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Original Research Article

Factors contributing to occupational injuries and ill health among healthcare workers in selected hospitals in Nairobi County

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ABSTRACT

Background: In the context of the highly complex and hazardous work environment, particular challenges arise in pursuing protections for healthcare workers in this unique employment sector. Due to its unique mission of caring for the sick, self-preservation behaviors which normally aid in protecting workers are suspended in a culture of selfless commitment to patient care. The objective of this study is to investigate factors influencing occupational injuries and hazards among healthcare workers in selected hospitals in Nairobi County.
Methods: Descriptive cross-sectional study design was used. The scope included Kenyatta national hospital, Mama Lucy hospital, and Pumwani maternity hospital. A structured questionnaire and an observational checklist were used to collect information. A sample size of 304 healthcare workers was selected. Univariate and multivariate analysis was carried out to assess the association of study variables. Findings are presented in tables.
Results: This research found that most of the healthcare workers (65.5%) are exposed to health hazards the commonest being cuts, wounds and lacerations (34.2%). The leading predisposing factors to health hazards are job related pressure (39.5%) and not wearing necessary PPEs (39.1%). There was a statistically significant relationship between experience of work-related injury and lack of enough supplies/materials and poor working environment ($p<0.005$).
Conclusions: The study recommends that there should be much focus on creating awareness of occupational health hazards at the hospitals by the relevant stakeholders, preventive measures that will incorporate manageable workloads to reduce work-related pressure on the healthcare workers.

Keywords: Occupational injuries, Healthcare workers, Hospitals, Institutional factors

INTRODUCTION

Healthcare workers continue to experience injuries and illnesses at the workplace despite the existence of control measures to prevent or reduce their exposure to work-related occupational health hazards.[1] Non-fatal occupational injuries and illnesses among healthcare workers are ranked among the highest in any industry sector. Conversely, agriculture and construction, two of the most hazardous industries, are today safer than a decade ago. Prevention of infections resulting from exposure of healthcare workers to blood borne pathogens include immunization against hepatitis B virus (HBV), elimination of avoidable injections, implementation of universal precautions, elimination of needle recapping, disposing of sharps into appropriate containers after use, use of needles that sheath or retract after use, use of personal protective equipment, and training workers on the risks and prevention of transmission. Post-exposure prophylaxis with antiretroviral medications can reduce the risk of HIV transmission by 80%.[2]

More than 59 million workers are exposed to a complex variety of health and safety hazards every day. These include biological hazards such as tuberculosis (TB), hepatitis, HIV/AIDS and severe acute respiratory syndrome (SARS); chemical hazards for instance glutaraldehyde and ethylene oxide; physical hazards such as noise, radiation, slips, trips and falls; ergonomic hazards like heavy lifting; psychosocial hazards such as shift work, violence, and stress; fire and explosion hazards such as using oxygen, alcohol sanitizing gels; and electrical hazards such as frayed electrical cords.[3] It is counter-intuitive that the healthcare industry, whose mission is the care of the sick, is itself a "high-hazard" industry for the workers it employs. This industry sector consistently demonstrates poor workforce injury and illness statistics, among the highest in the United States and the European Union (EU), about 30% higher than the average work-related accident rate.[4] In both the United States and the EU, about 10% of all workers are employed in the healthcare sector. With such a large portion of the global workforce being employed in this high-hazard sector and with forecasts for the increasing need for health workers in future, magnitude of the health threat is considerable and demands address.[5]

Work-related and daily life stress to the healthcare workforce can be very detrimental to the physical and emotional well-being of workers as they are the frontline soldiers in the healthcare systems. Optimizing their health is a priority as they need to take care of the sick people. Identification of hazardous environments and exposure to injuries influence service delivery. There was an average of 6.8 work-related injuries among 100 full-time workers in the USA. On top of the list are musculoskeletal injuries followed by needle stick injuries, infections from patients, ergonomic related injuries, and psychological problems. Such environments play a big role in the high level of staff absenteeism. Risk identification and prioritization are key to improving the integrity of any organization.[6]

