JOURNAL OF INTERNATIONAL CRISIS AND RISK COMMUNICATION RESEARCH
ISSN: 2576-0017
2024, VOL 7, NO S8

Improving Patient Safety: The Role of Nursing in Preventing Medical Errors

Mohammed Abdullah Ghunaim Alrashidi[1], Asrar Eid Mohammed Alrashidi[1], Manal Haji Saleh Alrashidi[1], Jawaher Muaytiq Kheiaiwi Alrashidi[1] , Khayrah Nasser Farhan Alrashidi[1] ,Abdullah Jami Muflih Alrashidi[1] ,Hamed Ateeq Sayed Alshammari[1], Manal Kamel Matan Alshammari[1], Shrooq Fahad Fayhan Alrashidi[2]

1. Nursing, Hail General Hospital
2. Nursing, Primary Healthcare Center (PHC) in Al-Halifa

ABSTRACT

Introduction: Patient safety is a very important component in producing good quality healthcare for human beings and one of which is prevention of medical errors. Medical errors like getting wrong diagnosis, having medication mistakes, or mismanaging procedures continue to be problems in the healthcare systems all over the world. Nurses, who work mostly for patient care, are given unique opportunities in recognizing possible risk-correct impacts and then contributing towards establishing a culture of safety in healthcare settings.

Aim of work: To explore the critical role that nursing professionals play in preventing medical errors and improving patient safety.

Methods: We conducted a comprehensive search in the MEDLINE database's electronic literature using the following search terms: Improving, Patient Safety, Role, Nursing, Preventing, Medical Errors. The search was restricted to publications from 2016to 2024 in order to locate relevant content. We performed a search on Google Scholar to locate and examine academic papers that pertain to my subject matter. The selection of articles was impacted by certain criteria for inclusion.

Results: The publications analyzed in this study encompassed from 2016 to 2024. The study was structured into various sections with specific headings in the discussion section.

Conclusion: Nurses undoubtedly prevent many medical errors and improve well-being in patients. They administer medicines, monitor cases per their profession, and effectively coordinate communication with the patient, thereby making it easier to pinpoint when risk may take place, intervening as necessary, and improving the quality of care. They reduce the incidence of medication errors occurring by: good communication, medication safety practice, monitoring vigilance, teamwork, and ongoing education. Nurses can overcome medicine errors and bring patient outcomes to be significantly higher. However, the complications in the healthcare systems will need to be faced by nurses in the possibility of reducing errors. Such systemic issues include lack of staffing, poor communication channels, and no standardized procedures. Certainly, these are ways that organizations will promote safety much in favor of supplying adequate provision for their nurses and staff training. Patient safety improvement may, therefore, go along with the reductions in risk associated with patients. Most importantly, nurses can prevent medical errors, which further allow the achievement of high-quality, patient-centered care among the complexities of modern healthcare environments.

Keywords: Improving, Patient Safety,Role, Nursing, Preventing, Medical Errors

INTRODUCTION

have submitted the hypothesis and or the thesis above: "Patient Safety is the bedrock of high-quality healthcare, and this includes preventing medical error, which forms one of the most important criteria of patient safety" (Alenizi et al., 2022). From incorrect diagnoses to prescription errors or misadministration and procedural error, medical errors remain one of the greatest challenges facing health systems all over the world (Rodziewicz & Hipskind, 2020). Thus, increases the duration of hospital stay, extra expenditure in healthcare, and, in turn, loss of lives, in some cases. In this regard, nursing professionals play a significant role in helping reduce the risks of medical errors as well as the safety of the patient. Nurses are at the forefront of caring for patients. Their position makes them much more uniquely qualified to identify, identify and intervene, and, therefore, promote a culture of safety into the healthcare setting. The fact that they continuously interact with patients while also having clinical skills gives them the necessary ability to intervene in the dropping of errors within the entire care process (Chellam Singh & Arulappan, 2023).

