



Healthcare staff's attitude on hand hygiene and exposure to contaminated materials

Healthcare staff's attitude on hygiene

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Abstract

Aim: Healthcare staff may be exposed to many risks as part of their profession. Infection control and prevention measures aim to reduce risks to the hospital and healthcare staff. This study evaluated knowledge and attitudes of healthcare staff for hand hygiene and exposure to contaminated materials. Material and Method: The descriptive study was conducted among healthcare staff who volunteered to participate. Data were obtained using survey forms covering subject-related knowledge and attitudes of the healthcare staff. The study was conducted with 85 participants. Results: In this study, the numbers of times health care workers applied hand hygiene were grouped as "50 and below" and "over 50," to indicate fewer or more than 50 times each day, and the rates were detected as 49% and 51% respectively. When asked which occupation group complied with hand hygiene most often in the work unit, the answers were as follows: nurses 81%, physicians 11%, and cleaning staff 8%. The most common answer to the question about the primary purpose of washing hands was to protect oneself (66%), followed by prevent transporting microorganisms (34%). Discussion: It is not easy to systematically measure belief and compliance; however, it is important and useful to evaluate the training needs of healthcare staff with questionnaires and observations at certain intervals and to organize in-service training programs continuously. This study has shown that there are still details to be corrected in terms of practices and attitudes despite training provided, that it is necessary to cover these details in training, and that the continuity of these studies should be ensured.

Keywords

Healthcare Staff's; Hand Hygiene; Contaminated Materials

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Introduction

Healthcare staff may be exposed to many risks as part of their profession. The most important of these risks are infections and percutaneous injuries. Age, immune system, and invasive procedures are contributing factors, while inadequacy in following infection control and prevention measures, less compliance with hand hygiene, use of the wrong gloves, incompetency of healthcare professionals, and lack of training are the factors given by healthcare staff (1). Infection control and prevention measures aim to reduce risks to the hospital and healthcare staff (1, 2). The standard measures have two objectives: to protect healthcare staff from percutaneous injuries and to prevent transmission of hospital infections (2, 3). Infectious agents are transmitted to the patient endogenously or exogenously, and the hands of the healthcare staff and the patient play an important role in the transmission. Hand hygiene is a simple procedure that is considered critical in the control of hospital infections, but is insufficiently complied with. In the studies conducted, it has been emphasized that the healthcare staff's level of complying with hand hygiene is low (4, 5, 6, 7).

Healthcare professionals are at risk for diseases such as hepatitis B, hepatitis C, and human immunodeficiency virus (HIV) that may lead to significant mortality and morbidity upon exposure to infected blood and body fluids due to professional reasons (8). Transmission of these pathogens to healthcare staff is generally via percutaneous or mucosal contact with patients' infected blood and body fluids (9). It has been reported that equipment contaminated by the personnel during medical intervention with contaminated hands and clothes is one cause of transmission within the hospital (10).

The inadequacies of healthcare staff's knowledge on hand hygiene and application of hand hygiene are due to a variety of reasons, such as the staff's general incapability of distinguishing between situations, the workload, less compliance with procedures, insufficient personnel, and inadequate training.

This study provides some details on issues related to the hospital healthcare staff's lapses in compliance with hand hygiene procedures and exposure to contaminated materials, and aims to evaluate the staff's knowledge and attitudes about this issue, with the goal of improving related measures.

Materials and Method

The descriptive study was conducted among healthcare staff, who provide patient care and treatment services, and cleaning staff working in a tertiary hospital who volunteered to participate in the survey study. Survey forms covering subject-related knowledge and attitudes of the healthcare staff were used to obtain data. The participants were informed before the study and were not required to participate. The study was conducted with 85 participants. The survey form contained questions to determine the participants' socio-demographic attributes, years of experience, and their knowledge of and attitudes about hand hygiene. The SPSS 20.0 statistical program was used to analyze the data.

Results

85 persons, including 18 nurses (21%), 61 cleaning staff (72%) and 6 emergency medical technicians (7%), participated in the

study. The participants consisted of 68 females (80%) and 17 males (20%), with an average age of 30 (ages 20-47). The average experience was 7 years (1-24 years), and educational status was as follows: primary school 5%, secondary school 4%, high school 33%, and university 59%. 31 persons (36%) were working in the intensive care unit, while 54 persons (64%) were working in other units. The summary of demographic data is provided in Table 1.

