

The Prevalence and Reporting of Medical Errors among Medical Personnel at Kitwe Teaching Hospital

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Abstract

A medical error is a preventable adverse effect of care, whether or not it is evident or harmful to the patient or failure of a planned action to be completed as intended or an unintended act, either omission or commission. Medical errors are a global issue that demands much attention, especially medication errors in all the health sectors. According to the report by National academy of Science, more people die from medical errors than road motor vehicle accidents worldwide. Medical errors are among the main causal of death and other complications in hospital setting. Additionally, Medical errors happen almost on daily basis in Zambian hospitals and clinics, yet the subject has been given a snub by medical personnel and policymakers. Therefore, this study focused on the prevalence of medical errors and common medical errors in our setting (KTH) and the reporting system of these errors. The study confirmed that medical errors still happen in our various local health facilities and at Kitwe Teaching Hospital it was found had a prevalence of 25%. The most common medical errors are: delay in treatment (20%), cross contamination (40%), poor medication (10%) and misdiagnosis (10%). These medical errors some are fatal that their result into serious outcomes and/or complications such as colostomies, amputation, death and instant death.

Keywords: Medical errors • Medical personnel • Kitwe Teaching hospital • Health facility

Introduction

Medical errors are preventable adverse effect of care, whether or not it is evident or harmful to the patient or failure of a planned action to be completed as intended, either omission or commission. Medical error is one of the most important puzzling circumstances in the health sector although it is not prioritized as one of the public health burdens. "Newspapers and television stories of catastrophic injuries occurring at the hands of physicians spotlight the problem of medical errors but provide little insight into its nature or magnitude" [1]. Medical error is a global issue that demands much attention, especially medication errors.

According to the report by National academy of Science, more people die from medical errors than road motor vehicle accidents. Un-dominate health care delivery, medical research, and medical education have a greater contribution on mortality rate worldwide. According to the World Health Organization (2016), the occurrence of medication error in Sweden is about 42% while Saudi Arabia and Mexican prescriptions contain errors with the error rate of 20% and 58% respectively. The following are the most common medical errors that occur in hospitals namely: Diagnostics errors/Misdiagnosis, Medication errors (prescription errors), Surgical Injuries, Laboratory Test errors, Cross Contamination, while indirect causes of medical

errors includes: Miscommunication, Failure to take the needed precautions, Negligence, Poor Judgment because of fatigue, stress and burnout as a result of Understaffing, and errors as a result of Complex Procedures, and failure to refer patients on time. Because of increased medical errors worldwide the world health organization have introduced medical error reporting system for the safety of patients since some health care systems have failed to learn from previous mistakes made. The study explained that medical errors are the third leading causes of death worldwide with U.S.A having total deaths of 210,000 patients per year [2]. Another study at Massachusetts General Hospital, the renowned best medical center in the world, 45% of all the surgeries from 2013 to 2014 had drug errors or unintended drug side effects. These included in-collect dose or medication ordered but not give (negligence). There was 1 medication error of every 2, and 1 of every 2 surgical operations. About 69% of injuries to patients admitted in acute care hospitals are due to medical errors and 75% of these medical errors are preventable. In Australia, it has been proved that adverse event occurred in 16.6% of admissions, resulting in permanent disability in 13.7% of patients and death in 4.9%; 51% of adverse events are considered to be preventable.

Clinical negligence and other medical errors have become a very disturbing health matter with increasingly daily occurrence among

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African countries. A research that was conducted in eight African countries namely: Egypt, Jordan, Kenya, Morocco, Tunisia, South Africa, Sudan and Yemen on medical errors showed that 83% of medical errors are preventable and most often may result to permanent disabilities and death. Zambia is no exceptional to medical errors especially that it is a developing country with economical struggles.

In Zambia, one of the causes of medical errors is lack of health equipment such as radiology machines in hospitals causing misdiagnosis of certain conditions such as head injury, a study which was conducted at UTH among inpatients with head injury about 253, of these 80 (31.6%) died, 54(67.5%) had an autopsy and 48(88.9%) of them had an intracranial hemorrhage but the severe bleeding was not detected because of lack of the carotid angiography or the Computed Tomography scanning at the hospital. While a study that was conducted in Lundazi-Zambia on maternal death, elaborated that 30% of maternal deaths are due to delayed referral of patients, this happen because of negligence or incompetence of medical personnel. Hand washing non-compliance by health care providers is one of the contributory causal of medical errors in hospitals since it may cause cross contamination.

