing their hands after caring each patient. Non-availability or lesser availability of articles affected their compliance with Universal Precautions. No wonder, only 31.7 percent felt satisfied with available articles in their wards. The challenge therefore lies not only in the provision of adequate articles

for compliance with Universal Precautions, but also there is a need for well-planned training programme and proper supervision¹¹.

A descriptive study was conducted at selected tertiary hospital of Ludhiana to assess the hand hygiene practices during medication administration. This study was done by Harpreet Kaur, Dr. Mrs Jasbir Kaur in 2014. This descriptive study was conducted in all the inpatient wards. Ethical permission was obtained from the institutional ethical review committee. A convenience sampling technique was used to enroll the staff nurses. A total of 200 staff nurses were selected as sample size. The participatory observation was done to assess hand washing practices during routine work. Data was collected using structured and semi structured tool. Tools used in the study were interview schedule and check list to assess available hand washing facilities and hand hygiene practices among staff nurses. Results were; out of 200 staff nurses, only 7.5 % washed their hands both before and after medication administration, while 27.5% only before the drug administration and 53.5% after drug administration regardless of available hand washing facilities. Compliance to hand washing was significantly low among staff nurses¹². A quantitative study using an exploratory

descriptive survey design, study was conducted at a southeastern United States academic medical center with a 722-bed tertiary care hospital. This was done by Patricia A. Waltman, EdD, Laura K. Schenk, PhD Tina M. Martin, PhD & Jean Walker, PhD, RN. The study group consisted of 75 junior-level nursing students enrolled in a nursing research course who agreed to participate in the study. The study occurred over a 3-month period during their spring semester of study. Students observed and recorded approximately 900 health care workers' hand hygiene opportunities throughout the medical center's hospitals and clinics, representing 59 different patient care units and departments. The result shown that; Students demonstrated strong knowledge of hand hygiene principles: 63% reported that hand hygiene monitoring positively influenced their own compliance. Students reported that hand hygiene activities helped them value the role of the nurse in research and evidence-based practice. This study may help educators clarify misconceptions that result in student noncompliance in hand hygiene practices¹³.

CONCLUSION

Assessment of knowledge and adherence with the hand hygiene complacence is

become helpful for reducing prevalence of infection. So the knowledge and compliance of staff nurses play an important role in enhancing health.

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Conflict of Interest: None

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Ethical Clearance: The ethical clearance obtained from our institutional Ethical Review Board (CHARUSAT University, Changa) and as there is no involvement of patient so no need to take further ethical clearance.



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