



**KNOWLEDGE ATTITUDE AND PRACTICE OF WORKERS TOWARDS HEALTH
CARE WASTE SAFETY MEASURES IN KHARTOUM STATE HOSPITALS 2015**

¹Mustafa Abuelgasim Abdalgadir, ²Dr. Fatima Fadul Ali Osman, ^{3*}Dr. Mohamed Osman Elamin Bushara,
⁴Dr. Sallahaldeen Mohammed Ahmed Alawneh

¹Ministry of Health. Sudan.

²Alzaiem Alazhari University. Faculty of Public Health. Sudan.

^{3,4}Umm Alqura University. Faculty of Public Health & Health Informatics. Saudi Arabia.

***Correspondence for Author: Dr. Mohamed Osman Elamin Bushara**

Umm Alqura University. Faculty of Public Health & Health Informatics. Saudi Arabia.

Article Received on 19/07/2016

Article Revised on 09/08/2016

Article Accepted on 29/08/2016

ABSTRACT

The study was conducted in, the government of Khartoum state hospitals 2015 to study the concepts, trends and practices for safety standards for workers and healthcare wastes, The information was collected through the questionnaire and observation, Where data analyzed by SPSS program system analysis. The workers knowledge of the existence of risks of health- care waste was (98.4%) while their knowledge of the relationship of AIDS Health care waste (31.9%) and hepatitis pattern (B) only (9.6%) and who have been trained on the dangers of care waste (45%) and (20%) say that the training period is not sufficient, (57.4%) have not got a primary medical examination, it was found that (46.5%) of the workers do not have protective clothing. (98.4%) agree that the protective clothing to protect them from the risk of health-care waste, (46%) wore protective feet, the study also showed 31% of workers are not vaccinated against hepatitis Also the study clarified that (42.9%) of the injured workers while working were conscripts, study explained (90.1%) of workers are dissatisfied with the wages and inadequate monthly salary. The study recommended subjecting the workers in the field of health-care waste to a primary medical examination prior to appointment as well as training on risks of health-care waste and guidance on best practice in waste management, the study recommended for regular vaccination and the application of safety measures for health workers with increasing wages and financial incentives.

KEYWORDS: situation economic, social and increasing wages, moral, and financial incentives.

INTRODUCTION

Health –care waste defined it includes all wastes generated by health –care escalation, research facilities and laboratories in addition, it includes the waste originating from minor or scattered source, such as that produced in the cause of health –care undertaken in the home dialysis, insulin injection.^[1] Health care waste generated by health care activities includes a broad range of materials, from used needles and syringes to soiled dressings, body parts, diagnostic samples, blood, chemicals, pharmaceuticals, medical devices and radioactive materials^[2] which can infect hospital patients, health-care workers and the general public. Other potential infectious risks include the spread of, sometimes resistant, micro-organisms from health-care establishments into the environment. These risks have so far been only poorly investigated. Wastes and by-products can also cause injuries, for example radiation burns or sharps-inflicted injuries; poisoning and pollution, whether through the release of pharmaceutical products, in particular, antibiotics and cytotoxic drugs, through the waste water or by toxic elements or compounds such as mercury or dioxins.^[3] The waste

produced in the course of health care activities carries a higher potential for infection and injury than any other types of waste. Wherever it is generated safe and reliable methods for its handling are therefore essential.^[4]

In pursuing their aims of reducing health problems and eliminating potential risks to people's health, health –care services inevitable create waste that may itself be hazardous to health. The waste produced in the course if health. Care activities carry a higher potential for infection and injury than any other type of waste. Wherever, it is generated, safe and reliable methods for its handling are therefore essential. Inadequate and inapposite handling of health –care waste may have serious public health consequences and a significant impact on the environment. Sound management of health-care waste crucial of environmental health protection^[5] in both the short term and the long term, the action involved in implementing effective health –care waste management programmer require multicultural cooperation and interaction at all levels.^[6] Hospitals and other health-care establishment have a duty of care for the environment and for public health and have particular

responsibilities in relation to the waste they produce. the onus is on such establishments to ensure that there are no adverse health and environmental consequences of their waste handling, treatment and disposal activities. By implementing a health –care waste management policy, medical and research facilities are moving toward the achievement of a healthy and safe environment for their employees and communities.^[7]

