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Original article

Practice of Standard Precautions among Health Care Workers in the Blood Bank at Maitiga Hospital, Tripoli, Libya

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ABSTRACT

Background and aims. *Healthcare quality is greatly influenced by infection prevention practices and control. Since there are few previous studies from Libya evaluated the infection control practices in the blood banks of Libya. This study was aimed to assess the practice of standard precautions among health care workers (HCWs) in the blood bank at Maitiga hospital, Tripoli, Libya.* ***Methods.*** *A descriptive cross-sectional study was conducted from March to April 2022 at the blood bank of Maitiga hospital. A self-administered questionnaire assessing the practice of standard precautions was used to collect the data and analysis was done by using SPSS version 20.* ***Results.*** *A total of 61 respondents out of 110 HCWs at Maitiga blood bank were enrolled in this study. The respondents were doctors, nurses and laboratory technicians of which 15(24.6%) were males and 46(75.4 %) were females. The main age group of the participants was 25 - 29 years. All medical staff who participated in current study were applied hand hygiene after finishing and were used safety box to dispose the sharp objects. Only 11(18%) of them applied hand hygiene before start working, 45(73.8 %) of them cleaned surfaces before and after work, 53 (86.9%) wear appropriate personal protective equipment (PPE), and 36(59 %) know how to separate the medical wastes. On the other hand, 18(29.5 %) of medical staff eat or drink at work area.* ***Conclusion.*** *In general, practice of standard precautions was good among HCWs at Maitiga blood bank. Most of the HCWs prefer to use hand hygiene after work, use of personal protective equipment, safe use and disposal of sharps, and routine environmental cleaning. However, practice of waste management was not satisfied.*

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INTRODUCTION

Health staffs working in blood banks and transfusion services are commonly at risk of exposure to blood and body fluid during their day-to-day activities. Studies have shown that there is a 0.3%-0.5% occupational risk of infection with HIV after percutaneous exposure to HIV-contaminated blood [1,2]. Implementation of infection control standards in blood banks and careful adherence to these standard measures are important to protect medical staff and patients from blood-borne infections. Standard precautions consist of hand hygiene before and after every episode of patient contact, use of personal protective equipment, safe use and disposal of sharps, routine environmental cleaning, reprocessing of reusable medical equipment and instruments, respiratory hygiene and cough etiquette, aseptic non-touch technique, waste management and appropriate handling of linen [3,4]. Even though, some studies have shown that there is selective adherence and non-adherence to standard precautions in daily medical practice and these differences in knowledge and adherence by health care workers may be influenced by their varying type of training [5]. Changing behavior requires knowledge of the factors that can influence HCWs' compliance with standard precautions and implementing programs and preventive actions that contribute to the avoidance of occupational exposure [6]. The aim of this study was to assess the knowledge and practices

of standard precautions among HCWs in Maitiga blood bank, where studying HCWs behavior plays an important role forward to plan programs that improve and promoting compliance with standard precautions in all public health institutions in Libya, especially in the absence of sufficient data in this area.

METHODS

Study design and setting

A cross sectional descriptive study was conducted from March to April 2022 at the blood bank of Maitiga Hospital, Tripoli, Libya. It was selected randomly which is one of the biggest blood banks out of five large blood banks in Tripoli Libya. A self-administered questionnaire assessing the practice of standard precautions was used. All participants voluntarily took the survey and verbal consent obtained. The confidentiality of the data has been kept at all level of the study.

Inclusion and exclusion criteria

All HCWs at the blood bank of Maitiga hospital who agree to participate in the survey were included in this study.

Data collection procedure

Data was collected using pre-validated questionnaire in Arabic language. The questionnaire was used to obtain the relevant information from the enlisted laboratory. The survey questionnaire was composed of a number of questions highlighted different aspects of biosafety and biosecurity practices, In addition, basic questions regarding personal protection equipment (e.g., hand washing, wearing of hand gloves and lab coats during the work in the laboratories, wearing of mask, vaccination), and questions about routine laboratory practices such as, unsafe work practices (e.g., eating or drinking in laboratories, methods of disinfection, specimen handing collection and processing). Furthermore, the questionnaire comprises questions related to laboratory facilities such as hand washing sink, questions regarding procedures for disposal of hazardous wastes, for instance sharp wastes, and liquid biological waste.

