

Knowledge attitude and practice of occupational safety among health workers in Tertiary Hospital Mogadishu-Somalia

Conocimiento, actitud y práctica de la seguridad laboral entre los trabajadores sanitarios del hospital terciario de Mogadiscio-Somalia

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Abstract

Introduction: Occupational health and safety (OHS) is concerned with workers' health, safety, and well-being. Over 59 million people worldwide work in health care facilities (HCFs), which are hazardous and high-risk workplaces. Like other high-risk workplaces, healthcare institutions expose workers to harmful agents, endangering their health and lives.

Method: This study was conducted in Mogadishu, Somalia's capital. It's the country's only teaching hospital. This study was descriptive cross-sectional. All consenting healthcare personnel participated. Due to the study's purpose, administrative healthcare staffs were excluded.

Results: 124 (59.0%) of the respondents were male, aged 25-35 (73.3%), with a mean age (SD) of 28.31 4.11 years. Most participants (48.6%) were nurses, followed by doctors (43.3%) and medical technicians (17%). (8.1 percent). Most respondents were unmarried, with 51.9% working in the medical service and 35.7% having fewer than five years of professional experience (80.5%). 96% of respondents knew that all patients, healthcare personnel, and communities are at risk of healthcare-related infection. 95% of respondents recognized Universal Precautions and Standard Precautions protect health staff and patients from infection. Similarly, 94.3% recognized there must be an occupational safety and health policy authorized by management with regular talks between management and workers in the hospital, and 93.8% said it's common to train and educate personnel about occupational safety and health.

Conclusion: All employees should have sufficient safety kits, timely replacement of worn-out ones, and current job aids based on their assigned jobs. Pre-employment, continuous, and preventive safety training for health care workers should be institutionalized. Government, employers, company management, and employees work together to handle OHS. National policy must govern occupational health and safety to keep unwanted aspects from the workplace. Management and employers must be committed to workplace health and safety to provide a decent place to work. Employees must obey safety rules.

Key words: Occupational hazards, healthcare workers, healthcare facilities, public health.

Resumen

Introducción: La salud y la seguridad en el trabajo (SST) se ocupan de la salud, la seguridad y el bienestar de los trabajadores. Más de 59 millones de personas en todo el mundo trabajan en centros sanitarios, que son lugares de trabajo peligrosos y de alto riesgo. Al igual que otros lugares de trabajo de alto riesgo, los centros sanitarios exponen a los trabajadores a agentes nocivos, poniendo en peligro su salud y su vida.

Método: Este estudio se realizó en Mogadiscio, la capital de Somalia. Es el único hospital universitario del país. Este estudio fue descriptivo transversal. Participó todo el personal sanitario que dio su consentimiento. Debido a la finalidad del estudio, se excluyó al personal sanitario administrativo.

Resultados: 124 (59,0%) de los encuestados eran hombres, con edades comprendidas entre los 25 y los 35 años (73,3%), con una edad media (DE) de 28,31 4,11 años. La mayoría de los participantes (48,6%) eran enfermeros, seguidos de médicos (43,3%) y técnicos médicos (17%). (8,1%). La mayoría de los encuestados eran solteros, el 51,9% trabajaba en el servicio médico y el 35,7% tenía menos de cinco años de experiencia profesional (80,5%). El 96% de los encuestados sabía que todos los pacientes, el personal sanitario y las comunidades corren el riesgo de contraer una infección relacionada con la atención sanitaria. El 95% de los encuestados reconoció que las Precauciones Universales y las Precauciones Estándar protegen al personal sanitario y a los pacientes de las infecciones. Asimismo, el 94,3% reconoció que debe existir una política de seguridad y salud en el trabajo autorizada por la dirección con charlas periódicas entre ésta y los trabajadores del hospital, y el 93,8% dijo que es habitual formar y educar al personal en materia de seguridad y salud en el trabajo.

Conclusión: Todos los empleados deben disponer de kits de seguridad suficientes, sustituir a tiempo los que estén desgastados y disponer de ayudas de trabajo actualizadas en función de los trabajos asignados. Debe institucionalizarse la formación en seguridad previa al empleo, continua y preventiva para los trabajadores sanitarios. El gobierno, los empleadores, la dirección de la empresa y los empleados trabajan juntos para gestionar la salud y la seguridad en el trabajo. La política nacional debe regir la seguridad y la salud en el trabajo para alejar los aspectos no deseados del lugar de trabajo. La dirección y los empresarios deben comprometerse con la salud y la seguridad en el trabajo para ofrecer un lugar de trabajo decente. Los empleados deben obedecer las normas de seguridad.

