



Research Paper

Reported Occupational Injuries among Healthcare Workers at Colombo South Teaching Hospital, Sri Lanka

B.Sainiranjan

Colombo South Teaching Hospital, Kalubowila, Dehiwala, Sri Lanka

ABSTRACT

Hospitals are one of the most hazardous places to work. Employees in hospitals encounter specific risks that are uncommon in other sectors. Health staff are exposed to potentially contagious patients and sharp devices contaminated with blood-borne pathogens. This study is a hospital-based retrospective analysis of routinely submitted reports on experiences of occupational injuries by the workers of a teaching hospital during a five-year period (2015-2019). A total of 262 injuries were reported during the period from 2015 to 2019, and it is gradually increasing over the years. Among the reported injuries, 46 (17.6%) are from doctors, 112 (42.7%) are from nurses, 47 (17.6%) are from healthcare assistants, 35 are from nursing students, and 13 (5%) are from medical students. The most common injuries were needle sticks (69.1%), cannula stylet sticks (13.4%), scalpel blade cuts (10.7%), and splashing of blood or secretions into the eyes (3.4%). The injuries were mostly caused during surgical and other procedures (82; 31.3%), drawing blood (77; 29.4%), intravenous cannulation (36; 13.7%), blood sugar testing (26; 13.7%), and clinical waste handling (27; 10.3%). Among the incidents, the doctors' injuries were mostly caused while performing surgeries and procedures (69.56%), nurses (41.96%), and nursing students (63.85%) injured while collecting blood samples, and healthcare assistants (42.55%) and cleaning staff (100%) injured while handling clinical waste. Occupational hazards are closely related to their nature of work. Nurses and doctors are at risk while drawing blood and performing surgeries, while minor staff categories are at risk while handling clinical waste. Healthcare administrators should concentrate on providing training in such specific areas to reduce the incidence.

Keywords: Occupational Injuries; Healthcare Workers; CSTH; Sri Lanka

Received 07 Apr., 2024; Revised 17 Apr., 2024; Accepted 19 Apr., 2024 © The author(s) 2024.

Published with open access at www.questjournals.org

I. Introduction

Hospitals are one of the most hazardous places to work. Workers in hospitals encounter specific risks that are uncommon in other industries. Health staff may be at risk due to potentially contagious patients and sharp devices contaminated with blood-borne pathogens. Hospitals treat patients with physical or mental health challenges, some of which increase the likelihood of violent outbursts. In addition to the special challenges of healthcare workers, hospitals face various safety challenges associated with materials handling, maintenance, cleaning, and various other functions.

Health staff will put their safety and health at risk to help patients. Without adequate safeguards for workers, an increased emphasis on patient safety can potentially increase the risks for workers. Injuries can prevent hospital workers from doing their job and caring for patients. In the case of irreversible serious injury or illness, workers are required to change their career, which affects their role in society, their identity, and the income of their families.

As institutions dedicated to healing, hospitals should see protecting their workers from harm as a mission. To improve workplace safety, we should understand hospitals' strengths and weaknesses and develop effective solutions. Specific solutions will depend on the hazards that need to be controlled.

Health management should be a proactive, collaborative process to find and fix workplace hazards before employees are injured or become ill. For successful management, hospitals should include employee participation, hazard identification and assessment, hazard prevention and control, education and training, and program evaluation and improvement plans.

The Colombo South Teaching Hospital (CSTH) in Kalubowila, is a well-recognized and well-established Teaching Hospital in the Colombo district. CSTH is a 1,110-bedded multi-specialty teaching hospital with 2,429 healthcare workers, including doctors, nurses, paramedical staff, and various other categories.

By identifying the epidemiology of occupational injuries among healthcare workers at CSTH, health managers will support finding and fixing workplace hazards before employees are injured or become ill. This research will facilitate improving workplace safety.

II. Methods

This is an epidemiological, hospital-based retrospective, record-based cross-sectional study conducted at CSTH in Colombo, Sri Lanka, between March 2020 and June 2020. Data collection was performed using hospital incident reports. The healthcare staff of Colombo South Teaching Hospital was considered the study population, with the entire dataset from the last 5 years serving as the sample size.

This study is based on an analysis of routinely submitted reports on occupational accidents experienced by the workers at CSTH during the last five years. The researchers were directly involved in data collection from the hospital records. The data were analysed using appropriate statistical methods with Microsoft Excel and SPSS.

III. Results and Discussion

Table 1: Reported Occupational Injuries among Healthcare Workers at Colombo South Teaching Hospital, 2016 to 2019

Year	Reported Injuries	Percentage
2015	55	21.0
2016	44	16.8
2017	47	17.9
2018	56	21.4
2019	60	22.9
	262	100.0

During the period from 2015 to 2019, there were a total of 262 reported occupational injuries. The number of incidents reported in 2016 was 44, which gradually increased to 60 by the year 2019.

