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Magnitude of occupational injuries and associated factors among health workers in Bench Sheko Zone, South West People's Regional State, Ethiopia

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Abstract

Background: An occupational injury is any personal injury, disease, or death resulting from an occupational accident, but there are significant knowledge gaps in resource-limited settings often reveal. Therefore, this study aims to assess Occupational injuries and associated factors among health workers in Bench Sheko Zone, South West People's Regional State, Ethiopia.

Methods: A health facilities-based cross-sectional study design was conducted in the Bench Sheko Zone, Southwest Ethiopia, from March to April 2023. A total of 310 healthcare professionals were involved in the study. The collected data were entered into Epi Data Manager V4.6.0.6 and exported into SPSS for analysis. Descriptive statistics are used to describe study variables. A logistic regression model was used to identify the factors associated with occupational injuries and a multivariable analysis was used to identify the factors of occupational injuries at a significant level of a 95% CI and a p-value of < 0.05.

Results: The magnitude of occupational injuries among healthcare professionals in public health facilities was 41.3%. Moving heavy objects including patients [AOR: 2.11 95% CI (1.07-4.13)], improper disposal of sharps [AOR: 10.28 95% CI (5.46-19.35)], inadequate personal protective equipment [AOR: 3.63 95% CI (1.60-8.21)] and inadequate number of healthcare professionals [AOR: 2.29: 95% CI (1.13-4.60)] were factors significantly associated with occupational injuries in public health facilities.

Conclusion: The magnitude of occupational injuries is high. Therefore, public health initiatives are essential for promoting injury prevention, advocating for stronger safety regulations, and ensuring equitable access to care and rehabilitation services for all workers.

keywords: Occupational injuries, Healthcare, Public Health Facilities

Introduction

Globally, occupational injuries are a serious concern for healthcare workers, with an estimated 3 million experiencing sharp injuries annually out of a total of 35 million healthcare providers [1]. These injuries pose a major risk for the transmission of infections such as HIV and hepatitis viruses [2]. The World Health Organization (WHO) estimates that sharp injuries to healthcare workers in 2000 resulted in 16,000 hepatitis C virus (HCV) infections, 66,000 hepatitis B virus (HBV) infections, and 1,000 human immunodeficiency virus

(HIV) infections [3]. These infections are projected to cause 145 premature deaths due to HCV, 261 due to HBV, and 736 due to HIV between 2000 and 2030 [3], [4]. Occupational injuries and diseases affect more than 260 million people worldwide per year, with approximately 2.3 million of the 260 million dying. Of the 2.3 million who die, approximately 318,000 people die due to occupational injuries, while nearly 2.02 million die due to occupational diseases. Developed countries provide more comprehensive reports on occupational injuries and illnesses, while such data is usually underreported in developing countries [5]. Additionally, in sub-Saharan Africa, healthcare workers face a disproportionately higher burden of occupational exposure to infectious diseases compared to developed countries [3]. The lifetime prevalence of needle stick injuries in this region has been reported to range from 22% to 95%, while the one-year prevalence ranges from 39% to 91% [3]. According to WHO estimation, the annual exposure to blood pathogens through percutaneous accounts for three million worldwide, of which 2 million, 0.9 million, and 170 000 healthcare professionals were exposed to hepatitis B Virus (70 000 contracted), Hepatitis C Virus (150 000 contracted) and Human Immunodeficiency Virus (500 contracted) respectively of which more than 90% occurred in developing countries especially sub-Saharan Africa [6], [7]. According to recent estimates released by the ILO, each year, 2.78 million workers die from occupational accidents and work-related diseases (of which 2.4 million are disease-related) and an additional 374 million workers suffer from non-fatal occupational accidents. It is estimated that lost work days globally represent almost 4 percent of the world's GDP [8], [9]. In different studies done in Ghana, Western Ethiopia in Gambela, and Northwest Ethiopia in Gonder, participants reported an occupational injury within the past year for a 12-month prevalence of 29.3%,36.5%, and 57.46%, respectively [4], [10], [11]. Three blood-borne pathogens, hepatitis B (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV), are the most frequently feared of the 20 known to cause diseases like malaria, syphilis, and hemorrhagic fever [9]. The studies from different settings on occupational injuries among healthcare professionals underscore the urgent need for comprehensive, localized research. Such research should aim to establish baseline prevalence and incidence rates, identify specific contextual risk factors, quantify the impact of injuries on HCPs and the healthcare system, evaluate the effectiveness of existing interventions, and explore perceptions and attitudes towards safety [4], [10], [12]. Addressing these gaps through rigorous epidemiological studies, qualitative inquiries, and intervention research is paramount for developing evidence-based and sustainable strategies to protect the health and safety of healthcare professionals in this vital region. Therefore, this study aimed to assess Occupational injuries and associated factors among health workers in Bench Sheko Zone, South West People's Regional State, Ethiopia.