Palabras clave: Riesgos laborales, personal sanitario, instalaciones sanitarias, salud pública.

Introduction

Occupational health and safety (OHS) is concerned with employees' health, safety, and well-being at work¹. Health care facilities (HCFs) employ over 59 million people worldwide and provide a wide range of services to clients and patients, making them hazardous and high-risk workplaces. Like other high-risk workplaces, healthcare facilities are characterized by a high level of dangerous agent exposure, which significantly endangers the health and life of workers Health Care Workers (HCWs)².

Physicians, dentists, nursing and midwifery experts, pharmacists, and other allied health professionals were among the HCWs listed by the WHO³.

Work-related injuries and diseases kill an estimated 2 million people worldwide, which is more than the yearly number of malaria deaths. Work-related ailments, such as respiratory and cardiovascular diseases, cancer, hearing loss, musculoskeletal, reproductive disorders, mental and neurological illnesses, affect an estimated 160 million people globally yearly⁴. The International Labor Organization (ILO) estimates that compensation, production disruption, and medical expenses connected with occupational health and safety (OHS) cost USD1.25 trillion every year⁵.

Protecting HCWs' health improves public health because they make up 10 to 18 percent of every country's workforce³. The inadequacy of facilities and equipment that might promote best practices in developing countries like Somalia exacerbates the vulnerability of personnel in HCFs. The occupational exposure of HCWs, particularly among doctors, nurses, and nursing assistants, poses a danger to the quality of health care delivery in developing nations². While the majority of occupational injury cases are documented in underdeveloped countries such as Somalia, assessing the degree of awareness, mindset and practice is one way to prevent them.

In this study, we aimed to determine occupational safety knowledge, attitude, and practice level among health workers in Mogadishu, Somalia's tertiary hospital.

Methods

This study was conducted at Mogadishu Somali Turkey Training and Research Hospital in Mogadishu, the capital of Somalia. It is the largest and only teaching and referral hospital in the country. The study design of this study was a descriptive cross-sectional design. All healthcare workers who consented to participate in the study were included. Administrative healthcare personnel, regardless of their profession, were excluded from the study due to the nature of the study.

The sample size for the study was calculated using the Lemeshow formula for sample size determination (Lemeshow, 1991) in health studies. Allowing a 30% non-response rate, the adjusted sample size needed was 220. A stratified random sampling technique, a proportion-to-size method, was used.

Data were collected using a modified pretested self-administered questionnaire adapted from a previous study². The questionnaire addressed the following socio-demographic characteristics (6 items), knowledge (6 items), attitude (6 items Likert scale ranging from strongly agree to strongly disagree), and practices (6 items) toward occupational hazards. Correct responses of knowledge and practice were given a score of "1", while wrong responses were given a score of "0". Furthermore, the median (inter-quartile range) for the knowledge score achieved was 6⁴⁻⁸. So a score below six was considered low, and a score equal to or greater than 6 was high. Similarly, a score of 19¹³⁻²⁴ and 2²⁻⁴ were used for attitude and practice, respectively.

The study protocol gained ethical approval from the institutional review board (IRB) of Mogadishu Somali Turkey Training and Research Hospital before the initiation of the study. Only members of the study team had access to electronic data, which were encrypted and kept on the external hard drive of the lead investigator.

The data collected was checked and cleaned. The questionnaires were coded, entered, and analyzed using IBM- SPSS version 27. We used descriptive statistics, including mean, median, and standard deviation for continuous variables and frequency/percentages for categorical categories, as well as chi-square.

Results

Socio-demographic Factors

Table I shows the socio-demographic characteristics of participants. This study showed that the majority of the respondents were male, 124 (59.0%), aged 25-35 years, 154 (73.3%), with a mean age (SD) of the respondents being 28.31 ± 4.11 years. The study revealed that most participants were nurses 102 (48.6%), followed by doctors 91 (43.3%), and medical technicians 17 (8.1%). Most of the respondents were unmarried, with 108 (51.9%) working in the medical service, 75 (35.7%), and less than five years of work experience 169 (80.5%).