Chart 1: Reported Types of Occupational Injuries among Healthcare Workers at Colombo South Teaching Hospital, 2016 to 2019

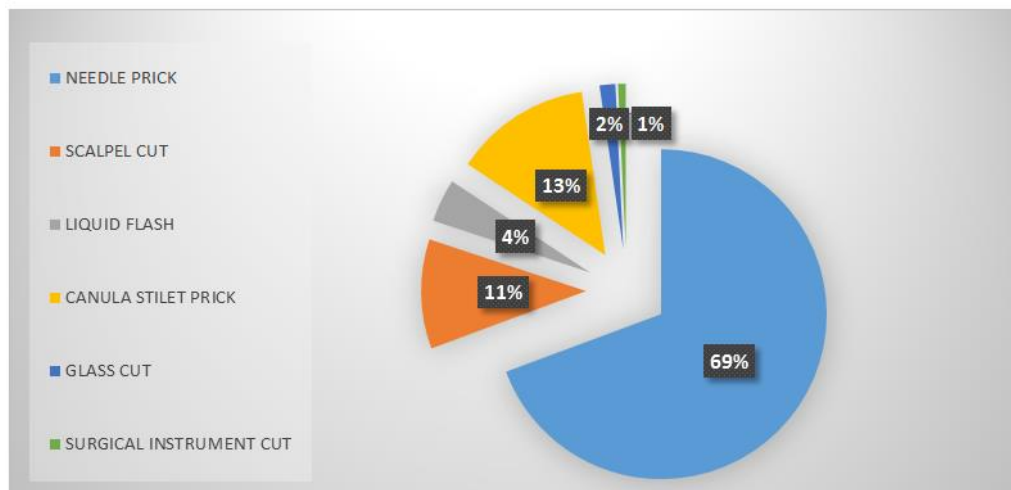
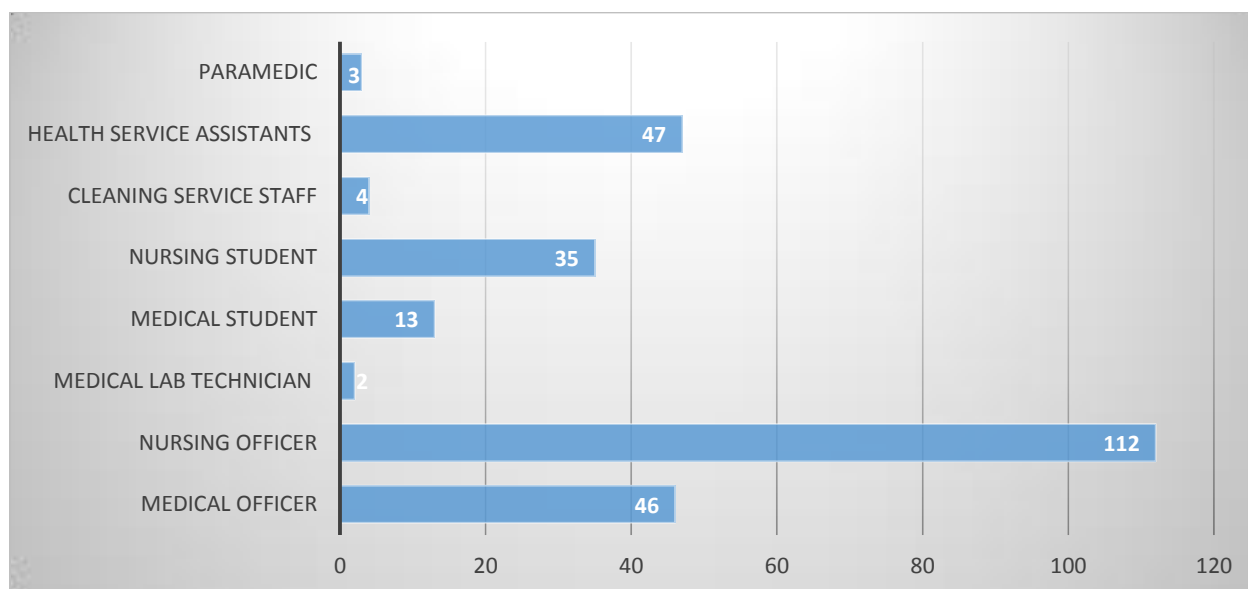


Chart 2: Reported Occupational Injuries among Healthcare Workers at Colombo South Teaching Hospital, 2016 to 2019