Table 1. Demographic attributes

Number of participants n (%)	85 (100%)
Average age (years)	30 (20-47 years)
Gender n (%)	68 female (80%), 17 male (20%)
Occupational experience	7 (1-24 years)
Occupation group	
Nurse	18 (21%)
Cleaning staff	61 (72%)
Emergency medical technician	6 (7%)
Working unit	
Intensive care unit	31 (36%)
Other	54 (64%)
Educational status	
Primary school	4 (5%)
Secondary school	3 (4%)
High school	28 (33%)
University	50 (59%)
Total	85 (100%)

Discussion

It has been shown that studies for developing positive hand hygiene behaviors can yield more successful results by focusing on specific groups and taking socioeconomic and cultural identifiers into consideration (11, 12). Curtis et al. emphasized that studies for developing hygiene should determine current hygiene behaviors and behaviors posing a risk for health, and clearly specify the behaviors where change is desired. They also highlighted that hygiene behaviors have a complex structure including social aspects, although their basic role in preventing infectious diseases are well known. Thus, it's important to identify specific behaviors that pose a health risk and detect the motives underlying these behaviors (13).

In a research study conducted with 6854 people by the Turkey Ministry of Health, it was found that hands were not washed after shaking hands with people (33.4%), before using the toilet (27.5%), after giving and taking money (25.3%), and before touching a sick person (25.1%) (14).

In this study, we found deficiencies in the knowledge and attributes of healthcare professionals in our hospital, determined some related details, and evaluated the awareness and attributes of personnel.

It has been shown that hospital infections can be reduced by approximately 50% by complying with hand hygiene (15, 16). Having systematically reviewed 96 studies on compliance with hand hygiene guidelines in patient care, Erasmus et al. found that the healthcare staff rates of complying with hand hygiene is 40% and that research and training for increasing compliance with hand hygiene is required (17). The World Health Organization proposed using multifaceted strategies to increase compliance with hand hygiene and started guidelines and strategies for national campaigns (18).

Table 2. Some attributes of the participants on hand hygiene and exposure to contaminated materials

Total Participants	n = 85 (%)
How many times a day do you wash your hands?	
Over 50	51%
50 and below	49%
Is wearing gloves fully protective?	
Yes	20 (23%)
No	65 (77%)
Is hand hygiene necessary after taking gloves off?	
Yes	83 (98%)
No	2 (2%)
The primary purpose of washing hands is to:	
Protect oneself	56 (66%)
Prevent conveying microorganisms	29 (34%)
Is the use of hand sanitizers effective?	
Yes	49 (58%)
No	36 (42%)
Are hand sanitizers adequate in case of visible contamination?	
Yes	11 (13%)
No	74 (87%)
Is it necessary to wash hands when passing from one patient to the other?	
Yes	82 (97%)
No	3 (3%)
Is it necessary to change gloves when passing from one patient to the other?	
Yes	85 (100%)
No	0 (0%)
Is hand hygiene necessary when contacting different body parts of the same patient?	
Yes	73 (86%)
No	12 (14%)
Is it necessary to change gloves when contacting a body part of a patient after another body part of the same patient?	
Yes	71 (86%)
No	14 (14%)
What is the occupation group that complies with hand hygiene the most in your work unit you work?	
Physician	7 (8%)
Nurse	69 (81%)
Cleaning staff	9 (11%)
Have you ever had contact with patients' body fluids, such as blood, urine etc. during your professional career?	
Yes	68 (80%)
No	17 (20%)
Have you ever been exposed to percutaneous injury during your professional career?	
Yes	33 (39%)
No	52 (61%)
Which reason can be related to the exposure?	
Carelessness or moving quickly	46 (79%)
Insufficient personnel	7 (12%)
Insufficient materials	4 (7%)
Ignorance	1 (2%)
Lack of knowledge	0 (0%)
Have you ever contracted an infectious disease during your professional career?	
Yes	-
No	85 (100%)

In this study, the number of times per day hand hygiene was applied was grouped as “50 and below” and “over 50,” and the rates were detected as 49% and 51%, respectively. When asked which occupation group most often complied with hand hygiene in the work unit was asked, the answers were as follows: nurses 81%, physicians 11%, and cleaning staff 8%. Similar to other studies, the compliance level was found to be high in nurses. The study by Rosenthal et al. covering Argentina, Brazil, Colombia, India, Mexico, Morocco, Peru, and Turkey stated that nurses had the highest compliance rate of hand hygiene among occu-

pation groups (19). Similarly, it was found in another study that the rate of complying with hand hygiene if body fluids splashed was 80% for doctors, 84% for nurses, and 62% for healthcare staff (20). However, many studies show that healthcare staff rates of complying with hand hygiene are low (19).

Bargellini et al. explained in their study that nursing students are more sensitive to hand hygiene than medical faculty students because nursing students receive training on this issue as soon as they start university education, while this training is postponed and not focused enough for medical faculty students (21).