Roles of nursing in preventing medical error do not end with ensuring accurate and timely completion of tasks. Nurses play a very important role in advocacy for patient safety by good communication, collaboration with other team disciplines, and constant monitoring and observation of patient conditions. Most of the time, nurses tend to understand and recognize early signs of deterioration and possible risks of complications in a patient's course. Their

prompt actions can avert most catastrophic adverse events. In addition, patient education regarding their diseases and the crucial requirements of complying with health practices and patient's family members' learning from nurses serves sterner part in preventing errors (Johnson et al., 2019).

Safety is promoted by nurses best through practice such as practices, protocols, and evidence-based strategies that reduce the risk of injuries. Continual professional development and training of nurses in safety practices, as well as an environment that encourages reporting of errors or near misses, form key parts of an inclusive patient safety strategy. Nursing leadership is also central to establishing safety standards within healthcare institutions and to ensuring that a culture of safety extends across the entire institution (Spoon et al., 2020).

AIM OF WORK

This review will expound the vital role of nursing professionals as key figures in the prevention of medical errors and the promotion of patient safety. The finding forms the extent to which they contribute to error prevention, ranging from patient care to the institutional influencing of safety policies. Besides, this will read on education, communication, collaboration, and reduced medical errors and their outcomes. Ultimately, the essay seeks to create a context for supporting nursing practice by integrating safety into the daily provision of health care services, emphasizing the multidimensionality of nursing in patient safety to prevent errors and raise the quality of health care delivery in general.

METHODS

A thorough search was carried out on well-known scientific platforms like Google Scholar and Pubmed, utilizing targeted keywords such as Improving, Patient Safety, Role, Nursing, Preventing, Medical Errors. The goal was to collect all pertinent research papers. Articles were chosen according to certain criteria. Upon conducting a comprehensive analysis of the abstracts and notable titles of each publication, we eliminated case reports, duplicate articles, and publications without full information. The reviews included in this research were published from 2016 to 2024.

RESULTS

The current investigation concentrated on the critical role that nursing professionals play in preventing medical errors and improving patient safety between 2016 and 2024. As a result, the review was published under many headlines in the discussion area, including: Understanding Medical Errors and Their Impact, Factors Contributing to Medical Errors and The Role of Nurses in Preventing Medical Errors

DISCUSSION

Patient safety has always remained a vital issue in health care systems across the globe as medical errors are still one of the leading causes of morbidity and even mortality even today (Anjum et al. 2024). According to the World Health Organization (WHO), a significant part of the patient harm is attributable to medical errors, and estimates suggest that in fact, one in ten patients worldwide suffers preventable adverse events (World Health Organization, 2021). Among many of these healthcare professionals involved in the delivery of care, nurses play a vital role in ensuring patient safety as they are often the frontline caregivers mostly engaged in direct patient care, monitoring, and communication with other healthcare team members. With nursing's pivotal position in the healthcare system, nursing professionals have an exceptional opportunity to deter medical errors and enhance patient outcomes (Machitidze et al., 2023). This review tries to illuminate how nursing activities can prevent medical errors, including what types of errors occur, contributory factors involved, and strategies to enable nurses to improve patient safety.

Understanding Medical Errors and Their Impact

According to an exhaustive definition, as Rodziewicz and Hipskind have put it in 2020, it is preventable adverse events resulting from actions taken or not taken by health-carers into consideration. Such errors include misdiagnosis, wrong treatment, wrong administration of medication, and even communication errors at various stages in the patient care continuum. The forms of medical errors include but are not limited to medication errors, diagnostic errors, surgical errors, and other patient-monitoring errors. They all have the possibility of harming, from minor to life-threatening situations, longer hospital stays, elevated costs, and poorer public trust in the healthcare system (Soori, 2024).