Workplace injuries and illnesses not only inflict physical harm and disability to the worker but also in many other ways. Injuries can prevent hospital workers from doing the job they love: caring for patients. Their lives are disrupted. In the case of irreversible serious injury or illness, workers are required to change careers, which affect their role in society, their identity, and the income their families may depend on. As institutions devoted to healing the sick, hospitals should envisage protecting their workers from harm as a natural extension of their mission. In the event an employee gets hurt on the job, the employer pays the price in many ways. While some of these costs are difficult to quantify, a single serious injury can lead to losses of tens of thousands of dollars or more. Workers' compensation claims include medical costs to treat or recover from the illness or injury, compensation for wages lost, indemnity, and administrative costs.[7] Occupational exposure to blood or other body fluids in healthcare facilities constitutes a significant risk of transmission of HIV and other blood borne pathogens to healthcare workers. HIV/AIDs, in particular, is a major threat in the workplace. Occupational risks associated with exposure affect the quality of care delivered as well as health-care workers' safety and well-being. As a results exposed workers experience significant fear, anxiety and emotional distress that can result in occupational and behavioral changes.[8] Occupational risks associated with exposure in health workers' places of work are enormous and places the workers at high risk of HIV and other blood borne pathogens. These affect quality of service delivery and HCWs safety is compromised. This leads to fear, anxiety and emotional stress that will bring change to workers' behavior. Out of 35 million HCWs globally, it is estimated that 90% of 3 million percutaneous exposures occurring annually are in developing countries. A further 2.5% exposed to HIV, 40% HBV and HCV. Annually, it is estimated that 66,000 HBV, 16,000 HCV and 1,000 HIV infections affect HCWs. Only proper prevention of infections can reduce these kinds of exposures.[9]

Occupational infections and injuries subject the healthcare worker and family to economic, physical and psychological damage. Exposing healthcare workers (HCWs) to hazardous waste results in disease or injury. The annual prevalence of infections and sharps injuries among HCWs in Kenya are approximately 6,000 hepatitis B virus (HBV) followed by 1,000 and 100 hepatitis C virus (HCV) and HIV infections respectively.[10] It is estimated that 70% of the health facilities in Kenya do not employ proper waste management techniques putting 58% of health workers at the risk of injuries of whom 30% observed inappropriate recapping of needles as one of the main causes of needle stick injuries. Further, compliance environmental audits conducted in different healthcare settings dictate that there exist several challenges associated with managing medical wastes. Despite the high prevalence of occupational injuries among health care workers, the associated risk factors have not been exhaustively identified which creates a gap in occupational health risk management. This research is therefore aimed at assessing the factors contributing to occupational injuries and ill health amongst healthcare workers in selected hospitals in Nairobi County. The study was guided by the following specific objectives: To identify types of occupational injuries/ hazards and ill health among healthcare workers in selected hospitals in Nairobi County, to determine human factors contributing to occupational injuries and ill health among healthcare workers in selected hospitals in Nairobi County and to establish institutional factors contributing to occupational injuries and ill health among healthcare workers in selected hospitals in Nairobi County.

METHODS

Participants and study site

Descriptive cross-sectional design containing both qualitative and quantitative methods was used to assess

factors contributing to occupational injuries and to identify the common health hazards affecting healthcare workers in selected hospitals in Nairobi County. The scope of the study will be the Kenyatta national hospital, Pumwani maternity hospital and Mama Lucy Kibaki Hospital. The inclusion criteria were all categories of healthcare workers in Kenyatta national hospital, Pumwani maternity hospital and Mama Lucy Kibaki hospital who were willing to participate in the study by signing an informed consent form. Healthcare workers who were not willing to participate in the study and/or were not on duty during the study period were excluded. A stratified sampling technique used in this study. Each profession of healthcare workers represented a stratum.

Data collection

A structured questionnaire was used to gather information on bio data, types of hazards in the healthcare facility, proportion of healthcare workers with occupational injuries and human factors influencing occupational injuries. An observational checklist was used as a standard guideline to assess the institutional risk factors contributing to occupational injuries and ill health among healthcare workers and the facility's preparedness in the prevention of occupational health hazards. Data was collected during both day and night shifts to reduce recruitment bias. Once recruited, the respondents were taken to a private room or place where the purpose of the study and the benefits of participation were explained to them by the research assistants. In addition, a consent form with detailed information about the study was availed to the selected respondents for more information. The respondents were then given time to ask questions or clarification if any concerning the study. Once all their questions were answered, they were asked to give consent by signing the consent certificate to confirm agreement to participate. Consent to do the assessment was sought from the hospital administration without informing the respondents. Once respondents filled their questionnaires, they were clearly labeled with a code number and date. Filled questionnaires were safely stored in a zipped folder until the sample size was achieved. The study collected data for a period between July 2018 to Oct 2018.