In addition, disclosing the adverse events or the medical error has been regarded as a significant issue for medical community, although the ground for disclosure through error reduction, information, analysis and assessment in Zambia has not yet been well established. In hospitals, different types of medical error occur with respect to time, place and department among medical personnel and other health care providers although they are not very willing to open-up and share information on medical errors henceforth the best way to curb such discrepancies is to establish a very secure system of medical reporting in hospitals. Reporting of error made by another healthcare provider or oneself is a vague issue that requires much attention; especially that medicine is one of the renowned professions. A survey that was done in England revealed that doctors are less likely to report a medical error in comparison to midwife and nurses (wolf, 2008). Therefore in this study, a non-probability expert/purposive sampling shall be initiated for the purpose of collecting valid information from medical personnel.

Materials and Methods

Medical errors are the third leading cause of deaths in hospitals. Long working hours due to understaffing have a greater impact on medical errors that it causes miscommunication, misdiagnosis and medication errors in hospitals leading to major or minor outcomes to patients or families of the patient/deceased. The latter two medical errors may be caused by miscommunication and may occur independent from understaffing or miscommunication. Miscommunication can also be caused by linguistic and laboratory errors. Additionally, negligence by health personnel leads to delayed referral, misdiagnosis and medication errors in hospital setting.

The study was conducted at Kitwe Teaching Hospital, Kitwe-Zambia because I the Principal Investigator was doing clinical placement there and for the assurance of confidentiality KTH was the suitable site. Additionally, it is one of the bigger hospitals in the province of Copper belt with a wide catchment area henceforth making the study convenient and less costly.

The study design for this study was a cross-sectional quantitative study which aimed at obtaining information concerning the prevalence of medical errors and challenges involved in the collection of such information, at KTH.

Results

Description of the sample sizes

From August 2020 to September 2020, a total of 60 participants consented and were enrolled into the study. The participants were all medical personnel from Kitwe Teaching Hospital who were working in different departments at the time of interviews such as Internal Medicine department, Obstetrics and Gynecology department, surgical department, Pediatrics department, Laboratory department etc.

Participants social demographics

(Figure 1) Shows a 100% participation of recruited members with 10 respondents males representing 17.5% while 47 were female representing 82.5%. Therefore female participants dominated the males with a difference of 37 participants (68%).

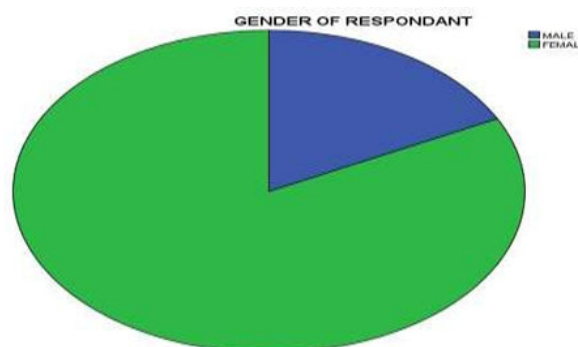


Figure 1: The gender of participants.

The work experience of participants, with participants between 1-2years work experience representing 49.1% (28 participants), while 2-5 years and >5years work experience having 29.8% (17 participants) and 21.1% (12 participants) respectively. Thus, the former had the highest representation than the latter two. The total representation was 57 participants with a 100% valid percent (Table 1).

	Frequency	Percent	Valid percent
1-2 years	28	49.1	49.9
2-5 years	17	29.8	21.1
>5 years	12	21.1	21.1
Total	57	100	100

Table 1: Participant's work experience.

The prevalence of medical errors in general at Kitwe Teaching Hospital (KTH) with variable intervals in percentages, this was based on the subjective experience and not necessary with specify measurable mediums. The intervals between 10% to 20% and 21% to 30% had the major frequencies (modes). With an average mean of

3 on the histogram representing the interval of 21%-30% hence based on the above two illustrations the prevalence of medical errors at Kitwe Teaching Hospital is 25% with 95% confidence interval and marginal error of 5%.

Prevention of medical errors

The prevention of medical errors which was rated at 90% with a mode of 81% to 90%. Thus signifying that most of medical errors are preventable but to achieve an ideal environment for patients free from errors, participants highlighted the preventive measures that can be practiced such as effective communication, introduction of the reporting system at the hospital, training of health care providers with new guidelines, good staffing and interdisciplinary approach towards general health care (Table 2 and Figure 2).