Among all the medical errors, more than this can be said about medication errors. According to the IOM (Institute of Medicine), it is also the most common type of preventable error in hospitals. From issuance to dispensing, a drug could undergo failure at any stage in the medication management cycle. Improper dosage, wrong medication, allergies, and lack of monitoring patient responses from intake of medications are some of the causes of most medication errors (Al-Worafi, 2020). Nurses usually form a vital part around the process through which prescribed medicines are administered to the patient and, thus, are in a formidable position of preventing medication errors through vigilance and double-checking, as well as communicating effectively with others like physicians and pharmacists (Hanson & Haddad, 2023).

Diagnostic errors also encompass a very significant category of errors in medicine, mostly arising from misinterpretation of symptoms, lab results, or radiological imaging-studies. In fact, nurses can play a central role in identifying any abnormality that could indicate a misdiagnosis or lack of correct intervention by health care professionals, chiefly through careful observation and assessment of patients, in conjunction with the physician to detect early signs of erroneous diagnosis and initiate corrective actions (Gleason et al., 2016).

Surgical errors are not many in number, but the effects are terribly grave and will often include various lists such as wrong sites for surgery, retention of surgical instruments, or anesthesia-related complications. These perioperative nurses are the major influences in the prevention of such cases because they strictly adhere to the surgical safety checklist, verification of the patient's identity and site of surgery performed, and good communication among members of the surgical team (Chellam Singh& Arulappan, 2023).

Factors Contributing to Medical Errors

Researches point out several causes of medical errors; human behavior, poor communication, and system shortcomings are the major ones. Non-communication or under-communication among health care providers has been shown to contribute highly to medical errors (Tolley et al., 2018). Wrong choices in patients' care have occurred because there was no communication between the nurses, the doctors as well as the logistics pharmacist. They, however, also include delayed treatment and the inability to recognize a patient with regards to clinical changes occurring. For example, some nurses forget to communicate changes in the vital signs of patients to the physician, while some misinterpret a verbal order from physicians, which adds up into wrong treatment (Nkurunziza et al., 2019).

Not enough staffing and heavy burdens have added to the causes of medical errors. A nurse who is overworked or works in an understaffed unit will not be able to appropriately observe all of his or her patients, thus possibly missing private details that are important. The situation is added to by the fatigue, stress, and burnout of nurses. Research has revealed that nurse fatigue and low nurse-to-patient ratios have an association with a rise in the number of medication errors, patient falls, and other adverse events (Kiymaz & Koç, 2018).

Medical mistakes can also happen with irregular procedures and procedures. There could be very different practices, such as methods of identification for patients, administering drugs in some time of documentation, proceeded along the way, which can trigger confusion and the chances of error. These include use of check lists, implementation of electronic health records, and guidelines for administering medicine that can standardize care practices and reduce variability, thus ensuring that care practices are uniform and safe (Nissinboim & Naveh, 2018).

Technology, as beneficial as it sometimes may be, can be a cause of medical errors when poorly integrated into clinical practice. Once in time, the patient care is affected by any inaccurate data entry, bad interface designs of electronic health record systems, or even because of malfunction in the technology itself. As the chief users of EHRs and other clinical technologies, it becomes important for nurses to be properly trained in using it while being also aware of the possible system errors (Soori, 2024).

The Role of Nurses in Preventing Medical Errors

Nurses play a crucial role in patients' care and have a unique position to eliminate medical errors and improve patients' safety. Several strategies could be employed by nurses to minimize the chances of error, improve the quality of care, and enhance patient outcomes. These strategies can be put under the following major heading: communication, medication safety, patient monitoring, teamwork, and continuing education (Alrabadi et al., 2021).

1. **Effective Communication**

Communication is at the core of patient safety, with nurses being the first people a patient gets to contact. They would also boast as being an intermediary between patients, families, and the healthcare team. Appropriate open, clear as well as accurate communications will prevent misunderstandings, improve coordination of care between caregivers, and ensure important patient information is shared across team members(Souza Settani et al., 2019).

Another way that most healthcare organizations work towards improving communications is through a standardized handoff tool or protocol. An example is SBAR, which stands for Situation, Background, Assessment, and Recommendation, practiced in most cases when transferring patients from one shift to another. This way, a nurse has a proper format to present critical issues, thus leaving nothing behind on transitional care (Shahid & Thomas, 2018).