In the late 1980s there were a series of syringe wash ups on beaches along the East Coast of the United States, which were mistakenly attributed to health care facilities. The federal health care Waste Tracking Act (MWTA) was passed and the EPA attempted to set standards for managing the infectious waste component of health care waste that they renamed regulated medical waste. Few states adopted its stringent guidelines. The MWTA expired in the early 1990s, making each state responsible for establishing its own classification and management guidelines for medical waste.^[8] There are very few documented cases of disease transmission from contact with medical waste. The notable exception is needle stick, or "sharps" injuries. Paralleling the concern over beach wash ups of medical waste, was a growing awareness of the increase in HIV-AIDS and other cases of infectious diseases being diagnosed and treated in health care settings. This, along with a series of events, led to the Occupational Safety and Health Administration (OSHA), which established rules designed to protect health care workers (OSHA blood-borne pathogen standards and universal precautions) by stipulating the need for such personnel to wear protective clothing and equipment, and to take special precautions when handling or disposing of sharps. The interpretation of rules surrounding worker safety regulations led to some confusion over waste classification, thus causing a greater amount of wastes to be considered as potentially infectious. (For example, under the OSHA universal precautions guidelines, a worker handling a bandage with a single drop of blood on it should wear gloves, but the waste itself would most likely not be classified as infectious.

2. Problem statement and justifications

Health – care waste includes a large component of general waste and a smaller proportion of hazardous waste. Exposure to hazardous health –care as HIV/AIDS and hepatitis Band c, health –care workers, particularly nurses are at a greatest risk of infection through injuries from contaminated sharps. In France in 1992, eight cases of H.I.V infection were recognized as occupational infection 2 these cases occurred in waste handler. In USA in June 1994. 39 cases of HIV infection were recognized by the centers for diseases control and prevention as occupational infections. the annual number of HIV infection in the USA resulting from exposure to health – care waste is between 162 and 321 out of an overall total of 300.000 cases (10) Severe acute respiratory syndrome (SARS) is possibly the first globally significant occupational disease to emerge in the

twenty – first century, health – care workers are a high – risk group for SARS infection according to the WHO as at 4 May, 41% of 203 (SARS) patients in Singaporean 22% of 1629 cases in Hong were health-care workers. As at April 25 in 2003 more than 100 hospital workers at three greater Toronto area hospitals have become ill with (SARS).^[11]

Objective; General objectives

To Study the knowledge, attitude and practice of the workers towards health care waste safety measures in Khartoum State hospitals 2015.

Specific Objectives

- 1- To determine the knowledge of workers towards health care waste and safety measures
- 2- To assess attitude of respondents about hazards of health care waste and safety measures
- 3- To assess the practices of respondents towards health care waste and safety measures.

METHODOLOGY

Study design: This is descriptive cross-sectional hospital based study.

Study area: Study area: Khartoum state is one of the 26 it has an area of 22.122km² and estimated population of approximately 4.700.000(2000), Khartoum is national capital of Sudan .There are 43 hospitals in Khartoum state, 9 hospitals belong to federal governmental and 38 hospital belong to Khartoum state governmental.

Study population: All Health care waste workers in Khartoum state governmental hospitals in all duties’.

Sampling: Type of sample: Simple random sample with stratifications

1. Sample size:

The sample size was selected hospitals and the numbers of health care waste workers by stratified random sample method by adoption of equation^[2]

$$n = \frac{z^2 \times p \times q}{d^2} \text{ Where } n = \text{sample size}$$

z = the standard normal deviate. Usually set at 1.96 this corresponds to the level of the 95% confidence level.

p = the proportion in the target population estimated to have a particular characteristic, use 0.5

$q = 1 - p = 1 - 0.5 = 0.5$ d = desired margin of error = 0.05

$$n = \frac{1.96 \times 1.96 \times 0.5 \times 0.5}{0.05 \times 0.05} = \underline{385}$$

2. Select sample for hospital

Basic data was collected about the number of hospital in Khartoum state; it was found that it is 38 hospitals; hospitals were taken simple random sample with stratifications, the sample select to over Khartoum state. The health care waste workers select from 38 hospitals proportionally and select of health care waste workers for each hospital due systematic random methods.