Statistical analysis

Data were analyzed by using IBM SPSS Statistics for Windows, version 20 (IBM Corp., Armonk, NY, United States). Descriptive statistics were used to present all results.

RESULTS

A total 61 respondents out of 110 HCWs at Maitiga blood bank, were enrolled in this study, giving a response rate 55.4%. The respondents were doctors 3 (4.9%), nurses 11 (18%) and laboratory technicians 47 (77%). A bout 15 (24.6%) of participants were males and 46 (75.4 %) females, most of them at the age group 25 - 29 years. The results revealed that 14 (23%) of HCWs had more than 6 years' practice experience, 38 (62.3%) of participants were vaccinated against COVID and only 19 (31.1 %) had hepatitis B vaccine (Table 1).

Table 1: Socio-demographic characteristics of HCWs, Maitiga blood bank, 2022

Character	Number (N)	Percentage (%)
Gender		
Male	15	24.6 %
Female	46	75.4 %
Age		
20- 24 years	7	11.5 %
25-29 years	29	47.5 %
≥ 30 years	25	41 %
Occupation		
Doctors	3	5 %
Nurses	11	18 %
Laboratory technicians	47	77 %
Working experience		
1 - 3 year	39	63.9 %
4 - 6 year	8	13.1 %
> 6years	14	23 %

COVID vaccination		
Yes	38	62.3 %
No	23	37.7 %
Hepatitis B vaccination		
Yes	19	31.1 %
No	42	68.9 %

Regarding HCWs adherence to standard precautions, all medical staff participated in current study were applied hand hygiene after finish working and were used safety box to dispose the sharp objects. Only 11 (18%) of HCWs were applied hand hygiene before start working, 45 (73.8 %) of them clean surfaces before and after work, 53 (86.9%) wear PPE and 36 (59 %) separate the waste. On the other hand, 18 (29.5 %) of medical staff eat or drink at work area (Table 2).

Table 2. HCWs adherence to standard precautions, Maitiga blood bank, 2022

Character	Number (N)	Percentage (%)
Wearing gloves		
Yes	48	78.7 %
No	13	21.3 %
Wearing mask		
Yes	51	83.6 %
No	10	16.4 %
Wearing other PPE		
Yes	53	86.9 %
No	8	13.1 %
Wash hands before start working		
Yes	11	18 %
No	50	82 %
Eat or drink at work area		
Yes	18	29.5 %
No	43	70.5 %
Clean surfaces before and after work		
Yes	45	73.8 %
No	16	26.2 %
Apply waste separation		
Yes	36	59 %
No	25	41 %

DISCUSSION

Infection control programme in any healthcare facility has five basic components: hand hygiene, use of personal protective equipment, prevention of sharp injuries, disinfection and sterilization, and waste disposal. This study surveyed HCWs at Maitiga blood bank in Tripoli to evaluate their practices with reference to these infection control components.

There is no clear policy requiring mandatory vaccination of Hepatitis B Virus for HCWs in Libya. Immunization of HCW against hepatitis B is strongly recommended by CDC, WHO as well as Libyan NCDC [7]. Results of this study revealed that 31.1 % of HCWs at Maitiga blood bank were vaccinated against hepatitis B virus. Similarly, in Egyptian study, about 33.3% of nurses in Alexandria university blood bank were HBV vaccinated [8].

In general, there was a positive attitude toward the use of standard precautions. It was encouraging to find that 100 % of the respondents reported that they adhered to safe disposal of used needles and sharps and other blood contaminated items, and also 100% of them applied hand hygiene after finishing work that was similar to study conducted in Afghanistan where higher adherence to use safety box observed (90.3 %) [1].