Methods

Study area and period

The study was conducted in selected public health facilities that are found in the Bench Sheko zone from March to April 2023. Bench Sheko Zone is one of the six zones found in the South West Ethiopia People's Region. There are two administrative cities and six woredas in the Bench Sheko Zone. The capital of Bench Sheko Zone is MizanAman. The distance to Ethiopia's capital city of Addis Ababa is 561 kilometers. The zone has a total population of 665,197, of which 329,073 are men and 336,124 are women. There are a total of 28 public health facilities in this area, including 2 hospitals and 26 health centers, with 609 total healthcare providers according to data taken from the Bench Sheko Zone health department. The number of health facilities in Semen Bench Woreda is 3, in South Bench Woreda is 6, and in Mizan town is 3. This study was conducted in two woredas (North bench and South bench) and one administrative town (MizanAman), found in Bench Sheko zone's six woredas and two administrative towns. From the total of 8 districts in the Bench Sheko zone, 3 districts (37%) were randomly selected for the study. From these 3 selected districts, there are a total of 12 PHFs. From this, 5(42%) PHFs were randomly selected for the study. These selected public health facilities were Mizan Tepi University Teaching Hospital, Beer Health Center, Mizan Health Center, Kite Health Center, and Genja Health Center.

Study design

An institution-based cross-sectional study design was conducted in selected public health facilities found in the Bench Sheko zone, in southwest Ethiopia.

Source population

All healthcare professionals working in public health facilities of the Bench Sheko zone were considered the source population.

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Study population

Selected healthcare professionals in the selected public health facilities who fulfilled the eligibility criteria were included in the study.

Inclusion and Exclusion Criteria

Healthcare professionals who performed medical and surgical procedures or who had direct contact with patients in their day-to-day activities, and who had worked in public health facilities for one or more than one years. Healthcare professionals who had worked in public health facilities for less than one year were excluded from the study.

Sample size determination

For the first objective, a single population proportion formula was used to calculate the sample size considering the following assumptions: a confidence interval of 95% (Z/2 = 1:96) was taken, a margin of error of 5% (d=0.05) was considered, design effect 1.5 was taken and 36.5% proportion was taken from a previous study done in Gambella and finally maintained 534 sample size (10). For the second objective, the sample size was computed by Epi Info version 7.2, statistically for a cross-sectional study under the following assumptions: a marginal error of 5%, a power 80% with a CI of 95%, and an exposed-to-unexposed ratio of 1:1; the statistician uses the following formula to calculate the sample size(4,10). Since the sample size estimation by the single population proportion formula was a larger sample size, it was taken because it more closely represents the study; therefore, the sample size for this study was 534. Since the source population was less than 10,000, a finite population proportion formula was used. A non-response rate of 10% was added. Then, the final sample size determined was 314.

Sampling technique and procedure

The study was carried out using a multi-stage sampling method. From the total of 8 districts in the Bench Sheko zone, 3 districts (37%) were randomly selected for the study. From these 3 selected districts, there were a total of 12 PHFs. From these 5(42%) PHFs (one Hospital and four Health centers) were selected by lottery method for the study. To select the different categories of health professionals, stratified sampling techniques were used by proportional allocation based on the number of HCPs found in each HCF. Finally, 314 HCPs were selected by simple random sampling techniques and they were interviewed.

Study variables

Outcome variables: Occupational injuries. The Independent variables/predictors are Age, sex, marital status, educational status, work experience, professional category, stress at work, working hours, fixed breaks, work shifts, moving heavy objects including patients, inadequate personal protective equipment, number of staff, trained in occupational health safety, improper dispose of sharps, hand washing practice before and after the procedure, waste segregation, unavailability of soap and water.