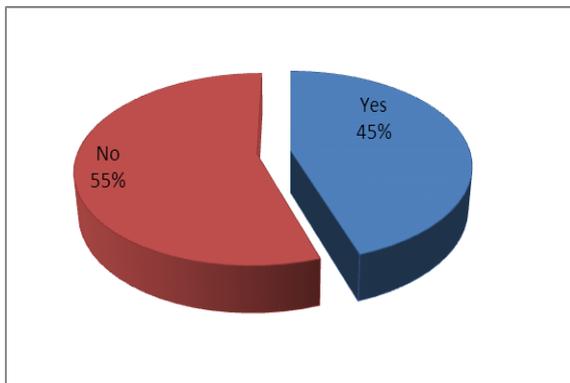
Data collection by

1-Primary; Questionnaire was designed of asset of questions of knowledge attitudes and practices.
 2-Secondary; Books, Research's.

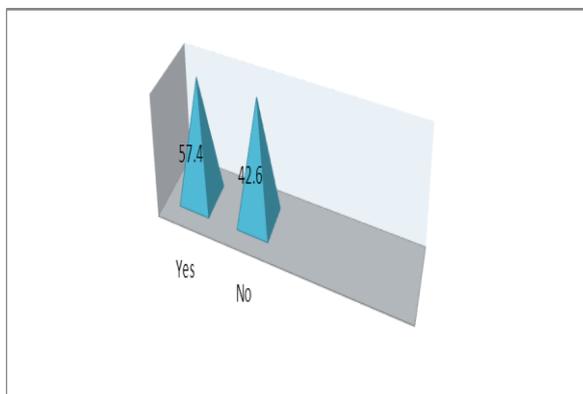
Data analysis: To analyses data by SPSs program.

Ethical consideration

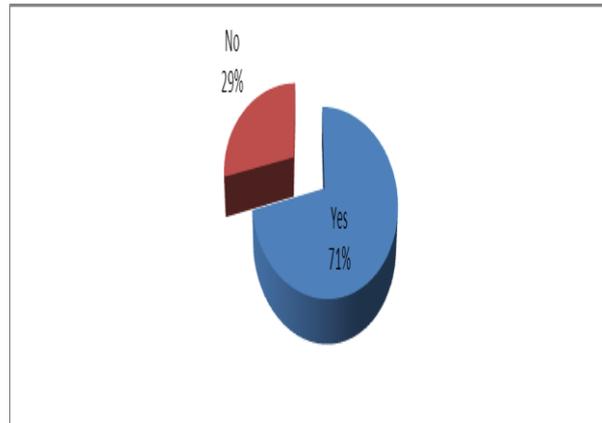
The ethical aspect related to the social responsibilities, Which the health professions have, as a result of their status, Knowledge and skills and an obligation to alert those who Are at risk. This is reflected by the compulsory notification of infectious and notifiable diseases as a measure of public Welfare. As regards Bio-Medical Waste management health Professionals, bear a responsibility to act in such a way to prevent exposure to various health hazards and exposures To dioxins'. As Bio-Medical Waste is the major source of Dioxin production during incineration, which are generally Cause of incurable cancers, the Medical ethics dictates that Prevention must be carried out in Khartoum state governmental hospitals Result interpretation.



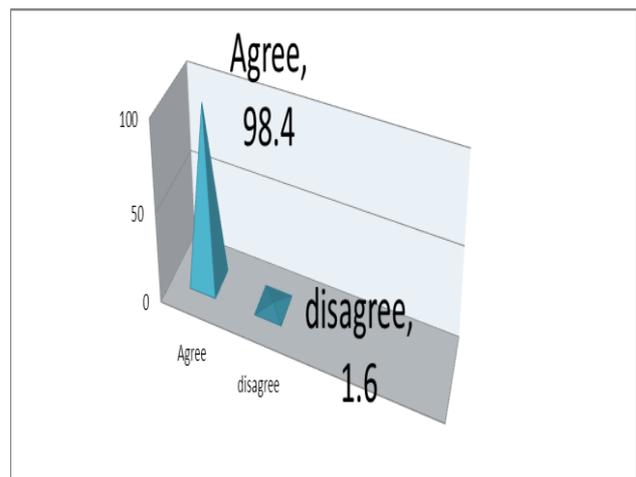
(1) Training before joining the job Distribution among health care Waste Workers in Hospital Krt. State 2015



