Improving Medication Errors in the Kuwaiti Government Hospitals through Training and Clinical Vigilance: Introduction

Student Name

University

Course

Professor Name

Date

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The provision of proper treatment plans depends on the effective administration of medicines. Concisely, medications are central to the advancement of human health outcomes because they improve people's quality of life. Although some patients depend on medicines to support their lives, an increase in their use could heighten the risk of harm to their bodies. This problem is further compounded by the complexity posed by changing demographic and economic variables, such as an increase in the population of elderly patients who have complex medical needs and the increased cost of medical care on the healthcare system. Additionally, the introduction of new medications has compounded the problem further by increasing the risk of harm that patients could endure in the hands of negligent medical personnel (Carayon et al., 2014).

These risks often lead to medication errors, which are known to affect the quality and robustness of healthcare systems (National Coordinating Council for Medication Error Reporting and Prevention [NCCMERP], 2018). The NCCMERP (2018) defines a medication error as "any preventable event that may cause or lead to inappropriate medication use or patient harm while it is in the control of the health care professional, patient or consumer" (para. 1). Comparatively, the Agency for Healthcare Research and Quality (2019) defines a medication error as "an act of commission or omission at any step along the pathway that begins when a clinician prescribes medication and ends when the patient actually receives the medication" (para. 1). Although there are varying descriptions of medication errors, the general understanding is that they often occur through unintentional acts of omission or commission (usually by medical personnel) that may cause harm to patients (Mostafaei et al., 2014). Indeed,

most of such errors emerge from challenges associated with the medical practice or healthcare products and systems (Alsaleh et al., 2018).

The occurrence of human errors in complex medical systems has been a significant topic of contention for many researchers (Gorgich et al., 2015). Their concern stems from the fact that systemic failures in complex and sensitive healthcare models could have far-reaching implications on human life (Gorgich et al., 2015). This level of risk is only replicated in other economic sectors that have a high cost on human life, such as the airline industry. This is why any systematic failure in an airline is often treated with urgency. In the healthcare, sector, the attention on human errors has not been as swift because these errors often affect one person at a time.

The first documented case of a human error occurred in the 1990s and although to err is human, there has been considerable attention directed towards the need to minimise their occurrence (Ali et al., 2018). Many countries have addressed these concerns through the introduction of policies that support the improvement of healthcare quality and patients' safety standards in the healthcare setting (Mekonnen et al., 2017). However, researchers still document several cases where patients are dying or being maimed because of negligent medical personnel who prescribe wrong medicines or give wrong dosages to patients (Magal et al., 2017).

According to Alsaleh et al. (2018), medication errors are ranked as the eighth leading causes of mortality in the United States (US). These errors also cause between 44,000 and 98,000 deaths annually (Alsaleh et al., 2018). These deaths are often deemed preventable, but only 28% of adverse drug effects (ADE) could be categorised in the same manner (Alsaleh et al., 2018). ADEs are "injuries resulting from medical interventions related to a drug" (Alsaleh et al., 2018, p. 2). Relative to the effects of medication errors described above, Freund et al. (2015) say that

such mistakes occur in about 10% of all visits to the emergency department in the US. In France, the rate is higher because it is estimated that medication errors occur in about 42% of emergency room visits (Freund et al., 2015). At the same time, 10% of these errors are estimated to cause ADE (Freund et al., 2015). Independent reports also show that medication errors cost about $42 billion annually ("WHO launches program," 2017). If these figures are statistically analysed relative to other financial indices in the healthcare sector, medication errors account for about 1% of the global healthcare spending ("WHO launches program," 2017).

Medication errors significantly affect patients' welfare and have vast effects on families and communities because they could lead to disabilities and death. For example, Cousins (2018) documents a case where a 5-year-old died after being prescribed epilepsy medicine that was seven times higher than the required amount. There was also another case where a seven-month-old child died in the United Kingdom (UK) after doctors prescribed an anti-epilepsy dosage that was 12 times higher than the required amount (Cousins, 2018). In another incident, a mother of four children died after receiving a dosage that was ten times higher than the required limit (Cousins, 2018). The patient died from a heart attack in Birmingham after an inquest found out that the dosage given to her had excess potassium chloride (Cousins, 2018).

The effects of such medication errors have also been reported among cancer patients because two people died from an overdose of medicine prescribed to them by a doctor to combat the side effects of cancer medication. The patients were given up to five times the required dosage and died (Cousins, 2018). A diabetic patient also died after nurses administered a dosage of insulin that was ten times higher than the required limit. The 80-year-old patient died only hours after receiving the medication (Cousins, 2018).

Although several incidents of death are caused by medication errors, the American Society of Hospital Pharmacists suggests that the actual incidence of medication errors is unknown because different jurisdictions have varied views of the concept (Alsaleh et al., 2018). Similarly, the application of varied methodologies in the computation of medication errors and the use of different study populations to investigate their occurrence has influenced how experts determine their incidence (Abdel-Latif, 2016). These variations notwithstanding, some Indian-based researchers estimate that there is a 25% prevalence of medication errors in hospitals, while others suspect that it is about 15% (Patel et al., 2016). The incidence of such errors is probably higher than the stated numbers because many healthcare professionals fail to disclose some of the cases. Therefore, a significant percentage of medication errors are undetected because of underreporting by healthcare personnel and the apparent lack of physical harm on some affected patients (Jember et al., 2018).