OPERATIONAL DEFINITIONS

Occupational injuries refer to cuts or pricks from a needle or other sharp object, blunt injury from a fall or being hit by an object, or a physical injury or threat of such from violence, or at least one injury at the workplace that occurred during the past year [5]. **Health care professionals** refer to those who deliver care and service to the sick as doctors, nurses, health officers, midwives, laboratory technicians, pharmacists, anesthetists, and radiologists. **Needle-stick injuries** refer to puncture wounds to the skin or mucous membrane with unsterilized and/or contaminated objects. **Personal protective equipment**, referred to as ”PPE”, is equipment worn to minimize exposure to hazards that cause serious workplace injuries and illnesses. (Gloves, gowns, shoe covers, head covers, masks, respirators, eye protection, face shields, and goggles) [5].

Data collection process

Data was collected by using a structured questionnaire with a total of five nurse data collectors who were selected from healthcare facilities and involved in the data collection. And using a structured questionnaire that was developed based on relevant kinds of literature [4], [10] and adapted to the research objectives.

Data quality assurance

Two days of training were given to data collectors on how to approach and collect the required information from the respondents. The questionnaire was initially prepared in English and translated into Amharic and then translated back to English by an independent language expert to maintain consistency of meaning. Data was collected under the supervision of the principal investigator. Incomplete questionnaires were completed by making repeated visits to the health facility. The tool was pretested in sixteen healthcare professionals in Mizan Aman administrative town in Gacheb Health Center, with 5%

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of the study subjects and necessary corrections were made as appropriate. Cronbach's alpha was calculated to test the internal consistency of items. Data were cleaned and checked for completeness daily and necessary feedback was provided to the data collectors.

Data analysis

After data processing, the collected data were entered into Epi Data Manager Version 4.6.0.6 and exported into SPSS version 22 software for analysis. Data on demographic characteristics, types of injuries, and frequency of risk factors were described with frequencies and percentages. Binary logistic regression analysis was used to identify the factors associated with occupational injuries. All variables at $p \leq 0.25$ in the bivariate regression model were selected for the multivariable logistic regression model. Variables with $p < 0.05$ in the final model were considered statistically significant predictors of occupational injuries. Multicollinearity diagnoses were checked by the variable inflation factor and the standard error. Both the crude and adjusted odds ratios with the respective 95% confidence intervals were used to assess the strength of the association. Model fitness was checked by using the Hosmer and Lemeshow test to conduct logistic regression analysis when the model fit at $p - value > 0.05$ and the model was 0.42, which is a good fit.

Results

Socio-demographic characteristics of respondents

A total of 310 healthcare professionals participated, with a response rate of 98.73%. Regarding professional categories, the majority of the participants were nurses, 186(60%). About half, 159(51.3%) of the participants were male, and a similar proportion, 167(53.9%) of participants were in the age group of 25-34 years. The mean age of the participants was 32(SD $\pm$ 7.5). According to marital status, the majority of the participants were married, 205(66.1%) and the distribution of work experience was less than five years, 177 (57.1%), 6-10 years, 103(33.2%) and above 11 years, 30(9.7%), with the mean work experience of 5.44 years. As shown in Table 2 regarding educational level majority 215 (69.4%) had a first degree, 91(29.4%) had a diploma and 4(1.3%) had a second degree (Table1).

TABLE 1
SOCIO-DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS IN HEALTHCARE PROFESSIONALS IN PUBLIC HEALTH FACILITIES IN BENCH SHEKO ZONE, SOUTH WEST ETHIOPIA.

Variables	Categories	Frequency	Percentage
Age	18–24 years	35	11.3
	25–34 years	167	53.9
	Above 35 years	108	34.8
Sex	Male	159	51.3
	Female	151	48.7
Profession	Medical doctors	37	11.9
	Nurses	186	60.0
	Laboratory technicians	22	7.1
	Midwives	25	8.1
	Pharmacists	16	5.2
	Anesthetists	4	1.2
	Radiologist	4	1.3
	Health officers	16	5.2
Marital status	Single	88	28.4
	Married	205	66.1
	Widowed	13	4.2
	Divorced	4	1.3
Work experience	1–5 years	177	57.1
	6–10 years	103	33.2
	Above 11 years	30	9.7
Educational level	Diploma	91	29.0
	First degree	215	69.0
	Second degree	4	1.0

Occupational injuries among participants

The study showed that the magnitude of occupational injury among healthcare professionals in public health facilities was 128(41.3%) (Fig.1).

