



**Hand hygiene knowledge among health workers at Benghazi medical  
center and Al-Jala teaching hospital**

مدى المعرفة بإصباح اليدين لدى العاملين الصحيين في مركز بنغازي الطبي  
ومستشفى الجلاء التعليمي

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**Abstract:**

The hands of healthcare workers are the most common vehicle for the transmission of microorganisms, that is why, microorganisms can spread throughout a health care environment within a few hours. The aim of this work is to assess the hand hygiene knowledge among the health care workers in two major hospitals in Benghazi city. A cross sectional approach carried out on health care personnel working in a different departments of Benghazi medical center and Al-Jala teaching hospital in different times during September 2019.

There are some misconceptions about hand hygiene among health worker despite their profession or work experience which reflect their inadequate knowledge, as just 40.4% of our study sample have good knowledge. This study addresses the need to build the capacity of health care workers on standard precaution either through continuous health

education programs or regular training or sponsor for workshop and seminars.

**Keywords:** Hand hygiene; knowledge; COVID-19; health workers.

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## Introduction

Hand Hygiene is a general term refers to any action of hand cleaning relates to removal of the visible soil and killing or removal of transient microorganisms from the hands. The hands of healthcare workers are the most common vehicle for the transmission of microorganisms, that is why, they considered as one of the highest risk people to have COVID-19.

Every person involved in patient care, healthcare worker or otherwise, should be able to accurately perform hand hygiene and at the appropriate time. World Health Organization (WHO) has taken an incredible approach called "My Five Moments for Hand Hygiene" which defines the key moments when health-care workers should perform hand hygiene <sup>(1)</sup>.

A study done at Abha health district in Saudi Arabia during 2013 – 2014 which included 478 primary health care workers revealed gaps in health workers knowledge regarding hand hygiene, also found that

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about 26% of the sample never received formal training in hand hygiene <sup>(2)</sup>.

Another study conducted by Abou El-Enein and El-Mahdy where they assess the knowledge and practice of hand hygiene among the nurses in the dialysis unit showed that none of them received any training or washed their hands before and after patients caring. Furthermore, few of them had knowledge about the importance of hand hygiene <sup>(3)</sup>.

## **Objectives**

The aim of this work is to assess the hand hygiene knowledge among the health care workers in both Al-Jala teaching hospital and Benghazi medical center.

## **Methodology**

A cross sectional approach carried out on health care personnel working in a different departments of Benghazi medical center and Al-Jala teaching hospital in different times. The study subjects are all health care workers; Libyans and non-Libyans, both sexes, available at the time of data collection. This study was conducted in September 2019.

The questionnaire used was adapted from the WHO hand hygiene knowledge questionnaire for health-care workers and was distributed in print formats. The questionnaire consists of two parts; a demographics section that elicited information on age, gender, profession, department and experience years. The second section which examine hand hygiene knowledge contains seven multiple choices questions and fourteen yes/no formatted questions.

Excluding criteria was either; not present at the time of data collection, refuse to participate or uncompleted questionnaires. After collecting the responses, data were decoded and analyzed using SPSS 22<sup>th</sup> edition.

## **Ethical Issue**

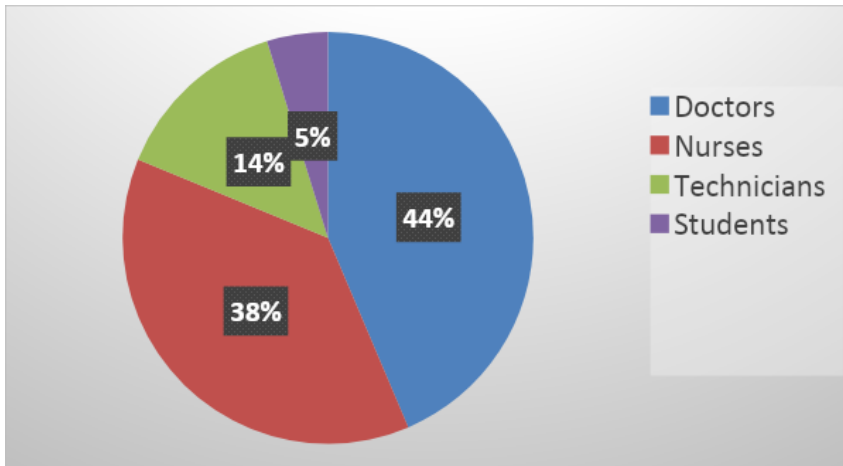
This study was approved by the research ethics board (REB) at Benghazi medical center.