Data analysis

The collected data was analyzed using both quantitative and qualitative data analysis approaches. A quantitative approach was descriptive, where frequencies and percentages were used. Data from the questionnaire were coded with the help of statistical package for social science (SPSS) version 26. Descriptive statistics such as frequencies, percentages, mean and standard deviation were used to summarize and describe the data. Inferential statistics such as Chi-square used to show relationships between dichotomous variables and odds ratio to estimate the multivariate predictive value of independent covariates for occupational injuries. Correlation was used to assess linearity, linear regression to assess predictive measures.

A univariate analysis was done between experience of work-related injuries and presences of hazards, individual-related factors, facility-related factors and occupational injuries. The predictive value for each covariant was expressed as relative risk (RR) and 95% confidence interval. A $p<0.05$ considered on both sides.

RESULTS

All the sampled healthcare workers returned their filled questionnaires to the research assistants attaining a response rate of 100%. This is due to clear inclusion criteria where only those willing to participate in the study were consented and ease of contact with the participants. Results of the study have been presented using both frequency tables, bar graphs and pie charts.

Socio demographic characteristics of the study respondents

The study sample was drawn from healthcare workers in selected hospitals in Nairobi County namely Kenyatta national hospital (KNH), Mama Lucy Kibaki hospital (MLKH) and Pumwani maternity hospital (PMH). The majority of the respondents came from KNH (84.5%) while 8.2% and 7.2% were from MLKH and PMH respectively. Of the 304 healthcare workers sampled, half were aged 30 years and below with an overall mean age of 34.1 years, SD=10.2. The mean age for KNH was 34.9±10.3 compared to that of MLKH with 29.1±9.8 and PMH 30.9±6.4. Female respondents constituted more than half (59.5%) of the study sample. 56.3% of the sampled healthcare workers were married. Nurses comprised 42.4% of the sample while slightly more than half (56.2%) of the respondents had worked for up to 5 years. Details are as shown in Table 1.

Forty two percent (n=129) of the respondents were nurses while 24.3% (n=79) were support staff. A half of the respondents (50%) aged up to 30 years and 43.1% of the respondents aged between 31 to 50 years indicating a sample balance between the young and old employees with an average age of 34.1 years. The aging work force pose a high risk of increased frequency and severity of work-related injuries where 61.9% (n=13) out of a total of 21 healthcare workers aged 51 years and above and had experienced work-related injuries in the last three months comparable to OSHA 2013. Females were the majority (59.5%) compared to 40.5% of males. Most of respondents (56.3%) married while more than half in professions that made them come into direct contact with patients. Similarly, about three-quarters of respondents had work experience of more than one year. On other hand, married health workers were seemingly more affected because they majority in the study population. Most of the nurses were females; KNH had 56.4% (n=145), MLKH (72.0%, n=18) and PMH had (81.8%,

n=18). Female health workers more likely to get work-related injury/illness/trauma than their male counterparts. This is due to their superior numbers in clinical services.

Objective 1: Types of occupational injuries and ill health among healthcare workers

There was no association between work-related injuries and type of hazards as shown in Table 2.

Objective 2: Human factors contributing to occupational injuries and ill health among healthcare workers

Respondents who were not trained on occupational health hazards were 1.89 times more likely to experience work-related injury/illness/ trauma than those who were trained, χ^2=5.6, p=0.018, OR=1.89 (95% CI: 1.111, 3.229). Similarly, respondents who trained on occupational health hazards more than 3 years ago 0.09 more likely to experience work-related injury/ illness/ trauma than those who trained less than 3 years ago, χ^2=11.703, p=0.001, OR=0.091 (95% CI: 0.021, 0.394). Females 0.23 less likely to experience work-related injury/ illness/ traumaχ^2=4.38, p=0.036, OR=0.225 (0.073-0.699). Details are shown in Table 3.[11]

Objective 3: Institutional factors contributing to occupational injuries and ill health among healthcare workers

Table 4 shows that the relationship between experience of pressure at work place, workload, poor working environment, lack of supplies and having been given BCG vaccine, and experience of work related injury/ illness/ trauma statistically significant χ^2=62.872, p=0.000, OR=7.456 (95% CI: 1.621, 34.304); χ^2=29.736, p=0.000, OR=0.663 (95% CI: 0.157-2.787); χ^2=33.777 p=0.000, OR=9.268 (95% CI: 2.076-41.376), χ^2=23.816, p=0.000, OR=2.463 (95% CI: 1.300-4.666 and χ^2=11.945, p=0.001, OR=2.463 (95% CI: 1.300-4.666 respectively.