	Frequency	Percent	Valid percent	Cumulative percent
Valid	41%- 50%	2	3.5	3.5
	51%- 60%	2	3.5	7
	61%- 70%	5	8.8	15.8
	71%- 80%	5	8.8	24.6
	81%- 90%	3	5.3	29.8
>90%	40	70.2	70.2	100
Total	57	100	100	

Table 2. Table of the prevalence of preventable errors.

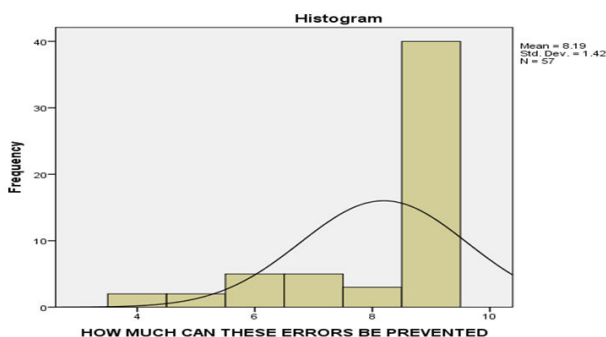


Figure 2: Histogram preventable medical errors.

Discussion

This study revealed how common medical errors are at Kitwe Teaching Hospital. This is ascribed to variant factors such as, limited number of health personnel at the hospital despite the overwhelming clients at the hospital especially that it's a referral hospital and Kitwe city been the second largest populated district in the country after Lusaka thus health personnel are prone to errors due to long working hours. One of the contributing factors to medical errors is performing operations after working long hours since an health care provider would be fatigued hence more prone to making errors thus our finding were consistent with Barger's study despite fatigue, depression and burnout having a score of an interval <10%.

Secondly, delay in treating patients is another factor that contributes to medical errors at Kitwe teaching hospital and this

is said to be caused by intense protocol of echelon thus its 20% common at the hospital. Furthermore, a study that was conducted in Lundazi-Zambia on Maternal Death, elaborated that 30% of maternal deaths are due to delayed in treatment and referrals and this happens due to negligence or incompetence of medical personnel [3]. Therefore this medical error is common and can also be attributed to failure to take the needed precaution and inexperience, henceforth curbing this problem requires a diversified approach.

In addition, from this study medication errors stood at less than 10% at Kitwe Teaching Hospital (KTH), it was found that medication errors are not uncommon and improved pharmacological department's stocking of essential medicines can prevent recurrence of errors because health personnel will not need to start substituting drugs unnecessary, while medication errors is due to poor understanding of basic principles of clinical pharmacology and therapeutics by attending medical personnel [4]. Therefore considering both adequate medical drug supply and improved clinical pharmacological acumen through understanding of basic principles of clinical pharmacology and therapeutics can alleviate the prevalence of medication errors at KTH.

Cross contamination, had very high prevalence this was attributed to limited resources at the hospital facility, increased clientele and poor staffing. This forces medical personnel to start reutilizing certain instruments without proper sterility. On the other hand, health care complexity related medical errors were so minimal that most of the participants rated it to be less than 10% to almost 1%. Despite cross contamination been very common at the health facility it is necessary to understand the seriousness of these medical errors together with other discussed errors at KTH.

90% of medical errors are preventable and this can only be achieved through: effective communication, effective clinical meetings, availability of standard treatment guidelines, good supply of needed medical equipment, improved staffing, improved clinical acumen and clinical skills [5]. A research that was conducted in eight African countries namely: Egypt, Jordan, Kenya, Morocco, Tunisia, South Africa, Sudan and Yemen on medical errors showed that 83% of medical errors are preventable.

Conclusion

In conclusion, this study confirmed that medical errors still happen in our various local health facilities and Kitwe Teaching Hospital specifically had a prevalence of 25%. The most common medical errors at KTH are: delay in treatment (20%), cross contamination (40%), poor medication (10%) and misdiagnosis (10%). These medical errors some are fatal that their result into serious outcomes and/or complications such as colostomies, amputation and instant death. These errors are preventable about 90% of them despite their recurrences. And their occurrence can be attributed to lack of stuffs, lack of funds for basic primary health care needs, poor communication, less necessary echelon. Furthermore, from this study it was found that Kitwe Teaching Hospital lacks a reporting system through which medical errors can be reported despite the willingness of health personnel to have one. Additionally, medical professional especially medical doctors are unwilling to report medical errors, thus it's difficult to curb this ordeal but an effective interdisciplinary approach system can be used to harmonize the burden.

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