## **Results**

There was a total of 250 study participants; 68 males and 182 females. Most of them were between 20 – 30 years old (50.8%) and they have been divided according to their professional (figure 1). On the other hand, 57.6% of the sample were working at Benghazi medical center while the rest were working at Al-Jala teaching hospital.

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**Figure 1: Sample divisions according to their profession.**

The responses of the participants to the yes/no formatting questions of the survey are provided in table 1. Regarding to the meaning of hand hygiene approximately 70% of study sample have the correct answer (figure 2). Although 46% of participants have a wrong believe that washing hands is the appropriate type used before patient examination or giving injection.

**Table 1: The responses of the participants to the yes/no formatting questions of the survey**

Questions	Yes n(%)	No n(%)
1- Did you receive a formal training on hand hygiene in the last five years?	112 (44.8%)	138 (55.2%)
2- Hand hygiene is not necessary if gloves are worn?	30 (12%)	220 (88%)
3- Hand washing before touching a patient prevents transmission of germs to the patient?	217 (86.8%)	33 (13.2%)
4- Hand washing immediately before a clean procedure of a patient prevents transmission of germs to the patient?	201 (80.4%)	49 (19.6%)
5- Hand washing after touching a patient or exposure to body fluid and surroundings area of patient can prevent transmission of germs health-care workers?	217 (86.8%)	33 (13.2%)
6- Hand rubbing is more rapid for hand cleansing hand washing?	195 (78%)	55 (22%)
7- Hand rubbing causes skin dryness more than hand washing?	202 (80.8%)	48 (19.2%)
8- Hand rubbing is more effective against germs handwashing?	193 (77.2%)	57 (22.8%)
9- Alcohol-based hand rubs are indicated when hands are visibly soiled?	140 (56%)	110 (44%)

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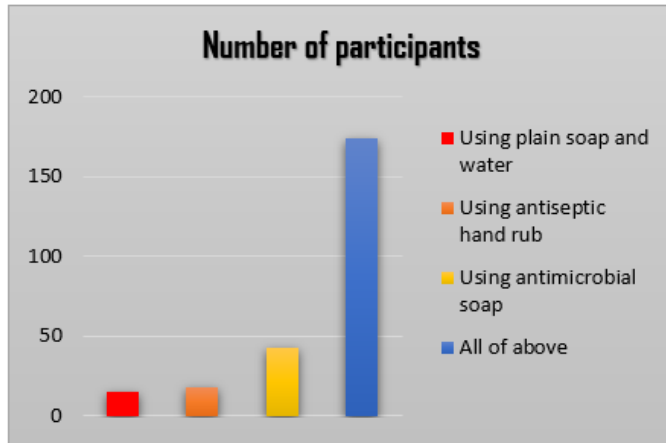
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10-Alcohol-based hand rubs have good antimicrobial activity against Viruses and Fungi?	181 (72.4%)	69 (27.6%)
11-Alcohol-based hand rubs have good antimicrobial activity against Bacterial spores?	183 (73.2%)	67 (26.8%)
12-Alcohol-based hand rubs reduce bacterial count on the hands of health-care personnel more effectively than plain soaps?	196 (78.4%)	54 (21.6%)
13-Alcohol-based hand rubs require less time to kill germs than traditional handwashing?	205 (82%)	45 (18%)
14-Alcohol-based hand rubs have been demonstrated to cause less skin irritation and dryness than handwashing using soap and water?	137 (54.8%)	113 (45.2%)

Only 42% (n=105) people knew that the minimum time required by alcohol-based hand rub to kill germs on hands is 20 seconds. And 58% (n=145) of the participants did not know the minimum time required by the alcohol-based hand rub to kill the germs on hands. When we asked the participants about the most source of germs responsible for hospital community acquired infections, we found that

60% of them have a wrong believe that the most source responsible is hospital environment.