Working under pressure and heavy workload increased likelihood of sustaining work-related injury/ illness/ trauma.

Tiredness and fatigue caused by the work pressure and workload can lead to high anxiety levels and stress hence carelessness at the workplace high chances of making mistakes.

Table 1: Socio-demographic characteristics of study participants.

Characteristic	Hospital, N (%)			Total, N (%)
	KNH	MLKH	PMH	
Age group (Years)				
20-30	120 (39.5)	18 (5.9)	14 (4.6)	152 (50.0)
31-40	59 (19.4)	4 (1.3)	6 (2.0)	69 (22.7)
41-50	59 (19.4)	1 (0.3)	2 (0.7)	62 (20.4)
51 and above	19 (6.3)	2 (0.7)	0 (0.0)	21 (6.9)
Total	257 (84.5)	25 (8.2)	22 (7.2)	304 (100)
Mean (SD)	34.9 (10.3)	29.1 (9.8)	30.9 (6.4)	34.1 (10.2)
Marital status				
Single	104 (34.2)	18 (5.9)	8 (2.6)	130 (42.8)
Married	151 (49.7)	7 (2.3)	13 (4.3)	171 (56.3)
Divorced	1 (0.3)	0 (0.0)	0 (0.0)	1 (0.3)
Widowed	1 (0.3)	0 (0.0)	1 (0.3)	2 (0.7)
Total	257 (84.5)	25 (8.2)	22 (7.2)	304 (100)
Profession				
Nurses	113 (37.2)	8 (2.6)	8 (2.6)	129 (42.4)
Support staff	72 (23.7)	1 (0.3)	1 (0.3)	74 (24.3)
Administration	29 (9.5)	3 (1.0)	6 (2.0)	38 (12.5)
Laboratory	13 (4.3)	1 (0.3)	1 (0.3)	15 (4.9)
Health records	12 (3.9)	1 (0.3)	1 (0.3)	14 (4.6)
Clinicians	6 (2.0)	6 (2.0)	1 (0.3)	13 (4.3)
Other professions	12 (3.9)	5 (1.6)	4 (1.3)	21 (6.9)
Total	257 (84.5)	25 (8.2	22 (7.2	304 (100)
Work experience (years)				
<1	63 (20.7)	14 (4.6)	4 (1.3)	81 (26.6)
1-5	73 (24.0)	6 (2.0)	11 (3.6)	90 (29.6)
6-10	32 (10.5)	2 (0.7)	2 (0.7)	36 (11.8)
>10	89 (29.3)	3 (1.0)	5 (1.6)	97 (31.9)
Total	257 (84.5)	25 (8.2)	22 (7.2)	304 (100)

Table 2: Relationship between work-related injury/illness/trauma and types of hazards.

Types of hazards		Experience of work-related injury/ illness/ trauma at the workplace, N (%)		Total, n (%)	χ^2(p)	OR (95% CI)
		Yes	No			
Biological hazards	Yes	32 (10.5)	20 (6.6)	52 (17.1)	0.43 (0.514)	0.694 (0.277-1.740)
	No	167 (54.9)	85 (28.0)	252 (82.9)		
Chemical hazards	Yes	55 (18.1)	30 (9.9)	85 (28.0)	0.03 (0.863)	0.705 (0.294-1.692)
	No	144 (47.4)	75 (24.7)	219 (72.0)		
Physical hazards	Yes	73 (24.0)	27 (8.9)	100 (32.9)	3.75 (0.053)	2.068 (1.056-4.049)
	No	126 (41.4)	78 (25.7)	204 (67.1)		
Radiological hazards	Yes	13 (4.3)	10 (3.3)	23 (7.6)	0.88 (0.348)	0.772 (0.277-2.149)
	No	186 (61.2)	95 (31.3)	281 (92.4)		
Ergonomic hazards	Yes	8 (2.6)	2 (0.7)	10 (3.3)	0.97 (0.325)	2.311 (0.432-12.368)
	No	191 (62.8)	103 (33.9)	294 (96.7)		
Behavioral hazards	Yes	24 (7.9)	7 (2.3)	31 (10.2)	2.18 (0.139)	1.578 (0.600-4.148)
	No	175 (57.6)	98 (32.2)	273 (89.8)		

Table 3: Relationship between work-related injury/illness/trauma and individual factors.