Blood bank activities generate a variety of clinical waste from blood contaminated cotton swabs to used syringes and blood samples which, if not disposed of properly, can lead to serious health outcomes for healthcare workers, waste handlers and the community [9]. Safe waste management and disposal is critical to control the spread of infection [10]. It was alarming in the present study that 29.5 % of medical staff in Maitiga blood bank ate and drank at work area and poorly practiced

regarding waste management, and only 59% of them were applied waste separation. A recent study from Pakistan also reported poor waste management in blood banks [9].
This study had some limitations. Firstly, with only a 55.4% response rate, there is a possibility of a selection bias among participants. Non-adherent HCWs to standard precautions are more likely not to take the survey. There was also a possibility of response bias as participants were likely to over-report their practices.

CONCLUSION

The current study suggests that current practices in Maitiga blood bank in Tripoli depart from infection control standards, particularly with reference to waste management. On the basis of these results, it is recommended that policy-makers and authorities give due consideration to the weaknesses identified in this study. Continuous monitoring of blood banks to evaluate their practices can help authorities to implement standards. Infection control guidelines must be designed and shared with blood banks in order to facilitate the adoption of standard infection control procedures to protect donors, patients, blood bank staff and the community.

Disclaimer

The article has not been previously presented or published, and is not part of a thesis project.

Conflict of Interest

There are no financial, personal, or professional conflicts of interest to declare.

REFERENCES

1. Fayaz S, Higuchi M, Hirosawa T, Sarker M, Djabbarova Z, Hamajima N. Knowledge and practice of universal precautions among health care workers in four national hospitals in Kabul, Afghanistan. The Journal of Infection in Developing Countries. 2014;8(04):535-542. doi:10.3855/jidc.4143
2. Bareki P, Tenego T. Assessment of knowledge, attitudes and practices of HIV post exposure prophylaxis among the doctors and nurses in Princess Marina Hospital, Gaborone: a cross-sectional study. Pan Afr Med J. 2018;30:233.
3. WHO. Standard Precautions in Health Care. [cited 6 June 2022]. Available from: https://www.who.int/publications/i/item/standard-precautions-in-health-care (last accessed 20 Oct 2022).
4. Kretzer D. Standard precautions (including hand hygiene and use of PPE). Policy. 2018 Jan 18. Available from: https://www.cdc.gov/oralhealth/infectioncontrol/summary-infection-prevention-practices/standard-precautions.html (Last accessed 20 Oct 2022).
5. Ndu A, Arinze-Onyia S. Standard precaution knowledge and adherence: Do Doctors differ from Medical Laboratory Scientists? Malawi Medical Journal. 2018;29(4):294. doi:10.4314/mmj.v29i4.3.
6. Efstathiou G, Papastavrou E, Raftopoulos V, Merkouris A. Factors influencing nurses' compliance with Standard Precautions in order to avoid occupational exposure to microorganisms: A focus group study. BMC Nurs. 2011;10:1. Published 2011 Jan 21. doi:10.1186/1472-6955-10-1.
7. Lewis JD, Enfield KB, Sifri CD. Hepatitis B in healthcare workers: Transmission events and guidance for management. World J Hepatol. 2015;7(3):488-497. doi:10.4254/wjh.v7.i3.488
8. Abou El Enein N, El Sherif A. Infection control practices in A University blood bank, Alexandria, Egypt. Journal of High Institute of Public Health. 2010;40(2):368-390. doi:10.21608/jhiph.2010.20610
9. Bibi S, Siddiqui T, Jafry S, Ahmed W. Infection control practices in blood banks of Pakistan. Eastern Mediterranean Health Journal. 2019;25(5):331-340. doi:10.26719/emhj.18.051
10. Padder A. Health Care Waste Management. International Journal of Trend in Scientific Research and Development. 2019;3(3):908-911. doi:10.31142/ijtsrd23109.