

Knowledge of Occupational Hazards and Practice of Occupational Health and Safety among Mortuary Workers in Health Facilities in Kaduna Metropolis, Nigeria.

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Abstract

Background: Mortuary workers are exposed to several health hazards in the course of carrying out their duties. Adequate knowledge about these hazards and routinely engaging in safety practices is crucial to reducing the prevalence of occupational injuries and diseases. This study was carried out to determine the knowledge of workplace hazards and safety practices among mortuary workers in Kaduna Metropolis.

Method: This was a descriptive cross-sectional study. The total population of mortuary workers in Kaduna metropolis (102) participated in the study. Data was collected using a pre-tested semi-structured questionnaire and analysed with IBM SPSS Statistics version 25. Results were presented using tables. Chi-square test of proportion was used to test for association between variables. The level of statistical significance was set at p -value of <0.05 .

Results: Thirty five (34.3%) of respondents were aged between 30 to 34 years; 73(71.6%) were male and 69(67.6%) had secondary level education. Eighty (78.4%) respondents had good knowledge of occupational hazards. Seventy one (69.6%) of the respondents had good occupational health and safety practices. There was a statistically significant relationship between the practice of occupational health and safety and respondents' age ($p=0.039$), educational level ($p=0.021$) and knowledge grade ($p<0.0001$).

Conclusion: The findings from this study show that majority of the respondents had good knowledge, however, about a third of them had an aggregated practice score of less than 50% largely due to non-availability of necessary safety equipment. It is essential that the management in health facilities ensure sustainable provision of personal protective equipment.

Key words: Mortuary workers; occupational health; safety;

Introduction

Every worker must be protected from diseases and injuries arising from the workplace. However, in developing countries, this is not the case more often than not.¹ There is a complex interrelationship of immediate and remote factors that lead to poor health outcomes for many workers, especially those in sub-Saharan Africa.² Even though workers' health and safety is inextricably linked to public health and optimal productivity, it receives minimal attention from most governments in developing countries.³ In the developing world, many work-related diseases, accidents or injuries go unreported or are erroneously reported.⁴ The International Labour Organisation (ILO) estimates that about 2.78 million workers die yearly from work-related diseases or injuries. Out of this, 2.4 million die from occupational diseases.⁵ Low and middle-income countries like Nigeria are responsible for a disproportionately high amount of the global burden of occupational diseases and deaths.⁶ This loss goes beyond the extreme pain and suffering of the family as the loss of workers has socioeconomic implications that extend beyond his workplace to the wider community.⁷

Hazards are not unusual findings in the workplace, however, some work environments put workers at a higher risk than others. Generally, health care workers are at a higher risk of exposure to a wide range of hazards; most commonly biological hazards.⁸ Due to the nature of their jobs, mortuary workers are exposed to biological (viruses, bacteria and fungi), chemical (formalin, solvents etc.), physical (electric shocks, poor illumination, etc), psychosocial (work-induced stress, depression) and mechanical hazards (falls, cuts, sharps injuries).⁹ The staff often transport bodies

from the hospital to the mortuary, prepare the deceased for examination by a pathologist, clean and set up instruments, pick tissue specimens, ensure all specimens and cadavers are tagged, and otherwise support the functions of the mortuary.¹⁰ Studies have shown that knowledge of the hazards and the preventive practices against these hazards is suboptimal.⁹ Poor knowledge and practice of Occupational Health and Safety (OHS) are associated with rising prevalence of work-related diseases or injuries.¹¹ Some common diseases they are at risk of include coronavirus SARS-CoV2 (COVID-19), viral haemorrhagic fevers, eye irritation, allergic dermatitis, airway irritation etc.¹²

Poor reporting (inaccurate, under-reporting and untimely reporting) means that the current picture is just the tip of the iceberg. The staff of mortuary departments are usually overworked and underfunded with limited resource allocation and poor general supervision.¹³ There is minimal focus on the health and safety of these workers even though they work in high risk environments.¹⁰ Most studies focus solely on the biological hazards they are exposed to; thereby ignoring most of the others.^{14,15,16} Poor knowledge of the hazards and the potential effects sometimes causes workers to under-report certain occupational diseases.⁴ The practice of health and safety measures is often inconsistent or virtually non-existent due to interrupted supply of personal protective equipment (PPE), lack of hand washing/hand sanitizing items and shortage of running water among others. This study aimed to determine the knowledge of workplace hazards and safety practices among mortuary workers in health facilities in Kaduna Metropolis.