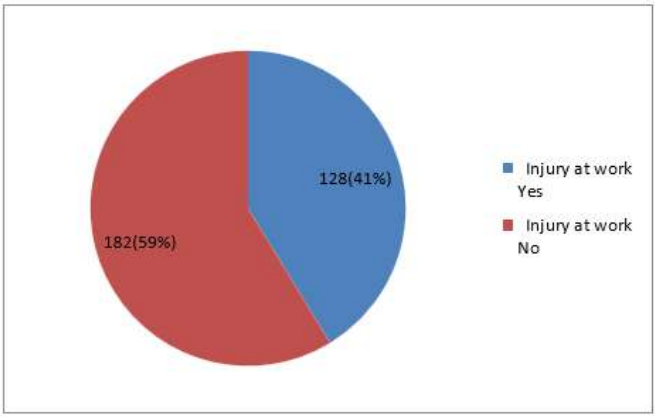


Fig. 1. The magnitude of occupational injuries in public health facilities in Bench Sheko Zone, South West Ethiopia.

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Types of injuries that occurred

Among those 128(41.3%) had an occupational injury in 12 months most common injuries were needle stick injury 55(17.7%), blood/ body fluid exposure 23(7.4%), sharp injuries 21(6.8%), lower back pain injury or fracture 11(3.5%), blunt injury from a fall or being hit by an object 7(2.3%), infected skin lesion contact 6(1.9%), and respiratory secretions 5(1.6%) (Fig.2).

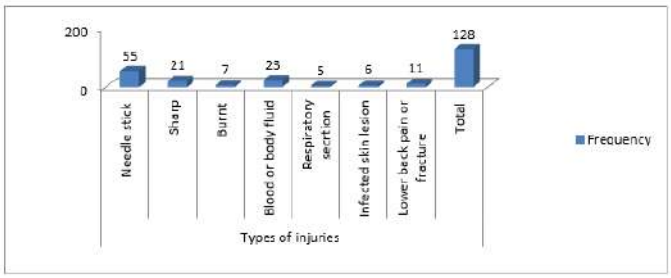


Fig. 2. Types of occupational injury in public health facilities in Bench Sheko Zone, South West Ethiopia.

Injured body parts

Regarding affected body parts majority of hand injuries were 84(27.1%), followed by face injuries in 13(4.2%) and 12(3.9%), 11(3.5%), 6(1.9%), and 2(0.6%) injuries in the leg, lower back, eye, and above neck, respectively (Fig 3).

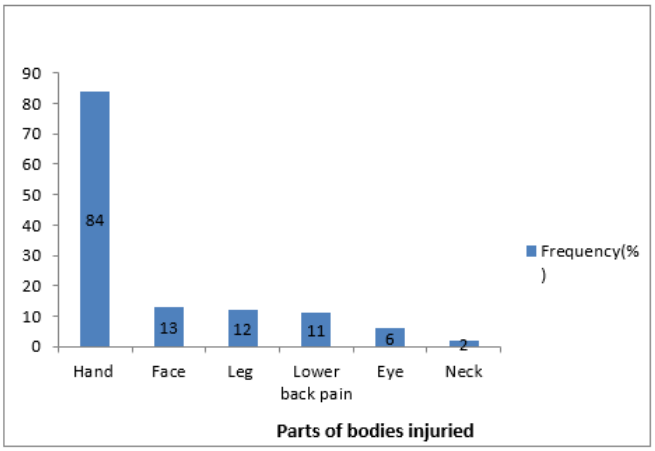


Fig. 3. Affected body parts among Healthcare professionals in public health facilities in Bench Sheko Zone, South West Ethiopia.

Health system factors

Among those injured respondents, 97(31.3%) didn't get immediate treatment, but only 31(10%) got treatment. Of those injured participants, 120(38.7%), their injury was not recorded or reported. On the other hand, 253(81.6%) of respondents didn't have adequate PPE. Among the number of HCPs, the majority of 215(69.4%) respondents didn't have an adequate number of HCPs. And also 302(97.4%) of respondents didn't get training on occupational health and safety (Table 2).