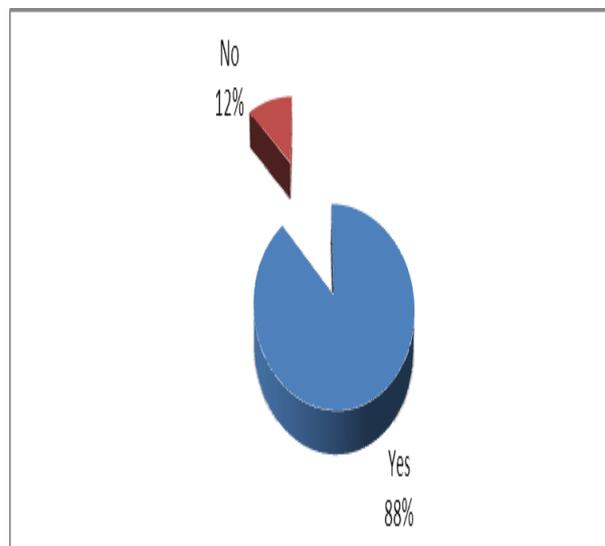
(2) Medical examination before joining the job Distribution among health care Waste Workers in Hospital Krt. State 2015



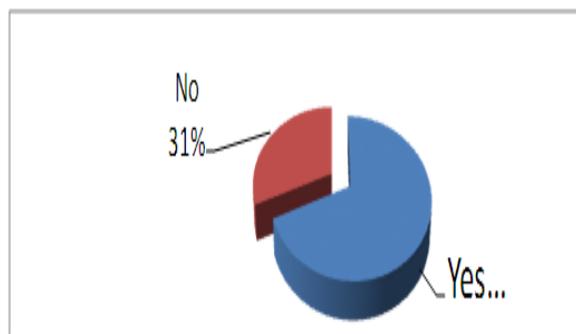
(3) wear of protective clothing Distribution among health care Waste Workers in Hospital Krt. State 2015



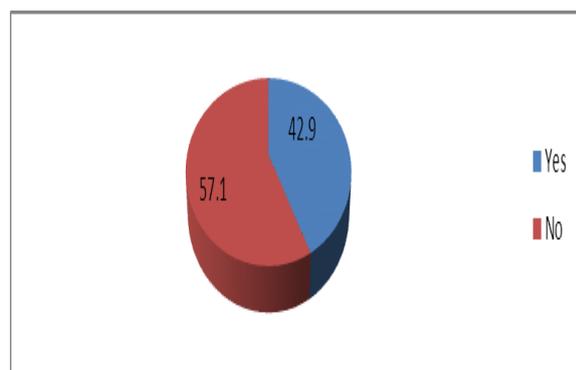
(4) Agree to protective clothing Distribution among health care Waste Workers in Hospital Krt. State 2015



(5) Wearing gloves during work Distribution among health care Waste Workers in Hospital Krt. State 2015



(6) Vaccine before joining the job Distribution among health care Waste Workers in Hospital Krt. State 2015



(7) Injury during work Distribution among health care Waste Workers in Hospital Krt. State 2015

DISCUSSION

Occupational exposure of health care workers to blood - borne pathogens may result in transmission of human immune deficiency virus (HIV), hepatitis B virus (HBV) and hepatitis C virus (HCV). The risk of acquiring blood - borne infections such as HBV, HCV and HIV from occupational exposure depends on the frequency of percutaneous and per mucosal exposure to blood or body fluids.

The study revealed that more than half of workers in the study area were not trained in medical waste, this is an indication that medical waste training program were not organized for the worker. A previous study in Sudan Khartoum state The study revealed that there was no training in health care waste management.^[8] This results disagree.^[5] (Training in health and safety should ensure that workers know of and understand the potential risks associated with health-care waste, Exposure to health-care waste can be minimized by training in safe working practices and use of equipment and protective clothing).

The study revealed that 42.6% of workers in the study area were not medical examination this result low.^[4] (In Sudan Khartoum state covers mental hospitals in the period of February to April 2008 to study in Khartoum state hospitals about occupational health and safety among health care waste workers the study revealed that there was no pre-employment medical examination (61.5%).