In the study of Artan et al., when the healthcare professionals were asked which behaviors they used for protecting themselves from infections while providing services, 38.1% stated wearing gloves, 26.3% wearing masks, and 21.2% washing their hands (22).

In our study, the question about the primary purpose of washing hands was answered: to protect oneself (66%) and to prevent transporting microorganisms (34%). The rate of participants thinking that wearing gloves was not fully protective was 77%, and the rate of participants thinking that hand hygiene was necessary after taking gloves off was 98%. In Pittet's study the rate of participants stating that it was necessary to apply hand hygiene after pulling off gloves was determined as 30% (5). We believe the high rate in our study was due to training. The rate of participants reporting that it is necessary to change gloves when passing from one patient to the other was 100%. The rate of participants reporting that it is necessary to change gloves when contacting a body part of a patient after another body part of the same patient was 86%. In another study, 84% reported the importance of hand hygiene in protection from hospital infections, and 86% stated that alcohol-based hand sanitizers prevent infections (22). In our study, the rate of participants answering that the use of hand sanitizers is adequate was determined to be 58%, while the rate of participants answering that hand sanitizers are not adequate in cases of visible contamination was 13%. In another study made with healthcare staff, 39.3% stated that they washed hands before touching the patient, 31.4% after touching the patient, 32.1% before each procedure they carried out, and 14.1% after each procedure they carried out, while 83.1% stated that they used soapy water to wash their hands (23). In our study, our results indicated areas of positive rates of knowledge and attributes related to hand hygiene. Our next step is to design interventions and training, guided by the areas that the study indicated were not adequate, to address improvement needs.

Other significant situations for healthcare staff are percutaneous injuries and exposure to contaminated materials. Among healthcare staff worldwide, 2.5% of HIV cases and 40% of hepatitis B and hepatitis C cases are due to professional exposure (18). It has been determined that exposures by nurses and persons working in surgical units are higher, and, to a large extent, injuries occur during the establishment of vascular access and injections. Rather than focusing on a lack of training, it was emphasized that the issue should be reviewed again in terms of working conditions and the changes of attitudes and behaviors that healthcare staff need to develop (24).

In our study, the overall rate of exposure to percutaneous injury during the participants' professional careers was detected as 39% and contact with patients' body fluids as 80%. No occupational infectious disease during their professional careers was detected. In another study, it was detected that 33.7% of healthcare staff had an injury with a needle that contacted a patient (23). The majority of injuries observed in cleaning staff, another group at risk, occur during the collection of waste (25, 26).

The study by Korkmaz et al. reported the frequency of percutaneous injuries in nurses with intensive workload as being a result of: the limited number of nurses; their haste in carrying out their duties; their responsibility for multiple procedures, such as care, treatment, bloodletting, injection, collection of materials, and cleaning; long working hours; and at times, the hasty and aggressive behaviors of patients (24). In this study, factors related to the reasons for exposure were reported as carelessness or working quickly 79%, inadequate personnel 12%, inadequate materials 7%, ignorance 2%, and lack of knowledge 0%. These results revealed again the significance of practical aspects and other factors, and the necessity for developing related measures, although results indicate that knowledge and training are adequate.

Injuries may be prevented by adopting safe working practices and using personal protective equipment. Analysis of factors that cause infection of healthcare staff with blood and body fluids, protective measures for preventing infection, and information on specific infections have an important role in the development of prevention programs (27). In his study, Steenhoff concluded that training interventions are generally successful in the development of good hygiene and aseptic techniques; however, these practices are generally not sustainable (28). Changing human behaviors is a difficult and uncertain process. Curtis emphasized the requirement of basing the efforts of programs on a limited number of messages, the importance of which have been proven in terms of public health, in order to avoid waste of resources and to reach their objectives (13).

It would be useful to detect perceptions underlying individuals' attitudes and behaviors and to correct mistakes and deficiencies. The health belief model argues that health-related behaviors of individuals are affected by beliefs, values, and attitudes. When problematic beliefs and attitudes are detected, the healthcare training to be provided or treatment methods to be applied to this person could be determined more appropriately. Although there are many studies of healthcare staff knowledge of and compliance behavior with hand hygiene, their perceptions and beliefs have not been adequately studied (29). It is not easy to systematically measure belief and compliance; however, it is important and useful to evaluate the training needs of healthcare staff with questionnaires and observations at certain intervals and to organize continuing in-service training programs. This study has shown that there are still details to be corrected in terms of practices and attitudes despite training having been provided, that it is necessary to cover these details in training, and that the continuity of these studies should be ensured.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

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Conflict of interest

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