Knowledge of participants on occupational hazards in health care facilities

Table II shows the knowledge of respondents on occupational hazards and safety. Around ninety-six percent of the respondents had good knowledge that all patients, healthcare workers, and communities in

healthcare facilities are at risk of healthcare-related infection. Similarly, 95% of the respondents knew Universal Precautions and Standard Precautions (infection control and management methods) protect both health workers and patients from infection. Similarly, among all respondents, 94.3% knew there must be occupational safety

and health policy endorsed by management with regular consultations between management and workers in the

hospital, while most of the respondents 93.8% it's usual to conduct training and education on workers about occupational safety and health.

Additionally, the majority of the respondents, 88%, knew that standard precautions should be applied to all patients regardless of their infectious status, while most of the respondents, 92%, knew that there is a demand for routine assessment of workplace health and safety risks and controls carried out by a trained person.

Table I: Socio-demographic factors of the participants.

Risk Factors	Total N %
Age	
<25	48 (22.9%)
25-35	154 (73.3%)
35-45	8 (3.9%)
χ^2 (P-value)	
Gender	
Male	124 (59.0%)
Female	86 (41.0%)
Department	
Medical service	75 (35.7%)
ICU	45 (21.4%)
OPD	9 (4.3%)
Emergency service	14 (6.7%)
Delivery room	9 (4.3%)
Operation Theatre	13 (6.2%)
Surgical Service	40 (19.0%)
Laboratory service	5 (2.4%)
Profession	
Doctors	91 (43.3%)
Nursing	102 (48.6%)
Medical Technicians	17 (8.1%)
Years of Experience	
<5 years	169(80.5)
>5years	41(19.5%)
Marital status	
Married	101(48.1%)
Unmarried	108(51.9%)

Attitude of respondents to occupational hazards in health care facilities

In this study, 205 (72.2%) respondents believed that exposure and infection control policies (standard operating procedures) should be regularly reviewed and updated by the hospital management, and 102(48.6%) thought that precautions are meant only for theatre workers and when to attend to high-risk patients. In addition, 287 (99%) agreed that adequate staffing of HCFs and avoiding prolonged standing of HCWs would reduce occupational hazards, while 105 (50.0%) consider that Occupational hazards should be taken seriously and given prompt attention in the hospital. Also, 108 (51.4%) respondents believed that training staff and providing personal protective equipment are necessary to reduce the risk of exposure to occupational hazards and that occupational hazards are preventable.

Furthermore, 98(46.7%) of the respondents believe that all occupational exposures should be reported and documented by appropriate authorities. This study showed that 108 respondents, constituting 51.4%, had negative attitudes in contrast to 49.4 %, that had positive attitudes towards occupational hazards and preventive safety practices.

Table II: Distribution of knowledge among respondents.

No	Knowledge Questionnaire	Poor knowledge		High knowledge	
		Frequency	Percentage %	Frequency	Percentage %
1.	All patients, healthcare workers and communities in healthcare facilities are at risk of health care related infection	9	4.3%	201	95.7%
2.	Universal and standard precautions (infection control and management methods) Protect both health workers and patients from infection.	11	5.2%	199	94.8%
3.	There must be a management-endorsed occupational safety and health policy with regular consultations between management and hospital workers.	12	5.7%	198	94.3%
4.	It's usual to conduct training and education of workers about occupational safety and health	13	6.2%	197	93.8%
5.	Standard precautions should be applied to all patients regardless of their infectious status	26	12.4%	184	87.6%
6.	There is a demand for routine assessment of workplace health and safety risks and controls carried out by a trained person.	17	8.1%	193	91.9%
A total score of knowledge [Mean SD]		5.58 ±.702			
Good		143 (68.1%)			
Poor		67 (31.9%)			

Table III: Distribution of knowledge among respondents.

No	Attitude questionnaire	Strongly disagree	Disagree	Agree	Strongly agree
1.	Exposure and infection control policies (standard operating procedures) should be regularly reviewed and updated by the hospital management	4 (1.9%)	12 (5.7%)	205 (72.2%)	2 (0.7%)
2.	Percussions are meant only for theatre workers and when attending to high risk patients	55 (26.2%)	23 (11.0%)	30 (14.3%)	102 (48.6%)
3.	Adequate staffing of HCFs and avoiding prolonged standing of HCWs will reduce occupational hazards.	1 (0.5%)	35 (16.7%)	126 (60.0%)	48 (22.9%)
4.	Occupational hazards must be taken seriously and should be given prompt attention in the hospital	2 (1.0%)	6 (2.9%)	97 (46.2%)	105 (50.0%)
5.	Training of staff and provision of personal protective equipment is necessary to reduce the risk of exposure to the occupational hazard	1 (0.5%)	9 (4.3%)	92 (43.8%)	108 (51.4%)
6.	All exposures to occupational hazards should be reported and documented by appropriate authorities	5 (2.4%)	12 (5.7%)	95 (45.2%)	98 (46.7%)
A total score of attitudes [Mean SD]		19.41±2.35			
Good		108 (51.4%)			
Poor		102 (48.6%)			

Table IV: Distribution of practice among respondents.

