

Assessment of Hand Hygiene compliance among Health Care Workers at National Liver Institute, Menoufia University

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ABSTRACT

Background: The hands of health care workers (HCWs) are more often the carriers of the germs that cause HAIs. Therefore, among HCWs, illnesses are frequently linked to poor hand hygiene habits.

Objective: This study aimed to assess hand hygiene compliance among HCWs at Inpatient Departments National Liver Institute (NLI), Menoufia University.

Patients and Methods: In this cross-sectional study, hand hygiene compliance of HCWs in NLI at inpatients was assessed using standardized world health organization hand hygiene (WHO HH) observation check list.

Results: Regarding hand hygiene compliance at different NLI inpatients, HH compliance was the highest among HCWs of Hepatobiliary surgery inpatient (37.5%) compared to Hepatobiliary pediatric (31.25%) and Hepatobiliary Internal Medicine inpatient (28.1%).

Conclusion: HH compliance of HCWs at different inpatient departments was low. Education is a major aspect influencing the practice of HH. Further studies with large numbers of participants need to be conducted for better assessment.

Keywords: Hand hygiene, Health care workers, Compliance.

INTRODUCTION

Health care-associated infections (HAIs) impact hundreds of millions of people globally and pose a serious threat to patient safety. HAIs lead to higher rates of morbidity and death, length of hospital stay, antibiotic-resistant bacteria, new infectious disorders, and increased health care expenses ⁽¹⁾.

Compared to high-income countries, the frequency of HAIs is greater in low- and middle-income nations. The frequency of HAIs in hospitals is estimated to be 15.5%, according to studies done in low-income settings. This is significantly higher than findings from the United States and Europe ⁽²⁾.

Hand hygiene (HH) among HCWs is regarded as one of the most crucial tactics to lower the frequency of HAIs, and consistent HH compliance improvement has been shown to lower HAIs while also being economically advantageous. The "my five moments for hand hygiene" approach developed by the WHO outlines the critical times when healthcare professionals should practise HH. These times include before touching a patient, before clean/aseptic procedures, after body fluid exposure/risk, after touching a patient, and after touching the patient's surroundings ⁽³⁾.

Multidisciplinary HH improvement programs must include the gold standard of HH compliance monitoring. As a result, researching HH behaviour among HCWs is crucial for managing HAIs and organising future HH campaigns ⁽⁴⁾.

This study aimed to assess HH compliance among HCWs at inpatient departments NLI, Menoufia University.

PATIENTS AND METHODS

This cross-sectional study was conducted in different departments' outpatients of NLI, including Surgery, Pediatrics, and Internal medicine departments. Data were collected from May to the July 2023.

On the day of the observation, the observer chose the HCWs and the observation time at random. Utilised was an observational WHO checklist designed to look for HH compliance. It was divided into two portions. The **first part** listed the sociodemographic details of the HCWs, including department, ward, age, and sex.

Utilising an observational checklist of a "HH opportunity" comprised the **second part** of the checklist. This involved practicing HH prior to touching a patient, prior to the aseptic procedure, following the risk of body fluid exposure, following the touching of objects in the patient's surroundings, and following the touching of a patient.

The number of HH actions and opportunities were documented. Throughout the observation time, the observer remained in the wardroom or attended the major round, counting all HH acts and HH chances in accordance with the WHO's "five moments for hand hygiene".

When the observation began, the observer introduced herself to the attending health-care workers who were in charge of patient care, acquired consent, and collected data.

Ethical approval: The Scientific Council of Community Medicine of the NLI, Menoufia University, accepted the study's protocol. The NLI Administration granted authorization. Prior to observation, informed consents were obtained. Only the study team had access to the anonymous data, which was maintained in the strictest of confidence. The Helsinki Declaration was followed throughout the study's conduct.

Statistical analysis

Version 26.0 of IBM SPSS Statistics for Windows was used to analyse the data. All data were presented using descriptive statistics, including mean ± standard deviation, frequency, and percentage. The number of HH activities seen in accordance with the WHO's "five moments for hand hygiene" divided by the total number of HH opportunities observed, given as a percentage ⁽⁵⁾, was used to compute the HH compliance rate.

RESULTS

Observations of HH compliance were conducted from May to July 2023 over a monitoring period of 90 days. A total of 672 direct observations related to HH opportunities were noted for three departments at NLI, Menoufia University (Internal medicine, Pediatric and Surgery departments).

Table (1) showed the mean age for the HCWs that was 26.59 ± 3.26) years. The maximum age of the nurses was 35 years, and the minimum age was 21 years. Regarding gender, 49 (49%) nurses were males and 51 (51%) of them were females. Results revealed that 40 (40%) of the HCWs were working at Internal Medicine Department while 30 (30%) were working at Pediatric and Surgery Departments.