Methods

Study Area and population

This study was carried out among mortuary staff of secondary health facilities in Kaduna metropolis. Kaduna State is located in north western Nigeria and has a projected population of 8,252,400. Kaduna metropolis is a largely cosmopolitan areas with diverse tribes and religions. It consists of 23 Local Government Areas (LGAs); four of which make up Kaduna metropolis. These are Kaduna North, Kaduna South, Igabi and Chikun LGAs. There are five secondary health care facilities in the metropolis each with a mortuary. The staff in all the facilities work in 12 hour shifts daily. This was a descriptive cross-sectional study carried out in September 2020. A total population sample was used. There were 102 mortuary workers working in Kaduna metropolis.

Data collection and analysis

A semi-structured, pre-tested interviewer-administered questionnaire (adapted from previous studies)^{9,17,18} was used to collect data. The questionnaire comprised of four sections. Section A had questions on background information, section B had questions on knowledge of occupational hazards, section C had questions on practice of occupational health and safety and section D had questions on experience of occupational hazards. Data collected was analysed using IBM SPSS Statistics version 25. The results were presented in frequency tables. The Chi-square test of significance was used to confirm the observed relationship between socio-demographic factors (age, educational level, years of work experience and knowledge level) and practice of occupational health and safety. Fisher's Exact Test was used where conditions for chi-square test were not met. The level of statistical significance

was set at p-value of <0.05.

There were twenty-two knowledge questions (which covered knowledge of hazards and routes of entry of hazardous substances); each correct answer was given a score of one while a wrong answer was scored 0. Any respondent who scored at least eleven correct answers (corresponding to >50%) was given a pass mark and was determined to have good knowledge. Practice was assessed using seventeen questions; each correct answer was given a score of one and the wrong answer was scored 0. Respondents were graded as having good practice if the aggregated practice score was 50% and above or poor if they scored less than 50%. The grading was based on previous studies.^{17,18}

Ethical Consideration

Ethical approval was obtained from the Ethics and Scientific Committee of Barau Dikko Teaching Hospital. Verbal consent was obtained from the respondents after the nature of the research was explained to them. Respondents were assured of strict confidentiality of the responses provided. They were also told that they could withdraw from participating in the study at any time during the course of the research if they so wished.

Results

Thirty five (34.3%) of the respondents were aged between 30 to 34 years with the mean age 34.6 ± 4.3 years. Over two-third of them; 73 (71.6%) and 69 (67.6%) were male and had tertiary education respectively. Also 63 (61.8%) of the respondents had 6 to 10 years working experience (Table 1). All (100%) the respondents knew that infected blood/tissue/body fluids are biological hazards and 97 (95.1%) stated that skin contact with verminous bodies and needle-stick injuries constituted a biological

hazard. Twenty three (22.5%) of the respondents knew that latex allergies were chemical hazards and over three-quarters; 80 (78.4%) of them had good knowledge of occupational hazards (Table 2). Thirty nine (38.2%) of the respondents were fully vaccinated against hepatitis B and nearly all of them; 100 (98%) used face masks. About two-thirds; 71 (69.6%) of the respondents had good occupational health

and safety practices. Nearly all of those with poor practice, cited lack of running water; 30 (96.8%) and PPEs; 29 (93.5%) as the reason for poor occupational health and safety practices (Table 3). There was a statistically significant relationship between practice of OHS and respondents' age ($p=0.039$), level of education ($p=0.021$) and knowledge of occupational hazards ($p<0.0001$) (Table 4).