In fact, patients should encourage their loved ones to tell them if they have any concerns about symptoms, possible mistakes, and so forth. Patient advocates can guard the patient against certain errors since patients may notice things that the healthcare provider or system miss. For instance, a nurse who attentively listens to a patient will be able to perceive differences in care and work to resolve these discrepancies before harm ensues (Obos, 2021).

2. **Medication Safety**

This error is one of the most common among the many preventable medical errors and can be prevented as much as possible by nurses. Nurses are charged with administering medications, observing for adverse effects, and educating

patients on the medications they are prescribed-and what happens if they miss a dose (Jinxiang, 2023). Medication errors can significantly be reduced if, besides following the five rights of medication administration: the right patient, right drug, right dose, right route, and right time, double-checking all medications, especially high-alert medications, is done to confirm that a prescription compares to the patient's health status, allergies, and current condition (Uduiguomen, 2024).

Proper documentation of medication administration is also an important element in medication safety. During medication administration, nurses ensure that every medication is included in a patient's chart to prevent overdoses or missed doses. Nurses should be highly alert to possible interactions between drugs and any adverse reactions and ensure that they notify the health team concerned immediately (Adel Mohamed Tawfik et al., 2024).

3. Patient Monitoring and Early Detection

Nurses keep an eye on patients for 24 hours outdoors as well as keeping track of critical conditions or unstable patients indoors that include regular assessment of vital signs. This observation can be about changes in physical or mental status as per individual perception or might notice any possible complications-from within, yet may also represent a sign or symptom of deterioration outside and-or an error or complication in the medical process. Thus, all these factors can lead to the early detection of a patient's condition change, helping them to have an adequate intervention time to prevent serious complications (Comisso et al., 2018).

Nurses quickly become aware of subtle changes in the mental status or alertness of a patient, which may herald incipient complications, such as those caused by infections, medication side effects, or strokes. Early detection and swift intervention by nurses would reduce the risk of accidents occurring and the chances of medical errors happening (Wood et al., 2019).

4. Teamwork and Collaboration

Attaining effective teamwork among healthcare practitioners thus remains paramount in reducing, if not wholly eliminating, medical errors and improving patient safety. Nurses thus continuously team up while carrying, on the other hand, physicians, pharmacists, respiratory therapists, and other nurses on the outcome of care (Anjum et al., 2024). This permits patients to remain safe from communication lapses as well as a shift in responsibilities, including care plan coordination and issue identification and resolution within the team.

In fact, it should be said that without cooperation and collaboration, nothing will be possible with these high-risk situations such as surgery, emergencies, or complex treatments. Nurses should be on the floor taking part in multidisciplinary rounds and rotating with other disciplines, sharing their expertise in patient care. This can go a long way toward keeping an open line between interaction and consideration from healthcare teams while working toward identifying possible errors and minimizing risk exposure before the patient suffers any harm (Rosen et al., 2018).

5. Continuous Education and Professional Development

Continuous education would thus encourage improved patient safety and prevention of errors. Therefore, continuing education has to be on the evidence-based practices, new medicines, and new technologies that the nurse should ever know. These measures, often in terms of regular training and continuing professional development, would help the nurses improve their knowledge and skills so they could give and do safe patient care (Vaismoradi et al., 2020).

Patient safety and error prevention integrated into nursing curricula and continuous training programs should include an effective approach designed to encourage nurses to report near misses or errors, thus developing a culture of safety into an organization. In addition to this, the organizations should create an environment that encourages error offering towards improvement instead of punishments for errors so that a safety culture can be instilled in healthcare organizations (Ji et al., 2021).