Socio-demographic characteristics		Experience of work-related injury/ illness/ trauma at the workplace, N (%)		Total, n (%)	χ^2 (p)	OR (95% CI)
		Yes	No			
Age groups (years)	≤34	110 (36.2)	70 (23.0)	180 (59.2)	3.692 (0.055)	1.351 (0.370-4.930)
	>34	89 (29.3)	35 (11.5)	124 (40.8)		
Gender	Male	72 (23.7)	51 (16.8)	123 (40.5)	4.38 (0.036)	0.225 (0.073-0.699)
	Female	127 (41.8)	54 (17.8)	181 (59.5)		
Marital status	Married	115 (37.8)	55 (18.1)	170 (55.9)	0.816 (0.366)	0.438 (0.119-1.617)
	Single	84 (27.6)	50 (16.4)	134 (44.1)		
Training on OHH	Yes	74 (24.3)	25 (8.2)	99 (32.6)	5.600 (0.018)	1.894 (1.111-3.229)
	No	125 (41.1)	80 (26.3)	205 (67.4)		
Past years after training on OHH	≤3	33 (33.3)	21 (21.2)	54 (54.5)	11.703 (0.001)	0.091 (0.021-0.394)
	>3	41 (41.4)	4 (4.0)	45 (45.5)		
Hours worked per week	≤40	148 (51.2)	74 (25.6)	222 (76.8)	0.142 (0.706)	0.736 (0.140-3.867)
	>40	43 (14.9)	24 (8.3)	67 (23.2)		
Wearing PPE as necessary	Yes	178 (58.6)	88 (28.9)	266 (87.5)	1.997 (0.158)	1.637 (0.822-3.260)
	No	21 (6.9)	17 (5.6)	38 (12.5)		
Hours slept per day (Hours)	<8	143 (47.0)	71 (23.4)	214 (70.4)	0.593 (0.441)	1.220 (0.340-4.373)
	≥8	56 (18.4)	34 (11.2)	90 (29.6)		
Alcohol intake to work	Yes	15 (4.9)	5 (1.6)	20 (6.6)	0.862 (0.353)	1.630 (0.576-4.617)
	No	184 (60.5)	100 (32.9)	284 (93.4)		

NB: Yes=199, no=105, total=304.

Table 4: Relationship between work-related injury/illness/trauma and working environment.

Experience of pressure at workplace		Experience of work-related injury/ illness/ trauma at the workplace, N (%)		Total, n (%)	χ^2 (p)	OR (95% CI)
		Yes	No			
Experience of pressure at workplace	Yes	165 (54.3)	40 (13.2)	205 (67.4)	62.872 (0.000)	7.456 (1.621-34.304)
	No	34 (11.2)	65 (21.4)	99 (32.6)		
Workload	Yes	135 (44.4)	37 (12.2)	172 (56.6)	29.736 (0.000)	0.663 (0.157-2.787)
	No	64 (21.1)	68 (22.4)	132 (43.4)		

Continued.

Experience of pressure at workplace		Experience of work-related injury/ illness/ trauma at the workplace, N (%)		Total, n (%)	χ^2 (p)	OR (95% CI)
Bad relationship with my boss	Yes	10 (3.3)	2 (0.7)	12 (3.9)	1.765 (0.184)	0.433 (0.059-3.191)
	No	189 (62.2)	103 (33.9)	292 (96.1)		
Bad relationship with my colleagues	Yes	11 (3.6)	1 (0.3)	12 (3.9)	3.795 (0.051)	1.966 (0.168-22.983)
	No	188 (61.8)	104 (34.2)	292 (96.1)		
Poor working environment	Yes	60 (19.7)	2 (0.7)	62 (20.4)	33.777 (0.000)	9.268 (2.076-41.376)
	No	139 (45.7)	103 (33.9)	242 (79.6)		
Lack of many supplies and materials	Yes	68 (22.4)	9 (3.0)	77 (25.3)	23.816 (0.000)	2.463 (1.300-4.666)
	No	131 (43.1)	96 (31.6)	227 (74.7)		
BCG vaccine	Yes	155 (51.0)	62 (20.4)	217 (71.4)	11.945 (0.001)	2.463 (1.300-4.666)
	No	44 (14.5)	43 (14.1)	87 (28.6)		
Hepatitis B vaccine	Yes	138 (45.4)	66 (21.7)	204 (67.1)	1.311 (0.252)	1.008 (0.535-1.899)
	No	61 (20.1)	39 (12.8)	100 (32.9)		
Hepatitis A vaccine	Yes	37 (12.2)	21 (6.9)	58 (19.1)	0.088 (0.767)	1.367 (0.639-2.924)
	No	162 (53.3)	84 (27.6)	246 (80.9)		

NB: yes=199, no=105, total=304.