TABLE 2
HEALTH SYSTEM FACTORS AMONG HEALTHCARE PROFESSIONALS IN PUBLIC HEALTH FACILITIES IN BENCH SHEKO ZONE, SOUTH WEST ETHIOPIA

Variables	Frequency	Percentage (%)
Occupational Injury (Last 12 months)		
Yes	128	41.3
No	182	58.7
Frequency of Injury		
Once	79	25.5
Two or more	49	15.8
Type of Injury (n=128)		
Needle stick injury	55	17.7
Sharp injury	21	6.8
Blunt injury (fall/hit)	7	2.3
Blood or body fluid exposure	23	7.4
Respiratory secretions	5	1.6
Infected skin lesion contact	6	1.9
LBP injury or Fracture	11	3.5
Body Parts Injured		
Hand	84	27.1
Leg	12	3.9
Above Neck	2	0.6
Eye	6	1.9
Face	13	4.2
Lower back	11	3.5
Received Treatment		
Yes	31	10.0
No	97	31.3
Injury Recorded and Reported		
Yes	8	2.6
No	120	38.7
Adequacy of PPE		
Yes	57	18.4
No	253	81.6
Proper PPE Usage		
Yes	27	8.7
No	27	8.7
Adequate Staffing in Room		
Yes	95	30.6
No	215	69.4
OHS Training Received		
Yes	8	2.6
No	302	97.4

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Work characteristics for occupational injuries

From a total of 310 respondents, a majority of 232(74.8%) were stressed at their work, and similarly, the vast majority of respondents spent more than 8 hours/day, 277(89.4%), of which 99(42.6%) 115(41.5%) encountered occupational injury, respectively. Accordingly, workers who had no fixed break at their workplace were 247(79.7%), and those moving heavy objects, including patients, were 104(33.5%), of which 97 and 50 encountered injury, respectively. Among the environmental factors, there was no availability of soap and water in the work area 254(81.9%) and there were no separate containers for waste segregation 295(95.2%) (Table 3).

TABLE 3
WORK CHARACTERISTICS FOR OCCUPATIONAL INJURIES

Variables	Frequency	Percentage (%)
Occupational Stress		
Yes	232	74.8
No	78	25.2
Working Hours per Day		
<8 hours	33	10.6
>8 hours	277	89.4
Fixed Break at Workplace		
Yes	63	20.3
No	247	79.7
Work Shifts		
Yes	275	88.7
No	35	11.3
Frequency of Shifts (n=275)		
Every 8 hours	169	54.5
Every 12 hours	49	15.8
Every 24 hours	57	18.4
Moving Heavy Objects (Including Patients)		
Yes	104	33.5
No	206	66.5
Availability of Soap and Water		
Yes	56	18.1
No	254	81.9
Separate Waste Containers Available[a]		
Yes	15	4.8
No	295	95.2

[a] Includes general, hazardous, infectious, pathological, pharmaceutical, and sharp waste.

Analysis of significant factors associated with occupational injuries Binary logistic analysis was undertaken to select candidate variables at a p-value of <0.25. All 18 independent variables are entered into a bi-variable logistic regression model. Those 10 variables with p-values < 0.25 are candidates for multivariable analysis (Table 4). During bi-variable analysis, professional category, work experience, Educational status, fixed breaks, moving heavy objects, including patients, unavailability of soap and water, improper disposal of sharps, washing hands before and after the procedures, inadequate PPE, and the inadequate number of healthcare professionals were factors associated with occupational injuries. However, moving heavy objects, including patients, improper disposal of sharps, inadequate PPE and the inadequate number of HCPs were significantly associated with occupational injuries. CI (0.09-13.15)], move heavy objects [AOR 1.17 95% CI (0.09-13.8)], move heavy objects [AOR 2.11 95% CI (1.09-13.8)], move heavy objects [AOR 2.11 95% CI (0.09-13.8)], move heavy objects [AOR 2.11 95% CI (1.07-4.13)], who had no proper disposal of sharp objects [AOR 10.28: 95% CI (5.46-19.

From independent variables identified as candidate variables that entered the multivariate analysis, 4 variables have shown a statistically significant association with occupational injuries among healthcare professionals at the p-value <0.05 after adjusting for other variables.