Table (1): Socio-demographic data of HCWs at NLI, of Menoufia University (n=100)

Demographic characteristics	HCWs (n=100) No. (%)
Gender	
Male	49 (49%)
Female	51 (51%)
Age (years)	
Min-max	21-35
Mean±SD	26.59(±3.26)
Department	
Internal medicine	40 (40%)
Surgery	30 (30%)
Pediatric	30 (30%)

Regarding HH compliance at different NLI inpatients, HH compliance was the highest among HCWs of hepatobiliary Surgery inpatients (37.5%) compared to hepatobiliary Pediatric (31.25%) and hepatobiliary Internal Medicine inpatients (28.1%) (Tables 2 & 3). Regarding HH compliance of HCWs at different NLI inpatients, nurses had higher compliance rate compared to doctors in Hepatobiliary Surgery (39.58% vs. 31.25%), Hepatobiliary Pediatric (33.3% vs. 25%) and Hepatobiliary Internal Medicine inpatients (29.2% vs. 25%) (Tables 2 & 3). Regarding HCWs, doctors at Hepatobiliary Surgery inpatients showed higher HH compliance (31.25%) compared to Hepatobiliary Internal Medicine and Hepatobiliary Pediatric inpatients (each 25%). Also, nurses at Hepatobiliary Surgery inpatient showed higher HH compliance (39.58%) than Hepatobiliary Pediatric and Hepatobiliary Internal Medicine (33.3% vs. 29.2%) (Tables 2 & 3).

Table (2): HH compliance by profession category at NLI H.B. Internal medicine inpatient

Departments inpatient	Profession	HH opportunity	HH action	HH compliance %
Hepatobiliary Internal medicine	Doctors	16	4	25%
	Nurses	48	14	29.2%
	HCWs	64	18	28.1%

Table (3): HH compliance by profession category at NLI H.B pediatric inpatient and surgery inpatient

Departments inpatient	Profession	HH opportunity	HH action	HH compliance %
Hepatobiliary pediatric	Doctors	16	4	25%
	Nurses	48	16	33.3%
	HCWs	64	20	31.25%
Hepatobiliary surgery	Doctors	16	5	31.25%
	Nurses	48	19	39.58%
	HCWs	64	24	37.5%

DISCUSSION

One of the main causes of morbidity and death is HAIs. They come with extra expenses for diagnostic and treatment procedures, on top of what the patient's underlying illness currently costs. Surgical, outpatient, chronic, and long-term care institutions are among the health care settings where HCAs can occur ⁽⁶⁾.

One of the main risk factors for HCAs is the spread of infectious organisms by healthcare workers. One of the fundamental safety measures for a successful HCAs control programme is hand hygiene. Anybody providing direct or indirect patient care should be aware of HH and capable of providing it how and when it is needed ⁽⁷⁾.

In low- and middle-income nations, where infection rates are comparatively higher due to inadequate infection control procedures, inappropriate use of scarce resources, understaffing of healthcare facilities, and overcrowding of hospitals, HAIs constitute a significant cause of avoidable morbidity and mortality ⁽⁸⁾.

The results showed that 51% of participants were females, and 49% of them were males. This comes in accordance with **Umuhoza et al.** ⁽⁹⁾ who reported that HCWs varied in age from 25 to 48 years old, with a mean age of 31.4 ± 5.8 years. Apart from that, male HCWs made up 16 (50%) and midwives and nurses made up 16 (50%) of the HCWs who answered the knowledge test. Regarding HH compliance at different NLI inpatients, HH compliance was the highest among HCWs of Hepatobiliary Surgery inpatients (37.5%) compared to Hepatobiliary Pediatric (31.25%) and Hepatobiliary Internal Medicine inpatients (28.1%). Regarding HH compliance of HCWs at different NLI inpatients, nurses had higher compliance rate compared to doctors in Hepatobiliary Surgery (39.58% vs. 31.25%), Hepatobiliary Pediatric (33.3% vs. 25%) and Hepatobiliary Internal Medicine inpatients (29.2% vs. 25%). Regarding HCWs, doctors at Hepatobiliary Surgery inpatients showed higher HH compliance (31.25%) compared to Hepatobiliary Internal Medicine and Hepatobiliary Pediatric inpatients (each 25%). Also, nurses at Hepatobiliary Surgery inpatient showed higher HH compliance (39.58%) than in Hepatobiliary pediatric and Hepatobiliary Internal Medicine (33.3% vs. 29.2%) inpatients.

This comes in accordance with **Elseesy et al.** ⁽¹⁰⁾ who reported that nurses had a higher compliance than doctors. Additionally, **Elia et al.** ⁽¹¹⁾ found that nurses (15.83%) were more cooperative than doctors (11.3%) and HCWs (12.15%). Our results disagree with **Abalkhail et al.** ⁽¹²⁾ who reported that Compared to nurses (11.9%), physicians had a higher HH compliance rate (30.2%). Also, our results contrast with **Lamping et al.** ⁽¹³⁾ who reported that there were no discernible differences between doctors' and nurses' self-reported compliance.

CONCLUSION

In conclusion, HH compliance of HCWs at different inpatient departments was low. One significant element influencing how HH practices before and after patient encounter is education. Further studies with large numbers of participants need to be conducted for better assessment.

Conflict of interest: None.

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