The Prevalence of injuries among Medical Waste Workers in Khartoum State Hospitals, Sudan (2013 – 2016)

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Received 18 Feb 2018, Revised 26 Mar 2018, Accepted 28 Mar 2018

Abstract

Eight hospitals with different specialties and different size were selected and 300 workers were involved in the research study. Specific questionnaire had been used including, general information, and Knowledge, Attitude and Practice (KAP) of the targeted group regarding workplace injuries. The main findings of the study were: 38% of the workers spent more than 10 years in the job, 41.7% of them were involved in this job without having training concerning their responsibilities. About 37% of workers injuries by needles during the work at the last 12 months, most needle stick reasons (86.4%) were during medical waste transportation.

Keywords: Medical waste, injuries, workers, Khartoum State

1. Introduction

Some investigators accept that, 5% of all HIV infections in Africa are due to unsafe injections, of which unsafe waste disposal a component is. Studies from developed countries have shown that, occupational exposure to waste may result in HBV infection. Recently a study from the UK report 40 incidents of sharps injuries associated with waste handling. Although no sero conversion occurred, two waste handlers required prolonged leave of absence with professional counseling for anxiety/stress disorder [1]. The present study was aimed at determining the prevalence of injuries among medical waste workers in Khartoum State Hospitals.
2. Problem Statement

Contain health-care waste on the microorganisms may be harmful and can injury patients treated in hospitals and health care providers and the public. Contribute to health-care activities to protect and restore health and save lives. However, what about the waste products that can be side effects that those activities? [2]. Impacts of infectious waste and sharps-For serious virus infections such as HIV/AIDS and hepatitis B and C. Health-care workers particularly nurses are at greatest risk of infection through injuries from contaminated sharps (largely hypodermic needles) [3].

3. Materials and methods

3.1. Study Area

This study is conducted at Khartoum State the capital of Sudan, which has 7 million capita, and about 48 governmental Hospitals and more Health Centers and other Private Hospitals. Khartoum State is one of the eighteen states of Sudan. Although it is the smallest State by area (22,142 km²), it is the most populous (5,274,321 in 2008 census). It contains the country's largest city by population [4]

3.2. Questionnaire

Using a questionnaire, about Knowledge, Attitude and Practice (KAP) among workers. Information on gender, age, education level, injuries rates and when happen, precautions take to reduce injuries and action taken when accident injuries

4. Results and Discussion

In this work, 36.3% of MWWs were stuck by needles in previous 12 months and this agreed with studies wide World mentioned serious diseases may develop in health-care personnel, waste handlers, patients and the general public. In any healthcare establishment, nurses and house-keeping personnel are the main groups at risk of injuries, annual injury rates are 1020 per 1000 workers. Highest rates of occupational injury among all workers who may be exposed to health-care waste are reported by cleaning personnel and waste handlers, the annual rate in USA is 180 per 1000. There are reported cases of staphylococcal bacteremia and endocarditis among housekeeping staff after a needle injury [5]

Figure 1: Distribution of medical waste workers who were stick by needles during the work in last 12 months ago, in Khartoum State Hospital²s, 2013 – 2016.
In 2007, the World Health Organization (WHO) estimated annual global needle stick injuries at 2 million per year, and another investigation estimated 3.5 million injuries yearly. The European Biosafety Network estimated 1 million needle stick injuries annually in Europe [7].

The US Occupational Safety and Health Administration (OSHA) estimates 5.6 million workers in the healthcare industry are at risk of occupational exposure to blood-borne diseases via percutaneous injury [8]. The World Health Organization estimated that in 2000, 66,000 hepatitis B, 16,000 hepatitis C, and 1,000 HIV infections were caused by needle stick injuries, [9].

**Figure 2:** Times of sticks among medical waste workers in previous 12 months ago, in Khartoum State Hospitals, 2013 – 2016

**Figure 3:** Reasons of needles sticks among medical waste workers during the work in previous 12 months, in Khartoum State Hospitals, 2013 – 2016
**Figure 4:** Sticks by other sharps among medical waste workers in last 12 months ago, in Khartoum State Hospitals, 2013 – 2016

**Figure 5** Knowledge of needle stick hazards among medical waste workers, in Khartoum State Hospitals, 2013 – 2016

**Figure 6:** Precautions taken to reduce injuries among medical waste workers, in Khartoum State Hospitals, 2013 – 2016
Figure 7: Types of precautions taken to reduce injuries among medical waste workers, in Khartoum State Hospitals, 2013 – 2016

The study showed that, most of medical waste workers, 76.1% know the needle stick can transmit hepatitis B and HIV – (figure-6), and that lead most of them 85% to take precautions to reduce these risks by wearing special gloves and taking care when dealing with needles and sharps, (figures-7- 8). 46% of medical waste workers have a good attitude when they are get injured or stick go to clinic almost, this less than sixty-eight per cent of anaesthetists knew the appropriate First Aid measures to be taken following needle stick injury [10]. While some of them do not take any precautions 10. 3%.

Figure 9: Types of precautions taken when accident injuries or sticks among medical waste workers, in Khartoum State Hospitals, 2013 – 2016

Educational efforts must go beyond an emphasis solely on needle-stick injuries, providing mentoring and competency training to surgeons, residents, nurses, medical students, and other staff, including workers who do not have a role in the OR but handle supplies or dispose of waste [9].
The study showed significant association between training and practice of taking some precautions to reduce injuries, this is agreed with the published guidelines designed to minimize health care worker exposure to blood and body fluids, which may be infected with blood-borne pathogens, such as HIV. These guidelines remain the principal mode of HIV prevention among health care workers today [10].

**Conclusion**

In terms of this work, we found that:

- Highest rates of occupational injury among all workers who may be exposed to health-care waste are reported by cleaning personnel and waste handlers
- Most of medical waste workers, 76.1% know the needle stick can transmit hepatitis B and HIV
- The significant association between training and practice of taking some precautions to reduce injuries.

**References**

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