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TABLE 4
IMPORTANT VARIABLES (P-VALUE < 0.05)

Variable	Category	Yes	No	COR (95% CI)	AOR (95% CI)
Profession	Medical doctors (Ref)	14 (10.9)	23 (12.6)	1	1
	Laboratory technicians	15 (11.7)	7 (3.8)	3.52 (1.15–10.75)	1.59 (0.38–6.58)
	Midwives	17 (13.3)	8 (4.4)	3.49 (1.19–10.19)	1.57 (0.35–7.01)
Work experience	1–5 years	76 (59.4)	101 (55.5)	1.75 (0.76–4.04)	0.86 (0.29–2.55)
	6–10 years	43 (33.6)	60 (33.0)	1.67 (0.69–4.00)	1.37 (0.45–4.15)
	Above 11 years (Ref)	9 (7.0)	21 (11.5)	1	1
Education	Diploma	44 (34.4)	47 (25.8)	0.93 (0.12–6.9)	1.17 (0.09–13.8)
	First degree	82 (64.1)	133 (73.1)	0.61 (0.08–4.46)	1.10 (0.10–12.18)
	Second degree (Ref)	2 (1.6)	2 (1.1)	1	1
Fixed break	Yes (Ref)	31 (24.2)	32 (17.6)	1	1
	No	97 (75.8)	150 (82.4)	0.66 (0.38–1.16)	0.61 (0.29–1.28)
Move heavy objects	Yes	50 (39.1)	54 (29.7)	1.51 (0.94–2.44)	2.11 (1.07–4.13)
	No (Ref)	78 (60.9)	128 (70.3)	1	1
Soap & water available	Yes (Ref)	17 (13.3)	39 (21.4)	1	1
	No	111 (86.7)	143 (78.6)	1.78 (0.95–3.31)	2.19 (0.87–5.52)
Proper sharps disposal	Yes (Ref)	40 (31.3)	141 (77.5)	1	1
	No	88 (68.8)	41 (22.5)	7.56 (4.54–12.6)	10.28 (5.46–19.3)
Hand washing	Yes (Ref)	27 (21.1)	50 (27.5)	1	1
	No	101 (78.9)	132 (72.5)	1.41 (0.83–2.41)	1.17 (0.52–2.59)
Adequate PPE	Yes (Ref)	11 (8.6)	46 (25.3)	1	1
	No	117 (91.4)	136 (74.7)	3.59 (1.78–7.26)	3.63 (1.60–8.21)
Number of professionals	Yes (Ref)	34 (26.6)	61 (33.5)	1	1
	No	94 (73.4)	121 (66.5)	1.39 (0.84–2.29)	2.29 (1.13–4.60)

Discussion

In this study, the magnitude of the occupational injury is high. This study revealed that 41.3% of the healthcare professionals encountered at least one type of occupational injury in the last 12 months. The finding is consistent with studies conducted in Gambela town public health institutions and Ghana at a public hospital, which showed the prevalence of occupational injury was 36.5% and 29.3%, respectively, in the past 12 months [4], [10]. However, this finding was lower than the study done in the Eastern part of Ethiopia in Jugol Hospital 60.1%, [12], and a study done in Kampala, which accounts for 50% [13]. The difference in the magnitude of occupational injury might be due to the difference in the study area, health centers were included in the study unlike in other settings as well as under workload on the staff might be the chance of occupational injury in health centers were lower than in hospital setting and healthcare professionals in higher setup or Specialized hospitals relatively had greater exposure than in lower setup like in health centers [10]. In this study, the most common occupational injury was needle stick injury at 55(17.7%), which is lower than the study done in Northern Saudi Arabia 34.5% [7], Ghana, at 27.4% [4] and another study done in TikurAnbesa specialized hospital, 36.2% 95% CI (30.2%- 42.3%) [14]. This study revealed that moving heavy objects, including patients, improper disposal of sharps, inadequate PPE, and the inadequate number of healthcare professionals were significantly associated with occupational injuries. The healthcare professionals who lacked PPE in the healthcare facilities were about 3.63 times more likely to get occupational injuries than those who had access to PPE. This was consistent with the study findings from Western Ethiopia in Gambela town [10], Wolaita in Southern Ethiopia [15], and in the specialized Hospital in Northwest Ethiopia [16]. This might be due to using PPEs being associated with reduced occupational injuries, and PPEs have long been recognized as an important infection control measure in the healthcare industry. This finding suggests that availing of adequate PPEs at all times in health facilities has paramount importance in the reduction of occupational injuries among health professionals [10]. The HPs who reported the presence of an inadequate number of staff were 2.29 times more likely to experience occupational injury compared to those with adequate numbers of healthcare professionals. This might be because an adequate