Table 1: Respondents' socio-demographic characteristics (n=102)

Variable	Frequency	Percentage
Age (years)		
20-24	9	8.8
25-29	13	12.7
30-34	35	34.3
35-39	19	18.6
40-44	10	9.8
45-49	11	10.8
≥50	5	4.9
Sex		
Male	73	71.6
Female	29	28.4
Educational Level		
Secondary	69	67.6
Tertiary	33	32.4
Work Experience (years)		
1-5	27	26.5
6-10	63	61.8
11-15	3	2.9
16-20	6	5.9
21-25	3	2.9

Table 2: Respondents' knowledge of hazards in the workplace (n=102)

Hazard	Knowledge	
	Good Frequency (%)	Poor Frequency (%)
Biological		
Infected blood/tissue/body fluids	102 (100)	0 (0)
Direct skin contact with verminous bodies	97 (95.1)	5 (4.9)
Needle-stick injury	97 (95.1)	5 (4.9)
Direct splashes/spillage	71 (69.6)	31(30.4)
Infected water aerosols	67 (65.7)	35 (34.3)
Chemical		
Latex allergies	23 (22.5)	79 (77.5)
Exposure to toxic agents like formaldehyde, disinfectants and fixatives	74 (72.5)	28 (27.5)
Dust from cutting bone	16 (15.7)	86 (84.3)
Physical		
Slips/falls	78 (76.5)	24 (23.5)
Burns	29 (28.4)	73 (71.6)
Electric shock	14 (13.7)	88 (86.2)
Cuts	81 (79.4)	21 (20.6)
Musculoskeletal disorders from handling bodies	67 (65.7)	35 (34.3)

Table 3: Respondents' practice of occupational health and safety (n=102)

Practice	Good Frequency (%)	Poor Frequency (%)
	Safety training in the last one year	74 (72.5)
Fully vaccinated against Hepatitis B	39 (38.2)	63 (61.7)
Hand washing	102 (100)	0(0)
Use of gloves	97 (95.1)	5 (4.9)
Use of rubber boots	39 (38.2)	63 (61.7)
Use of face masks	100 (98.0)	2 (2.0)
Use of goggles	23 (22.5)	79 (77.5)
Use of water repellent apron	56 (54.9)	46 (45.1)
Follow instructions when handling chemicals	94 (92.2)	8 (7.8)
Use sharp box	71 (69.6)	31 (30.4)

Table 4: Factors affecting practice of occupational health and safety

	Poor Practice	Good Practice	Test statistic; p-value
Age (years)			
20-24	3	6	
25-29	6	7	
30-34	4	31	Fisher's exact: 13.204
35-39	5	14	p=0.039
40-44	4	6	
45-49	6	5	
=50	3	2	
Educational Level			
Secondary	26	43	
Tertiary	5	28	$\chi^2=5.356$; p=0.021
Work Experience (years)			
1-5	14	13	
6-10	14	49	Fisher's exact= 9.211
11-15	0	3	p=0.056
16-20	2	4	
21-25	1	2	
Aggregate Knowledge Score			
Good	14	66	$\chi^2= 29.14$; p<0.0001
Poor	17	5	

Discussion

Mortuaries pose serious challenges to occupational health and safety due to the numerous hazards in that work environment. The mortuary is also one of the most neglected departments in most health facilities.¹⁹ Workers in this sector are poorly surveyed regarding occupational health and safety; which could be a reflection of the stigma and taboo the society places on death and those working closely with corpses.⁹ The hazards they are exposed to are largely preventable when workers adhere to health and safety regulations.¹⁰ The mean age of the respondents in this study was 34.6 ± 4.3 years. This is similar to the finding from a study conducted among mortuary workers in south-west Nigeria where the mean age of respondents was 38.2 years.¹⁵ This job is physically demanding and as such would

require younger members of society. Majority of the workers were male which is similar to findings from studies conducted among mortuary workers in South-west Nigeria, Port Harcourt and Lagos.^{15,20,21} Males find this job more appealing than their female counterparts due to the pervading cultural beliefs and the physically demanding nature of the job. Most of the workers in this study had between 6 to 10 years working experience. Studies have shown that the higher the years of working experience, the greater the compliance with desired health behaviour.^{14,22}