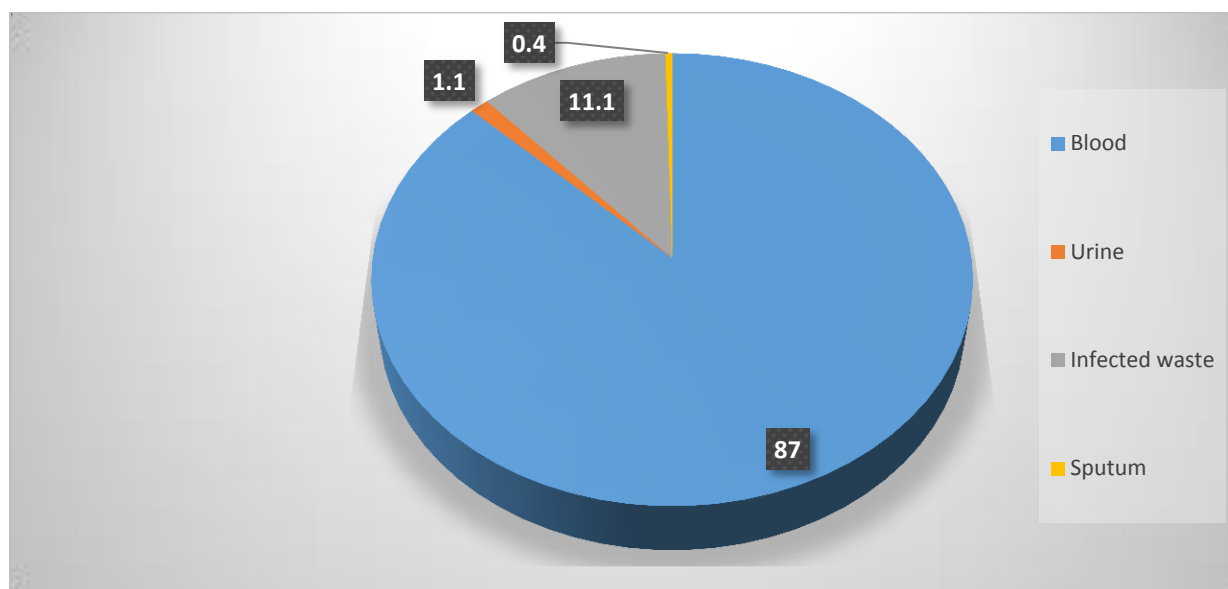
The prevalent injuries included needle sticks (69.1%), cannula stylet sticks (13.4%), scalpel blade cuts (10.7%), and incidents of blood or secretions splashing into the eyes (3.4%). Among the reported occupational injuries, 46 (17.6%) involved doctors, 112 (42.7%) involved nurses, 47 (17.6%) involved healthcare assistants, 35 involved nursing students, and 13 (5%) involved medical students.

Table 2: Activities Leading to Occupational Injuries among Healthcare Workers at Colombo South Teaching Hospital, 2016 to 2019

Activities Leading to Occupational Injuries	Frequency	Percentage
Surgery/Procedures	82	31.3
IV Cannulation	36	13.7
Testing / Sampling	26	9.9
Blood Sample Collection	77	29.4
Clinical Waste Handling	27	10.3
Surgery Preparation	2	0.8
IV Drug Administration	2	0.8
Cleaning	9	3.4
Physiotherapy	1	0.4
Total	262	100.0

The injuries primarily occurred during surgical and other procedures (82; 31.3%), drawing blood (77; 29.4%), intravenous cannulation (36; 13.7%), blood sugar testing (26; 13.7%), and clinical waste handling (27; 10.3%).

Chart 3: Type of exposure during Occupational Injuries among healthcare workers at Colombo South Teaching Hospital, 2016 to 2019



During the study period, hospital staff were exposed to various body fluids (blood, urine, and sputum) and infected waste. The majority of staff (87%) had contact with blood, while 11.1% encountered exposure to infected waste materials.

Table 3: Occupational Injuries among Healthcare Workers at Colombo South Teaching Hospital – Unit-Wise Breakdown, 2016 to 2019

Place of work	N
Ward 1	5
Ward 2	9
Ward 3	5
Ward 4	9
Ward 5	9
Ward 6	1
Ward 7	14
Ward 8	2
Ward 9	6
Ward 10	1
Ward 11	6
Ward 12	2
Ward 15	9
Ward 16	3
Ward 17	4
Ward 18	5
Ward 19	2

Place of work	N
Ward 30	2
Ward 33	1
Main Operating theatre	6
Accident Service Unit	32
Laboratory	7
Medical ICU	9
Surgical ICU	10
Judicial Medical Office	2
Outpatient Department(OPD)	13
Special Care Baby Unit	4
Operating theatre A	7
Operating theatre B	10
Operating theatre C	17
Skin clinic	1
Eye clinic	1
Anti-Rabies Unit	1
Dialysis unit	5

Reported Occupational Injuries Among Healthcare Workers At Colombo South Teaching ..