DISCUSSION

The study found that majority of the respondents were nurses. These findings are comparable to Gomaa in a study conducted in United assessing occupational traumatic injuries among workers in healthcare facilities.[12] The finding from the study revealed that, nurses and nurse assistants had the highest injury rates of all cadres examined in the study. Similarly, Tankha asserted that nurses were more likely to be affected by occupational injuries due to their high numbers and direct interaction with patients.[13] A half of the respondents (50%) aged up to 30 years and 43.1% of the respondents aged between 31 to 50 years indicating a sample balance between the young and old employees with an average age of 34.1 years. The aging work force pose a high risk of increased frequency and severity of work-related injuries where 61.9% (n=13) out of a total of 21 healthcare workers aged 51 years and above and had experienced work-related injuries in the last three months comparable to OSHA 2013. Females were the majority (59.5%) compared to 40.5% of males. Most of the respondents were (56.3%) were married while more than half were in professions that made them come into direct contact with patients. Similarly, about three-quarters of the respondents had work experience of more than one year. On the other hand, married health workers were seemingly more affected because they were the majority in the study population. Similar results were obtained in a study done in Canada.[14]

The study established that working under pressure and heavy workload increased the likelihood of sustaining work-related injury/illness/trauma. Moreover, the tiredness and fatigue caused by the work pressure and workload can lead to high anxiety levels and stress hence carelessness at the workplace high chances of making mistakes. The results in the study could be compared to those of a study conducted in cross river State Nigeria which indicated that 95% of the respondents felt stressed due to work-related stress.[15] The researcher noted no relationship between bad relations with the boss, bad relationship with colleagues and having had hepatitis A or B vaccines. The opposite was, however, true of BCG vaccine and poor working environment.

Limitations

The study faced challenges that were beyond the control of the researcher in the research process. The respondents were required to recall all incidents of medical injuries in their past. It is therefore highly possible that the respondents may not have recalled all the incidents. Furthermore, the generalization of findings from this research may only be limited to healthcare workers in similar setups.

CONCLUSION

The study concludes that 37.2% (n=113) healthcare workers correctly cited 'occupational dangers at the workplace' as the meaning of the term 'occupational health hazards. Almost a third of the respondents (32.9%, n=100) identified physical hazards as a class of health hazards. This research also concludes that most of the healthcare workers (65.5%) are exposed to health hazards the commonest being cuts, wounds and lacerations (34.2%). The leading predisposing factors to health hazards are job related pressure (39.5%) and not wearing necessary PPEs (39.1%). The study also concludes that inadequate training of the health hazards is one of the human factors contributing to occupational health hazard where only 32.6% (n=99) workers had been trained. Training had been recently done (3 years ago) for 54.5% of those trained. Sixty-seven (22.1%) respondents worked for more than 40 hours a week, 12.5% did not wear personal protective equipment whenever necessary. Pressure experienced at the workplace was mainly due to

heavy workload (83.9%, n=172). Vaccine utilization was not fully done. BCG vaccine was the most utilized (71.4%), hepatitis B (67.1%) and hepatitis A (19.1%). The study also concludes that institutional factors contributing to occupational injuries include availability of PPEs, availability of color-coded waste disposal bins, hand hygiene among others. Gloves were available in all the three hospitals studied (100%, n=40) while goggles (10%, n=4) similar to helmets were largely unavailable. More than a half of the respondents (55%, n=22) were in a good working environment, availability of necessary equipment and supplies (45%, n=18) resources, and those who received immunizations and post-exposure preventive services (50%, n=20) in each category. There was a statistically significant relationship between experience of work-related injury and lack of enough supplies/ materials and poor working environment ($p<0.005$).

Recommendations

The study recommends that there should be much focus on creating awareness of occupational health hazards at the hospitals by the relevant stakeholders, preventive measures that will incorporate manageable workloads to reduce work-related pressure on the healthcare workers. The study recommends that the hospitals should adequately train staff on occupational dangers through continuous CMEs, workshops and refresher courses to ensure that healthcare workers are well informed about dangers in the work place and how to possibly avoid them. The study also recommends provision of adequate resources, PPEs, disinfectants/sterilizers to enable implementation of good practices as well as enforcing safety policies and guidelines in order to avoid work-related injury/illness/trauma.

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