With regard to protective clothing of the health, the study revealed that (71.4%) of worker had wearing protective clothing, this results goes (UK'S, 2003) (In 2003, the UK'S National institute of clinical effectiveness published guidelines on the prevention of health care-related infections in primary care, a key recommendation was that everyone involved in providing care in community should be educated about standard principle and trained in hand decontamination, the use of protective clothing and the safe disposal of sharps).

Percentages of worker that not use gloves during work (11.7%) and not use (54%) this results disagree recommended by the WHO for health-care waste workers (Strongly recommended: overalls, industrial standard aprons and gloves leg protectors and strong boots, Advisable if there is risk of exposure to uncontained waste or if working with waste treatment equipment, safety glasses, face masks and helmets).

Percentages of worker that not vaccine before joining the job 31.2% this results disagree essential occupational health and safety measure^[10] (Essential occupational health and safety measure include the following: Proper training of workers. Provision of equipment and clothing for personal protection. Establishment of an affective occupational health programmer that includes immunization, post-exposure prophylactic treatment and medical surveillance) Workers need to be able to identify high risk of medical waste and important of clothing for personal protection that support of injury prevention. in his study above less than half (42.9%) of the worker injury during work this results is agree.^[11] (They are regularly exposed to blood and other hold fluids during their daily work, many infections, including (HIV), (HBV) and (HCV) are found in nosocomial infection surveys, the risk of infection depends on the prevalence of disease in body fluids and the type and frequency of exposure) The study revealed that the relationship between the age group of study population and the knowledge about disease related medical waste is statistically significant.

CONCLUSION

- The poor knowledge of diseases and their relation to health care waste
- Poor training on the dangers of care waste programs
- Is not a primary medical examination
- Workers do not have protective clothing.
- Lack of commitment by wearing protective clothing
- No vaccination against hepatitis b
- Frequent exposure to injuries at work

No Satisfaction for wages and inadequate monthly salary.

Recommendation

- Subjecting workers in the field of health-care waste to conduct primary medical examination prior to

appointment as well as the periodic medical examination

- Attention to training and continuing education of health care risk waste and guidance in how to manage health care waste
- The importance of regular vaccination
- The application of safety measures for workers

Improving the economic and social conditions and increasing wages, moral and financial incentives.

REFERENCES

1. KAP and behavior of adult population (aged 15-49years) towards HIV /AIDS in south salaam Village Khartoum state –Sudan, August 2002.
2. Role of Health Promotion in Changing Unsafe Sex Knowledge, Attitude & Practice of Rickshaw Drivers at Khartoum State November. 2006-October 2007 ZEINAB MOHAMED “MS c” in Health Education.
3. Freeman HM, ed. Standard handbook of hazardous waste treatment and disposal. New York, McGraw–Hill, 1989.
4. Management of waste from hospitals. Copenhagen, World Health Organization Regional Office for Europe, 1985.
5. Safe management of wastes from health-care activities. Geneva, World Health Organization, 1999.
6. Anderson GK. Incineration as a waste disposal option in EMRO. Amman, World Health Organization Regional Office for the Eastern Mediterranean, 1995.
7. Montreal J. Considerations on the management of hospital wastes in Latin America. Washington DC, Pan American Health Organization, 1991.
8. Mustafa Jafar, qualfing (M.P.E.H) in environmental health Krt, University, occupational health and safety among health care waste workers at hospital in Khartoum state 2008.
9. Managing medical waste in developing countries. Geneva, World Health Organization, 1994.
10. Medical Waste - water, environmental, United States, types, impact, EPA, chemicals, toxic, world, human, sources, disposal, use, health, oil <http://www.pollutionissues.com/Li-Na/Medical-Waste.html#ixzz1PqZNJtIL> Hall T. Health care waste management handbook. Gates head, Environmental Technology Consultants Limited, 1994.
11. (Hassel horn, Tooling’s and Lagerstroemia 1999, p.2).
12. Medical waste management in the United States. First Interim Report to Congress. Washington DC, United States Environmental Protection Agency, Office of Solid Waste, 1990 (EPA/530-SW-90-051a).
13. Pressman Krishnan, finally dick and Elizabeth murky 2006. The impact of educational intervention on primary health care workers knowledge of occupational exposure to blood or body fluid.