Ward 20	2	Physiotherapy Unit	1
Ward 21	8	Endoscopy	3
Ward 23	1	Dental Unit	1
Ward 24	2	Radiology Unit	3
Ward 25	4	Blood Bank	1
Ward 26	3	NBU	3
Ward 27	10	TOTAL	262

Among the 262 reported occupational injuries, the Accident Service Unit (ASU) recorded the highest number during the study period, with ASU staff encountering 32 incidents. Operating Theatre-C reported 17 occupational injuries during this period. Additionally, Operating Theatre-B, Outpatient Department (OPD), Surgical Intensive Care Unit, Ward 14, and Ward 10 also made significant contributions to the total count.

Table 4: Leading Activities Resulting in Occupational Injuries among Healthcare Workers at Colombo South Teaching Hospital, 2016 to 2019

Staff Category	Activity Leading to Injury								
	Surgery/procedures	IV Cannulation	Testing/Sampling	Blood Sample collection	Clinical waste handling	Surgery preparation	IV drug administration	Cleaning	Physio-therapy
Medical Officer	32	5	5	4	0	0	0	0	0
Nursing Officer	36	20	7	47	1	0	1	0	0
Medical Lab Technician	0	0	2	0	0	0	0	0	0
Medical Student	6	2	2	3	0	0	0	0	0
Nursing Student	2	4	5	22	1	1	0	0	0
Cleaning Service Staff	0	0	0	0	4	0	0	0	0
Health Service Assistants	6	5	4	1	20	1	1	9	0
Paramedic	0	0	1	0	1	0	0	0	1
Total	82	36	26	77	27	2	2	9	1

This study reveals that nurses are vulnerable during tasks such as drawing blood, assisting in surgeries, and intravenous cannulation, whereas doctors face risks primarily during surgical procedures. Minor staff categories, on the other hand, are prone to injuries while handling clinical waste. Paramedical staff emerged as the least at risk group according to this study.

The research relied on available hospital records, limiting the depth of analysis possible. This stands as a major limitation of the study.

IV. Conclusion

The findings highlight the heightened risk of occupational injuries among healthcare workers and trainees. Approximately 10.78% of the healthcare staff experienced such injuries over the last five years. Nurses and doctors face particularly elevated risks. These hazards are closely tied to their specific roles within the healthcare setting, with nurses and doctors facing risks during blood-related tasks and surgeries, while minor staff are more vulnerable during waste handling.

V. Recommendations

- The study highlights needle stick injuries among hospital staff as a prevalent occupational hazard, with nurses and doctors facing high risks. Further research is recommended to evaluate current practices regarding the use of needles and other sharp instruments.
- Enhanced education and training programs are essential for nurses and doctors, focusing on techniques for blood sample collection, insertion of intravenous drips, handling surgical instruments, and proper sharps disposal.
- Training in clinical waste handling is crucial, particularly for minor staff categories.
- Healthcare administrators should prioritize providing specialized training tailored to the nature of the work to mitigate occupational hazards.
- Staff working in units such as ASU, Operating Theatre C, Operating Theatre B, OPD, Surgical ICU, Ward 14, and Ward 10 should receive targeted training to reduce the incidence of injuries.
- Hospital staff must be vigilant in wearing personal protective equipment to prevent exposure to hazardous materials.
- Moreover, staff working in units such as ASU, Operating Theatre C, Operating Theatre B, OPD, Surgical ICU, Ward 14, and Ward 10 are at higher risk compared to others.

References:-

- [1]. Piyasiri, DammalageLasanthi&Deniyagedara, Kumari &Lewkebandara, Rashmi &Thewarapperuma, Chandika&Hewapathirana, Chamli&Subashini, MIA &Gurusinghe, BH &Akurugoda, AKSH & Lalitha, UG. (2015). Analysis of accidental occupational exposure injuries among health care workers in a tertiary care hospital in Sri Lanka care hospital in Sri Lanka.
- [2]. Liyanage, I. K., Caldera, T., Rwma, R., Liyanage, C. K., De Silva, P., and Karunathilake, I. M. (2012). Sharps injuries among medical students in the faculty of medicine, Colombo, Sri Lanka. *International Journal of Occupational Medicine and Environmental Health*, 25(3), pp.275-280. <https://doi.org/10.2478/S13382-012-0036-4>.
- [3]. Sriram, S. (2019). Study of needle stick injuries among healthcare providers: Evidence from a teaching hospital in India. *Journal of Family Medicine and Primary Care*, 8(2), p.599.
- [4]. Pines, A., de Rohmoser, D. and Pollak, E. (1985). Occupational accidents in a hospital setting: An epidemiological analysis*. *Journal of Occupational Accidents*, 7(3), pp.195-215.