CONCLUSION

Ultimately, nurses play an irreplaceable role in minimizing medical errors and improving the safety of patients in any given healthcare setting. Being the frontline caregiver, they are most likely the first to notice the changes in a patient's condition, administer medication, and make communication with other health care providers. Therefore, they are in the finest position to identify and eliminate risks before they can actually harm. The five rights of medication administration, continuous monitoring of patients, and effective communication with others will greatly help in significantly decreasing errors, especially in high risk areas such as medication taking and patient monitoring.

Many more issues can find out such a great cause of patient safety be bigger than teamwork and collaboration. Nurses usually work on multidisciplinary teams where they have to sit for the communication and coordination of various nursing practitioners. Openly communicating makes possible identification of errors and safeness in patient care delivery. Active partaking in team discussions, rounds as well as patient care plan people ensures that the entire healthcare team aligns for the sole purpose of safety for the patient.

Education and professional development across the continuum are necessary for the reduction of medical errors. It equips nurses with updated evidence-based practices, safety protocols, and new healthcare technologies essential for providing the highest-standard care. Safety culture arises in which things such errors are framed in terms of learning and improvement while being proactive in preventing them.

Empower the nurses with resources and training and provide support as a healthcare organization so that the culture will favor patient safety creating an environment in which nursing practice of all forms can progress. These great health heroes must continue to play their roles in curtailing medical errors and in ensuring that all patients receive safer, better-quality care. Their continuous effort is essential in the achievement of healthier outcomes and reduced preventable harm in the health care system.

REFERENCES

Adel Mohamed Tawfik, E., Hassan El-sayed Mahfouz, H., & Ahmed AbdAllah, N. (2024). Factors Influencing Effective Documentation and its relation to Patients Safety as Perceived by Staff Nurses. *Journal of Nursing Science Benha University*, *5*(2), 168-184.

Alenizi, J. M., Albalawi, M. S. M., & Alanazi, K. S. T. (2022). THE CRITICAL IMPORTANCE OF PATIENT SAFETY IN MODERN PRACTICE. *Neuropsychopharmacologia Hungarica*, *20*(4).

Alrabadi, N., Shawagfeh, S., Haddad, R., Mukattash, T., Abuhammad, S., Al-rabadi, D., ... & Al-Faouri, I. (2021). Medication errors: a focus on nursing practice. *Journal of Pharmaceutical Health Services Research*, *12*(1), 78-86.

Al-Worafi, Y. M. (2020). Medication errors. In *Drug safety in developing countries* (pp. 59-71). Academic Press.

Anjum, F., Din, B. R. U., & ASHRAF, S. (2024). Patient Safety and Quality Improvement: Reducing Medical Errors in Healthcare. *Multidisciplinary Journal of Healthcare (MJH)*, *1*(2), 13-23.

Chellam Singh, B., & Arulappan, J. (2023). Operating Room Nurses' Understanding of Their Roles and Responsibilities for Patient Care and Safety Measures in Intraoperative Practice. *SAGE Open Nursing*, *9*, 23779608231186247.

Chellam Singh, B., & Arulappan, J. (2023). Operating Room Nurses' Understanding of Their Roles and Responsibilities for Patient Care and Safety Measures in Intraoperative Practice. *SAGE Open Nursing*, *9*, 23779608231186247.

Comisso, I., Lucchini, A., Bambi, S., Giusti, G. D., & Manici, M. (2018). Nursing in critical care setting: an overview from basic to sensitive outcomes.

Gleason, K., Harkless, G., Stanley, J., Olson, A. P., & Graber, M. L. (2021). The critical need for nursing education to address the diagnostic process. *Nursing outlook*, *69*(3), 362-369.

Hanson, A., & Haddad, L. M. (2023). Nursing rights of medication administration. In *StatPearls [Internet]*. StatPearls Publishing.

Ji, Y., Lee, H., Lee, T., Choi, M., Lee, H., Kim, S., ... & Park, S. (2021). Developing an integrated curriculum for patient safety in an undergraduate nursing program: a case study. *BMC nursing*, *20*, 1-11.

Jinxiang, S. (2023). Optimizing Patient Outcomes: The Role of Medication Administration and Nursing Care: A Systematic Review. *Asian Journal of Research in Nursing and Health*, *6*(1), 321-325.

