



Safety of Health Care Workers A Priority for Patient Safety

Maiga Ayub Hussein,* Dwi Sutiningsih,** Chebet Frida*

*Islamic University In Uganda (IUIU)

**Department of Epidemiology and Tropical Disease, Faculty of Public Health, Diponegoro University

ABSTRACT

Background: Worldwide healthcare workforce represents 12%, in Uganda, out of the 39000 healthcare workers (HCW), 500 have been deployed at Mbale regional referral hospital (MRRH). The deficient quality service delivery is attributed to adverse occupational health risk that are not addressed and acknowledged posing a great risk to patient safety. Study aims to investigate the unsafe acts and unsafe working conditions of health care workers at (MRRH).

Methods: A quantitative observational study with a cross-section design was used using and a semi structured observation checklist for data collection among 120 health care workers of MRRH.

Result: 45(37.5%) of the HCW never wore the necessary PPEs versus 75(62.5%) who wore, almost half 55(45.3%) worked over time and 65(54.6%) did not, as well the same figures represent those who over worked and those who did not over work respectively. 70% of the working places had defective working conditions for example no lighting, slippery floors and no danger signs. 75% of the wards had improper waste segregation measures.

Conclusion : HCW and institutions should intervene to mitigate the hazards, strengthening occupational health, patient safety, hazard prevention and control.

Keywords: Safety ; health care worker ; patient

Introduction

Worldwide, the healthcare workforce represents 12% of the working population¹ and working in health care is certainly dangerous to your health², the prevalence of Healthcare-associated infections (HAIs) in developing countries varies from 5.7% to 19.1%, this raises questions on compliance with Standard Precautions for example Personal Protective Equipment (PPE) usage since it is a cost effective strategy to prevent HAIs in developing countries³.

The health care industry is among the largest and fast growing industry in the world, with Noble professional employees who are a 'Calling from God' working selflessly to any extent for the betterment of their patient as this gives them self-satisfaction when their patients improve and get discharged and it hurts them if their patients fail to improve or die.

Occupational hazards are the short- and long-term dangers or risks associated with unhealthy workplace environments⁴, however health organizations' expectations being high with the limited resources and over whelming number of patients, health care workers (HCWs) tend to stretch the more to deliver health care through these unsafe practices and unfavorable working environment that puts their health and their patients in danger.

Health care workers to patients ratio is usual high accompanied with longer working hours, this practice affects their health and performance as decent working time is described as working time arrangements that promote health and safety⁵, currently an attractive work environment is a key competitive factor for health-care operators. In other words working time arrangements impact on worker safety and health and their motivation, and on organizational performance in terms of patient outcomes⁶

For most of the accidents that have caused serious injuries and death to health care workers are preventable and less costly to the organization and the health care workers, however cautiousness increases after they experience the loss of a number of their colleagues⁴, the health care workers and the organizations seem not compliant to the basic precautions that could prevent them from

accidents, selflessly saving their patients as they trade their safety and health.

A report on Occupation Health and Safety (OHS)⁷ in the Indonesia noted that health care workers are not diligent enough in adhering to the Occupational Health Safety protocols, including wearing masks yet improper use of PPEs can lead to transmission of Healthcare-associated infections (HAIs) to Health care workers as well complicating patient condition, prolonging hospital stay with economic consequences for the patient and family⁸.

The health care workers and health organizations have not acknowledged and addressed that the Patient safety is dependent on health care worker safety⁹ and adherence to the Occupational Health safety protocols. This could be because fewer studies have reported on the unsafe acts by health care workers and unsafe conditions that could be sought solution to prevent accidents and injuries amongst health care workers.

Therefore this study will aims at investigating the unsafe acts and unsafe working conditions at Diponegoro National Hospital in Semarang-Indonesia.