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number of staff reduces workload and stress. This finding suggests that the inadequacy of the number of staff exposes healthcare professionals to occupational injuries. HPs who move heavy objects, including patients, were 2.11 times more likely to have occupational injuries than those who do not move heavy objects, including patients. This finding was lower than the study done in Shandong, China [17]. This might be due to moving heavy objects, including patients, exposing healthcare professionals to lower back injury and it results in increased risk of occupational injuries. From a total of 310 healthcare professionals who participated in the current study, 104(33.5%) healthcare professionals were moving heavy objects, including patients and 50 of them had occupational injuries. This study is inconsistent with the study finding from Abeokuta, Ogun state, Nigeria, which was 69.5% [18]. Accordingly, healthcare professionals who did not properly dispose of sharps were 10.28 times more likely to have occupational injuries as compared to those healthcare professionals who properly disposed of sharps. This study is higher than the study done in Northwestern Ethiopia. The possible reasons for these differences might be the lack of adequate sharps disposal sites, such as safety boxes and lower adherence to standard precautions. Other reasons might be inadequate training and fewer safety guidelines for the prevention of injuries during patient care in healthcare facilities [19]. Limitations of the study: recall bias might affect the outcome variable when respondents reported occupational injuries in the past 12 months. The study was cross-sectional and a one-time snapshot cannot assess the cause-and-effect relationship. This study has missed the privately owned health facilities because there may be a lack of records of occupational injuries.

The implications for individuals, healthcare systems, and public health

The high prevalence of occupational injuries carries significant and multifaceted implications for individuals, healthcare systems, and public health. For individuals, these injuries can lead to a range of adverse outcomes, including physical pain, temporary or permanent disability, reduced quality of life, and psychological distress, such as anxiety and depression, in this study area and beyond [20].

Individual Implications

Occupational injuries can profoundly impact individuals, often leading to a force of negative consequences. Physical pain and suffering are immediate and often long-lasting, ranging from acute discomfort to chronic conditions that impair daily activities [21]. Mainly, disabilities, whether temporary or permanent, can significantly alter an individual's life course, affecting their ability to work, engage in hobbies, and maintain social connections. Besides, the psychological impact is also substantial, with injured workers frequently experiencing anxiety, depression, post-traumatic stress disorder (PTSD), and feelings of isolation [21]. The financial complications are severe, including lost income, medical bills not fully covered by insurance, and the potential for long-term care expenses, which can push individuals and families into poverty [22].

Healthcare System Implications

The burden on healthcare systems from occupational injuries is enormous, such as acute injuries, leading to overcrowding and increased resource utilization [23]. Mainly, the need for specialized medical care, such as orthopedic surgery, neurology, and pain management, places additional demands on specialist availability and health facility capacity. Specifically, the rehabilitation services, including physical therapy, occupational therapy, and vocational rehabilitation, are critical for recovery but are often resource-intensive in public health facilities. Moreover, the long-term management of chronic pain and disability further strains healthcare budgets and personnel [24]. Particularly, the economic cost to healthcare systems includes direct medical expenses, administrative costs, and the indirect costs associated with lost productivity of healthcare professionals [25].

Conlusion and Recommendatiion

The magnitude of occupational injuries is high among healthcare professionals in the Bench Sheko Zone, Southwest Ethiopia, as compared with studies conducted in Gambela(36.5%) and Ghana (29.3%). In the current study, moving heavy objects, including patients, improper disposal of sharps, inadequate PPE, and the inadequate number of healthcare professionals were significantly associated with occupational injuries. The healthcare professionals in the study area were exposed to a wide range of occupational injuries and the risk reduction mechanisms and safety actions were improperly implemented mainly due to a lack of PPEs, improper disposal of sharps, moving heavy objects, including patients, and an inadequate number of staff. Occupational health and safety needs to be a priority for the sectors and concerned bodies.

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Data availability statement

The datasets presented in this article are readily available upon the official request of the authors.

Data availability

All relevant data are within the manuscript and its supporting information files.

Ethics Statement

Review and approval were made from Mizan Tepi University for this research document; informed consent was obtained from the participants to collect household data.

Author's contribution

BA conceived and designed. MA and NS consulted on the overall process of the study. BA, MA, and NS were involved in the analysis and interpretation of the findings. All authors contributed to the article and approved the submitted version.

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Conflict Of Interest

The authors declare that this research was conducted in the absence of any commercial or financial relationships that could be interpreted as a potential conflict of interest.

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