Johnson, M., Sanchez, P., Langdon, R., Manias, E., Levett-Jones, T., Weidemann, G., ... & Everett, B. (2017). The impact of interruptions on medication errors in hospitals: an observational study of nurses. *Journal of nursing management*, *25*(7), 498-507.

Kiymaz, D., & Koç, Z. (2018). Identification of factors which affect the tendency towards and attitudes of emergency unit nurses to make medical errors. *Journal of clinical nursing*, *27*(5-6), 1160-1169.

Machitidze, M., Gogashvili, M., & Durglishvili, N. (2023). The Nurses' Role in Patient Safety-Literature Review. *American Journal of Biomedical Science & Research*, *18*(6), 612-616.

Nissinboim, N., & Naveh, E. (2018). Process standardization and error reduction: A revisit from a choice approach. *Safety science*, *103*, 43-50.

Nkurunziza, A., Chironda, G., Mukeshimana, M., Uwamahoro, M. C., Umwangange, M. L., & Ngendahayo, F. (2019). Factors contributing to medication administration errors and barriers to self-reporting among nurses: a review of literature. *Rwanda Journal of Medicine and Health Sciences*, *2*(3), 294-303.

Obos, D. (2021). *Exploring the Attributes and Influence of Hospital Culture and Resilience on Registered Nurses' Willingness to Speak Up about Patient Safety Concerns*. AT Still University of Health Sciences.

Rodziewicz, T. L., & Hipskind, J. E. (2020). Medical error prevention. StatPearls. Treasure Island (FL): StatPearls Publishing.

Rosen, M. A., DiazGranados, D., Dietz, A. S., Benishek, L. E., Thompson, D., Pronovost, P. J., & Weaver, S. J. (2018). Teamwork in healthcare: Key discoveries enabling safer, high-quality care. *American Psychologist*, *73*(4), 433.

Shahid, S., & Thomas, S. (2018). Situation, background, assessment, recommendation (SBAR) communication tool for handoff in health care–a narrative review. *Safety in Health*, *4*(1), 1-9.
Soori, H. (2024). Errors in Medical Procedures. In *Errors in Medical Science Investigations* (pp. 205-224). Singapore: Springer Nature Singapore.
Souza Settani, S., dos Santos Silva, G. B., Tavares Julião, I. H., Florêncio da Silva, M. C., Bernardino da Silva, J. C., Lopes Oliveira, D. A., ... & de Carvalho Silva, C. (2019). Nursing communication and its impact on patient safety. *Journal of Nursing UFPE/Revista de Enfermagem UFPE*, *13*.
Spoon, D., Rietbergen, T., Huis, A., Heinen, M., van Dijk, M., van Bodegom-Vos, L., & Ista, E. (2020). Implementation strategies used to implement nursing guidelines in daily practice: A systematic review. *International journal of nursing studies*, *111*, 103748.
Tolley, C. L., Forde, N. E., Coffey, K. L., Sittig, D. F., Ash, J. S., Husband, A. K., ... & Slight, S. P. (2018). Factors contributing to medication errors made when using computerized order entry in pediatrics: a systematic review. *Journal of the American Medical Informatics Association*, *25*(5), 575-584.
Uduiguomen, O. F. (2024). Mitigating Nursing Errors in Medication Administration.
Vaismoradi, M., Tella, S., A. Logan, P., Khakurel, J., & Vizcaya-Moreno, F. (2020). Nurses' adherence to patient safety principles: a systematic review. *International journal of environmental research and public health*, *17*(6), 2028.
Wood, C., Chaboyer, W., & Carr, P. (2019). How do nurses use early warning scoring systems to detect and act on patient deterioration to ensure patient safety? A scoping review. *International journal of nursing studies*, *94*, 166-178.
World Health Organization. (2021). *Global patient safety action plan 2021-2030: towards eliminating avoidable harm in health care*. World Health Organization.