Method

The study will be quantitative using an observational study with a cross-section design to allow data to be collected on unsafe acts and unsafe work conditions of health care workers at a particular point in time. The study will be carried out at Diponegoro National Hospital in Semarang city, Indonesia. This is located in the equatorial region along coordinates 7°02'52.1"S latitude and 110°26'37.7"E longitude. The area experiences tropical climate with an average annual temperature of 25.8 °C and about 2495 mm of precipitation. The target population will be all the health care workers in Diponegoro National Hospital, Semarang. Accessible population will include health care workers in surgical and medical wards in Diponegoro National Hospital, Semarang. Study population will include health care workers in Surgical and Medical wards who met inclusion criteria. The sample is all the health care workers in surgical and medical wards shall be enrolled and observed during the study. The study will

observe the health care worker on surgical and medical ward, each worker shall be coded and enrolled, the investigator will use an electronic checklist to score the practices, as well will assess the working condition until the targeted number has been reached. The inclusion criteria is health care worker on duty as per the duty rota and health care worker on surgical and medical wards

Results

Biological and Non-biological Hazards
Overall, majority of the respondents reported experiencing an occupational health hazard. Among these, 74(61.7%) experienced biological hazard while 46(38.3%) reported experiencing non-biological,

Inappropriate PPE.

During the study period, 120 participants were observed of which 51.6 % (62) were females and 58(48.3) males. Based on professions, 4 % (4) were nursing aides (auxiliary nurses and patient attendants), 20 % (19) were physicians, 16.67 % (20) were dental therapists, 58.3 % (70) were Nurses or Midwives, 7 % (7) were rehabilitation personnel (physiotherapists and rehabilitation technicians). Some of the professions were grouped based on their skill set. Mean age of the participants was 32.4 years ranging from 20 to 70 years old. The study was conducted in 24 (80%) wards. %)), worked in government hospitals (government (45.1%) versus others 20(27.01%), never wore all necessary PPEs (wore all PPEs 20(27.01%) versus others 54(72.97%). In this study, PPEs were 72 % accessible and 28 % not accessible to HCWs in the wards. The most not accessible PPEs were goggles (26 %) and footwear (74 %) while facemasks, sterile and non-sterile gloves and aprons were readily accessible. Non-sterile gloves were completely available and accessible

Overtime/over work.

(51.8%)), worked over time (yes 30(65.21%) versus no (16(34.8%)), worked in multiple health facilities (worked in multiple facilities 33(71.7%) versus single facilities 13(27.8%)), and experienced job related pressure (experienced job pressure (45.5%)

versus others (9.1%)). the majority experienced stress (21.5%), physical, psychological, sexual, and/or verbal abuse (10.5%),and musculoskeletal injuries (10.5%). those who worked in governmental facilities (government (39.0%) versus others (23.8%)), those with more than five-year duration in service (≤ 5 years (24.5%) versus >5 years (37.7%)), those who never wore all the necessary PPEs (wore all necessary PPEs (21.7%) versus others (44.7%)), worked over time (yes (36.9%) versus no (18.6%)), those who worked in multiple health facilities (multiple (41.1%) versus others (27.8%)), those who had less than 8 hours of daily sleep (<8 hours 27(58.7%) versus others 19(41.3%)), and those who experienced work related pressure (experienced pressure 25(54.35%) versus others 21 (45.65%)).

Defective work condition.

75(62.5%)), those who worked in governmental facilities (government (62.5%) no (37.5%)), those who worked in multiple health facilities, single facilities 33(71.7%)), and experienced job related pressure (experienced job pressure 25(54.35%) versus others 21(45.65%)). Another interesting finding although not significant at multivariate analysis was the Association between working in a government health facility and experiencing occupational hazards compared to private health facilities. Reasons for this discrepancy may need to be explored further. Physical environment as a characteristic of working condition has showed to have positive impact of workers satisfaction with work environment and increase productivity. Result showed that improvement in the physical design of the hospital buildings may result in increase in productivity and eventually increase performance. Working condition associated with employees' job involvement and job satisfaction.

Improper waste segregation.

Health Workers major outcome of improper waste segregation were sharp related injuries 44(59.4%), cuts and wounds 30(40.5%). Out of the 120 healthcare workers, 53(44.1%), received training related to management of wastes, regarding healthcare wastes, 67(55.8%) of healthcare workers correctly knew the

different types of healthcare wastes such as sharps, infectious and general wastes. A hundred of the respondents had awareness on healthcare wastes. From the empirical observation assessment, all hospital treated and disposed of their healthcare waste on site and all hospital practiced open pit burning of healthcare waste, even though all, all hospitals have brick incinerator it was witnessed that all incinerator have some form of problem in terms of designing and construction. With respect to the disposal of the treated healthcare wastes, all hospitals used open dumping of healthcare wastes in their compound.