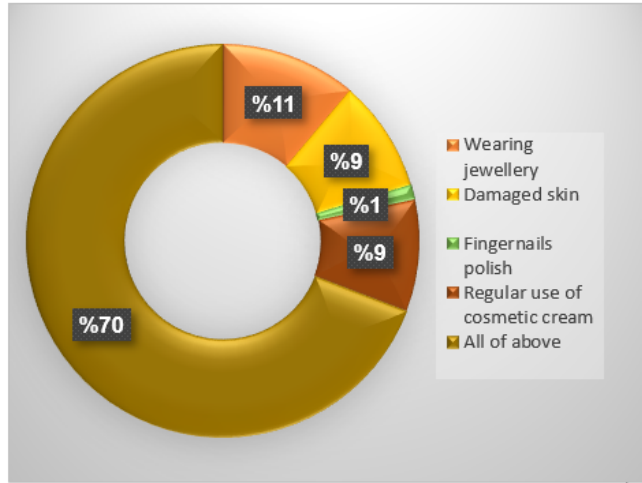
**Figure 2: Shows the response about hand hygiene meaning**

Figure 3 shows the responses of the participants to the practices associated with the increase of colonization of harm germs on hands. In the next graphs (figure 4 & 5) we demonstrate the relationship between knowledge score with both profession and work years' experience respectively.

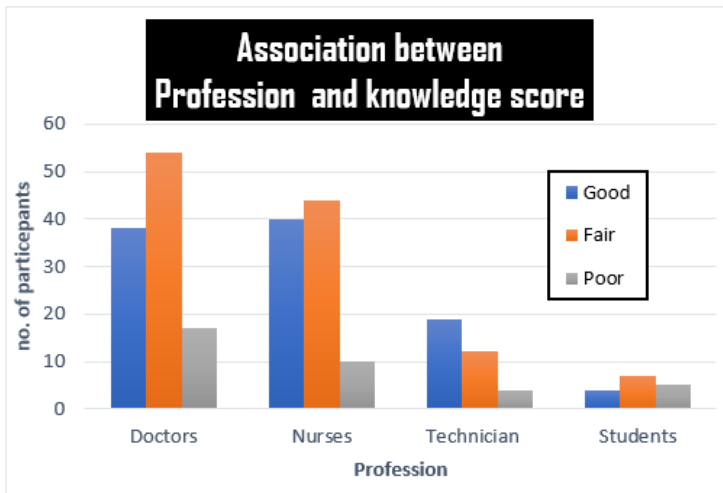


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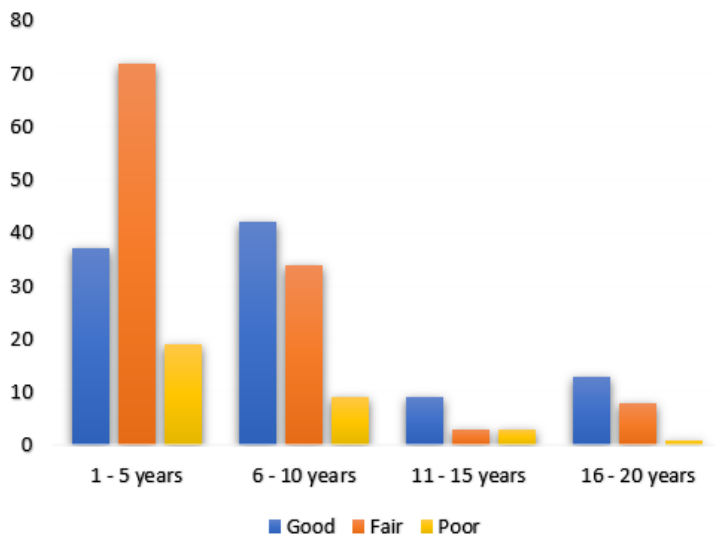
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**Figure 3:** Shows the responses of the participants to the practices associated with the increase of colonization of harm germs on hands.



**Figure 4:** Association between profession and knowledge score.



**Figure 5: Association between experience years and knowledge score.**

## Conclusions

There are some misconceptions about hand hygiene among health worker despite their profession or work experience which reflect their inadequate knowledge, as just 40.4% of the study sample have good knowledge. Less than 45% of them did not have a formal training on hand hygiene. This study addresses the need to build the capacity of health care workers on standard precaution either through continuous health education programs or regular training or sponsor for workshop and seminars. This is the most effective and long-lasting means to improve health workers knowledge about hand hygiene, especially in COVID-19 era.



## **Acknowledgements**

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