The unwillingness of healthcare professionals to disclose medication errors affects medication management because it is not possible to act on such mistakes when their existence is not acknowledged in the first place (Johnson et al., 2014). Indeed, the importance of medication error reporting is at the core of efforts to curb such mistakes because it is only through accurate statistics that stakeholders can effectively address the problem.

Some healthcare practitioners are unwilling to disclose medication errors because doing so may make them look incompetent. For instance, some pharmacists do not want to disclose such errors because of the fear of looking incompetent (Johnson et al., 2014). Relative to this finding, Hs and Rashid (2017) add that only 10% of medical professionals intend to disclose medical errors when they happen. This statement means that up to 90% of healthcare professionals are unwilling to disclose such errors, especially if they happen under their watch.

Part of the reason why most medical practitioners fail to disclose medical errors is the negative experiences they have after doing so (Mankaka et al., 2014). Concisely, to avoid social stigma, some healthcare practitioners chose to conceal medication errors. Furthermore, most of them know that reporting such errors could lead to the revocation of their practicing licences or unwarranted exposure to public humiliation through negative medical or media publications. In addition, the unwillingness to report medication errors is linked with poor coping mechanisms because most of them are unable to effectively manage the repercussions of committing an error (subject to the implications of the health policies of different jurisdictions). To curb this problem, some healthcare administrators have created an environment of transparency to encourage health workers to report such incidences when they happen (Johnson et al., 2014).

The occurrence of medication errors is also attributed to the failure to document 'near misses' during the processes of drug dispensing, making prescriptions and drug administration (Kang et al., 2017). "Near misses" refer to the potential for medication errors to occur (Kang et al., 2017). Most of these mistakes stem from the process of prescribing. They are also associated with weak reporting structures that allow pharmacists to "get away with" their mistakes (Kang et al., 2017). Inaccuracies in reporting medication errors are further catalysed by the lack of physical harm in some patients (Kang et al., 2017).

Although some medication errors are not associated with physical harm on patients, there is little contention that demographic variables affect their occurrence (Mankaka et al., 2014). For example, the gender of a healthcare practitioner affects the incidence of such mistakes because male and female health practitioners have different probabilities of committing such errors (Mankaka et al., 2014). Stated differently, male practitioners are often deemed to have a high likelihood of committing medication errors compared to their female counterparts (Mankaka et

al., 2014). Furthermore, the existence of sexist attitudes among many male physicians who make female colleagues fearful of reporting medication errors adds to the high incidence of medication errors (Mankaka et al., 2014). Here, the general understanding is that men are more likely to cause medication errors compared to their female counterparts.

The attitudes and beliefs of healthcare practitioners also affect the risk of medication errors. Age is a similar moderating variable for their incidence. For instance, older and younger medical professionals have different attitudes towards medication errors because the latter group is more cognisant of this challenge compared to their older counterparts (Nevalainen et al., 2014). At the same time, younger professionals are more fearful of committing such mistakes and report them more frequently compared to their older peers (Nevalainen et al., 2014). Nonetheless, some researchers have suggested that a reduction in the number of medication errors in healthcare facilities depends on the willingness of healthcare practitioners to learn from their mistakes (Elmontsri et al., 2017).

Experience is also another variable affecting the occurrence and reporting of medication errors because experienced professionals are less likely to commit such mistakes compared to their younger counterparts (Nevalainen et al., 2014). Similarly, older and more experienced medical professionals are more likely to apologise for committing an error compared to their younger and inexperienced peers (Nevalainen et al., 2014). More experienced medical professionals also have a higher tolerance for uncertainty compared to health practitioners who have lower levels of experience (Nevalainen et al., 2014). Therefore, the number of years a medical practitioner has worked in his/her profession affects how they cope with medication errors. These errors commonly occur during the processes of prescribing, administering or dispensing drugs. Although such errors are few, relative to other types of medical cases, such as

prescription medicine misuse, they could have serious financial, emotional and physical harm to affected patients (Alsaidan et al., 2018).

Medication errors could cause adverse events on patients but when they are detected earlier, they have little potential for harm (Rishoej et al., 2018). Medication errors that cause harm are either preventable or non-preventable. Prescription and dispensing errors are the most commonly reported (Cousins, 2018). It is also estimated that one out of 20 incidents of medical errors are medication-related, while 1/550 incidents have serious implications on the safety of affected patients (Cousins, 2018). Relative to this assertion, out of 1 billion medical errors analysed in 2012, 1.8 million of them were medication-related and had serious implications on patient safety (Cousins, 2018). Prescription errors are the most commonly reported medical glitches because they affect 7% of medication orders and 2% of patient days (Cousins, 2018). In addition, 50% of hospital admissions are linked to this problem (Cousins, 2018).

Most medication errors occur when prescribing medicine to patients. Others occur during the administration of dosages (Elden & Ismail, 2015). Most of these mistakes cause harm to patients. These errors stem from weaknesses in healthcare systems but the sources of the problem are varied (Elden & Ismail, 2015). For example, drug-to-drug interactions, which often occur when two types of medications are administered and one of them reduces the efficacy of another, is considered a source of such mistakes (Assiri et al., 2018). Other causes and catalysts of medication errors are self-medication and poor communication between healthcare practitioners and their patients (Farzi et al., 2017). Patients could also cause medication errors when they demand different treatments for each type of symptom or complication they have (Assiri et al., 2018). Unethical drug promotions and inducements have also been linked with these errors (Patel et al., 2016).

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