Discussion

This study highlights that majority of the respondents had experienced an occupational health hazard, mostly sharp related injuries and stress. The likely predictors for both biological and non-biological hazards were not wearing all the necessary personal protective equipment, were working overtime, and were job related pressures. In addition, non-biological hazards were predicted by working in multiple health facilities. The mitigation measures to control the hazards were mainly availing waste disposal facilities for the medical waste and provision of safe working conditions. In our study, we established that using all the necessary personal protective equipment was associated with reduced exposure to both biological and non-biological hazards. Indeed, use and compliance with utilization of PPEs has for long been recognized as important infection control measure in the healthcare industry which should be emphasized to minimize exposure to occupational hazards. In addition, we found that respondents who worked overtime had increased likelihood of experiencing both biological and non-biological hazards. Long working hours results in prolonged exposures to hazards and limited recovery. Other studies have shown that working long hours is also associated with adverse health effect and unhealthy behaviors. This mode of work has also raised concern about patient safety. We also found that respondents who experienced work related pressures were more likely to report occupational hazards. Work related pressures have been reported to have negative impacts

including the compromise of patient care thus resulting to a diminished quality of life for both healthcare workers and patients.

Study Limitations.

This study was carried out in the major hospitals which limit generalizability to small and rural health facilities. The results could have been affected by recall bias as respondents were required to recall past experience. This being a cross sectional study, cause effect could not be established. Nevertheless, this study provides useful information on occupational health hazards in this low income context.

Conclusion

Healthcare workers continue to face several hazards in their workplaces. The factors associated with experiencing hazards include not wearing all necessary protective equipment, Working overtime, experiencing work related pressures, and working in multiple facilities. Interventions should be instituted to mitigate the hazards. Specifically PPE supply gaps.

References

1. Ndejjo, R. et al. 2015. 'Occupational Health Hazards among Healthcare Workers in Kampala , Uganda', 2015.
2. Charney, W. 2009. Handbook of modern hospital safety, second edition, Handbook of Modern Hospital Safety, Second Edition.
3. Madziatera, D. et al. 2020 'Availability, accessibility and proper use of personal protective equipment in wards at queen elizabeth central hospital (Qech) blantyre, malawi: An observational study', Malawi Medical Journal, 32(3), pp. 124–131. doi: 10.4314/mmj.v32i3.4.
4. Professor Daniel Prajogo et. Al. 2021 'and Safety (OHS): Protecting the Indonesian Healthcare Workforce during the COVID-19 Pandemic', Occupational Health and Safety (OHS): Protecting the Indonesian Healthcare Workforce during the COVID-19 Pandemic.

5. ILO .2017. Improving employment and working conditions in health services.
6. Al-khatib, I. A., Eleyan, D. and Garfield, J. 2016. ‘A system dynamics approach for hospital waste management in a city in a developing country: the case of Nablus , Palestine’, Environmental Monitoring and Assessment. doi: 10.1007/s10661-016-5487-9.
7. Cho, E. et al. 2015 ‘Effects of nurse staffing, work environments, and education on patient mortality: An observational study’, International Journal of Nursing Studies, 52(2), pp. 535–542. doi: 10.1016/j.ijnurstu.2014.08.006.
8. Disaster Management Institute. 2021. ‘The Domino Theory - Management Platform for Human Resource Development in the Field of Industrial Disaster Risk Management’, Disaster Management Institute. Available at: <http://www.hrdp-idrm.in/e5783/e17327/e24075/e27357/>.
9. HaSPA (Health and Safety Professionals Alliance). 2012 The Core Body of Knowledge for Generalist OHS Professionals, OHS Body of Knowledge. Available at: <http://www.ohsbok.org.au/wp-content/uploads/2013/12/32-Models-of-causation-Safety.pdf>.