Majority of the respondents in this study had good knowledge of the biological hazards in the mortuary. This is similar to what was documented in a study carried out among mortuary workers in Ikwerre,

Rivers State where majority of the respondents had good knowledge of the hazards they were exposed to.⁹ It is however in contrast to the finding of a study carried out in Lagos where only half of them had good knowledge.²⁰ These findings from this study were high because of the prevailing global phenomenon of COVID-19 pandemic which has heightened the propagation of health information (from numerous channels) about the importance of standard precautions. Good knowledge is one of the driving factors for the uptake and maintenance of health behaviour. Only about a fifth of the respondents knew that latex allergies were part of the chemical hazards they are exposed to. However, majority of them knew that embalming chemicals posed a hazard to them. This is likely due to the fact that most of the chemicals are labelled as dangerous so in the course of working with them, the workers are exposed to their toxic nature (strong fumes). Majority of the respondents knew that slips/falls and cuts constituted physical hazards. This is similar to findings from the study carried out in Ikwerre where majority of the respondents had good knowledge of physical hazards.⁹ Liquid spills and the injury from sharp tools are occupational hazards which occur with high frequency as such they would be easy to remember by most respondents.

Almost three-quarter of the respondents had training within the one year preceding this study. All of them practiced hand washing at work, most of them used gloves, face masks and followed instructions when handling chemicals. This is similar to findings in a study carried out in Lagos where most of the respondents used gloves and practiced hand washing.²⁰ However, only about a third of them were fully vaccinated against

hepatitis B virus and the proportion of those who wore rubber boots or used eye goggles was suboptimal. Regarding the practice of health and safety, the findings showed that the proportion of respondents who consistently carried out the safety practices was suboptimal. This is similar to findings of the study carried out in Ikwerre, where in spite good knowledge of hazards, practice was suboptimal.⁹ The findings from this study were higher than those from a study carried out in south-west, Nigeria where less than a third of the respondents were completely vaccinated against Hepatitis B.¹⁵ This poor practice among the respondents' means that majority of them are susceptible to this blood borne pathogen which has serious health effects. Their inconsistent use of PPEs increases their risk of experiencing occupational hazards such as increased incidence of blood borne diseases and occupational injuries. Prolonged exposure to formaldehyde and formalin is associated with contact dermatitis, congenital defects and cancer.²³

The major reasons highlighted for inadequate practice was lack of water and non-availability of PPEs. This is similar to that found in a study carried out in Ghana where about three-quarters of the respondents cited non-availability as a barrier to utilization of PPEs.¹⁶ Lack of PPEs during this period could be as a result of the high demand on these products during the pandemic. Health workers globally are dependent on limited supplies of PPEs; and the demand increased exponentially due to the COVID-19 pandemic. Lack of water is a serious challenge in health facilities. Health workers are by the nature of their job exposed to pathogens which could cause severe diseases and in some cases have long term deleterious effects.²⁴ Another effect of this situation is that the resultant

health conditions (especially communicable diseases) could affect the workers' families and their community at large.

There was a statistically significant relationship between the practice of occupational health and safety and respondents' age, educational level and knowledge. These findings are similar to those from a study carried out in Guateng Province, South Africa.¹¹ Research has shown that older workers are more likely than their younger colleagues to adhere to safety practices.²⁵ Workers with higher educational level and better knowledge of occupational hazards have been shown to be more likely to carry out safety practices.^{26,27} This is due to the fact that education increases the understanding of health information and consequently engaging in desired health behaviour. Carrying out health and safety practices will ensure that there will be a reduction in the prevalence of occupational health injuries and diseases.

Conclusion

The findings from this study show that knowledge and practice was good with majority of the respondents; however, about a third of them had a poor aggregated practice score. The reasons given for non-compliance with occupational health and safety practices were mainly non-availability of PPEs and lack of water. It is essential that the managements in health facilities provide PPEs and ensure they are able to sustain this. Availability of potable water is essential to the proper functioning of any health facility. Health facilities that are unable to secure government funded water supply should endeavor to invest in a borehole or sanitary well. The provision of these services will improve practice of occupational health and safety among mortuary workers.

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