Risk Factors	Total N %	Knowledge		Attitude		Practice	
		Poor	Good	Negative	Positive	Poor	Good
Age							
25-35	48 (22.9%)	14 (29.2%)	34 (70.8%)	30 (62.5%)	18 (37.5%)	30 (62.5%)	18 (37.5%)
35-45	154 (73.3%)	50 (32.5%)	104 (67.5%)	74 (48.1%)	80 (51.9%)	71 (46.1%)	83 (53.9%)
X ² (P-value)	8 (3.9%)	3 (37.5%)	5 (62.5%)	4 (50.0%)	4 (50.0%)	3 (37.5%)	5 (62.5%)
		0.303 (0.859)	3.065 (0.216)	4.416 (0.11)			
Gender							
Male	124 (59.0%)	36 (29.0%)	88 (71.0%)	65 (52.4%)	59 (47.6%)	50 (40.3%)	74 (59.7%)
Female	86 (41.0%)	31 (36.0%)	55 (64.0%)	43 (50.0%)	43 (50.0%)	54 (62.8%)	32 (37.2%)
X ² (P-value)		1.150 (0.178)	0.119 (0.419)	10.255 (0.001)*			
Years of Experience							
<5 years	169 (80.5)	52 (30.8%)	117 (69.2%)	85 (50.3%)	84 (49.7%)	78 (46.2%)	91(53.8%)
>5years	41 (19.5%)	15 (36.6%)	26 (63.4%)	23 (56.1%)	18 (43.9%)	26 (63.4%)	15 (36.6%)
X ² (P-value)		0.514 (0.295)	0.445 (0.312)	3.933 (0.035)*			
Profession							
Doctors		24 (26.4%)	67 (73.6%)	47 (51.6%)	44 (48.4%)	32 (35.2%)	59 (64.8%)
Nurses		36 (35.3%)	66 (64.7%)	50 (49.0%)	52 (51.0%)	60 (58.8%)	42 (41.2%)
Medical technicians		7 (41.2%)	10 (58.8%)	11 (64.7%)	6 (35.3%)	12 (70.6%)	5 (29.4%)
X ² (P-value)		2.493 (0.287)	1.438 (0.487)	14.052 (0.001)*			
Marital status							
Married	101 (48.1%)	31 (30.7%)	70 (69.3%)	52 (51.5%)	49 (48.5%)	48 (47.5%)	53 (52.5%)
Unmarried	108 (51.9%)	36 (33.0%)	73 (67.0%)	56 (51.4%)	53 (48.6%)	56 (51.4%)	53 (48.6%)
X ² (P-value)		0.132 (0.415)	0.00 (0.549)	0.311 (0.337)			

Practice of respondents on occupational hazards in health care facilities

As shown in **table IV**, our study showed that most respondents, 159 (75.7%), were not using PPE always regardless of the patient diagnosis, even in inpatient departments, and changed gloves for different patients. At the same time, 171 (81.4%) reported that there is poor appropriate monitoring of the health of individual health workers concerning their jobs, such as regular preventive medical examinations. Most of the respondents, 149 (71.0), state there are available procedures for post-exposure prophylaxis, such as HIV and Hepatitis B, in the hospital. Almost half of the respondents reported that they had been exposed to occupational hazards.

In addition, most of the respondents, 142 (67.6), had never been trained in infection control and management before, while 178 (84.8%) had never been vaccinated against HBV and tetanus (vaccine-preventable diseases).

Our study revealed statistically significant associations between gender and practice ($\chi^2 = 10.26, P = 0.001$), years of experience and practice ($\chi^2 = 3.933, P = 0.035$), and profession and practice ($\chi^2 = 14.052, P = 0.001$) while there were no significant differences between age ($\chi^2 = 4.416, P = 0.11$) and marital status ($\chi^2 = 3.933, P = 0.035$) in their practice. Similarly, this study had no statistically significant association between all variables and knowledge and attitude.

Table V: Association between socio-demographic factors and occupational hazard.

No	Practice Questionnaire	Poor practice		Good practice	
		Frequency	Percentage %	Frequency	Percentage %
1.	I always use PPE regardless of the diagnosis of the patient, even in hospital departments, and change gloves for different patients.	159	75.7%	51	24.3%
2.	There is appropriate monitoring of the health of individual health workers in relation to their jobs, such as regular preventive medical examinations	171	81.4%	39	18.6%
3.	There is available procedures for post-exposure 149 prophylaxis, such as, for HIV, Hepatitis B in the hospital	71.0%	61	29.0%	
4.	Ever exposed to occupational hazards	106	50.5%	104	49.5%
5.	I have been trained in infection control and management before	142	67.6%	68	32.4%
6.	I am vaccinated against HBV, tetanus (vaccine-preventable diseases)	178	84.8%	32	15.2%
A total score of practice				1.69±1.34	
Poor				104(49.5%)	
Good				106(50.5%)	
Poor				102 (48.6%)	

Discussion

Healthcare facilities are places of work where healthcare-associated diseases are common. Lack of suitable protective measures, excessive workload, and poor training of workers on safety standards, among other factors, could exacerbate the situation, particularly in developing nations. Occupational dangers, injuries, and infections are common among healthcare workers.

The situation in a tertiary HCF, which should be recognized and copied as an example of good practices in the health care industry, was investigated to determine the scale of occupational hazards and problems.

Nurses made up about half of the respondents in our study. This is comparable to a study done previously⁶. The mean age of respondents was 28 years, lower than 33 years reported by Aluko et al.².

According to the Oxford Concise Dictionary, knowledge is information and skills gained through experience and/or education. In HCFs, understanding potential occupational health and safety is critical to developing a positive attitude that will guide behavior. In this aspect, most responders were aware of potentially dangerous circumstances regarding occupational safety and health. Unlike Anisha⁶ and Viragi et al.⁷, over half of the respondents in our study received a good knowledge rating in the questionnaire.

In our study, most of the respondents knew that healthcare workers and communities in healthcare facilities are at risk of healthcare-related infection. Similarly, most of them knew Universal Precautions, and Standard Precautions (infection control and management methods) protect health workers and patients from infection. Despite having a good knowledge of that, there must be a

management-endorsed occupational safety and health policy with regular consultations between management and hospital workers; only 34% of our respondents had formal infection control and management training. Most respondents in comparable studies in the Indian city of Belgaum and the Nigerian city of Ile Ife learned about occupational hazards and safety procedures via post-employment seminars, which was at variance with the results of this study^{7,8}.

Due to the particular nature of their profession, healthcare workers are exposed to a variety of occupational hazards⁹. Consequently, this study looked at preventive coping mechanisms. Most of our respondents didn't wear personal protective equipment regardless of the patient's status of the disease. This may be because most of our participants didn't have formal training in infection control precautions.

Since the majority of respondents (50.5%) were at risk of occupational hazards, the exposure risk was considerably high in our study. But this percentage is far less than the previous studies by Orji et al. (10), Manyele et al.¹¹ Amosun et al.¹² and Enwere and Diwe¹³.

According to the respondents' profession and sex findings, categories were strongly correlated with practice, while the experience was also related to practice, comparable to Tziaferi et al.¹⁴. According to the reasonable model, people with a high level of expertise have more than five years of experience¹⁵. To implement safety measures that will reduce the prevalence of occupational hazards in the HCF, Respondents' actions, on the other hand, were unaffected by age or marital status, and respondents' knowledge and attitude toward workplace dangers and safety practices were unaffected by any factor.

Conclusion

All staff members should have access to sufficient safety kits, timely replacement of worn-out ones, and modern job aids based on their assigned tasks.

Health care personnel should get institutionalized pre-employment, ongoing, and safety preventive training on job hazards and safety measures.

Government, employers, management of companies, and employees all work together to effectively manage

occupational health and safety. The management of occupational health and safety must be governed by national policy in order to keep undesired aspects as far away from the workplace as feasible. To ensure that everyone has a decent place to work, management and employers must also be committed to workplace health and safety. Additionally, it is the obligation of the employee to follow safety regulations.

Conflict of Interest

The authors report no conflicts of interest.

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