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Medication Safety Practices among Healthcare Personnel at Beni-Suef University Hospital; an Explorative Qualitative Study

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Abstract

Medication safety is a healthcare priority. Improving medication safety, especially in hospitals, is popular. Many therapies have suggested; however, there is little data on their efficacy. It is vital to identify the primary contributors and determine the current development status of the main research areas. We examined healthcare practitioners' views on medication safety at Beni-Suef University Hospital to identify barriers to improvement and examine their medication safety rules. This was an exploratory qualitative study, conducted from March 2023 to Jan 2024 in the all departments and intensive care units (ICUs) in Beni-Suef University Hospital. Study included 63 participants. Three themes emerged from this study as major factors contributing to medication safety problems: (1) limited use of important technologies such as computerized provider order entry, (2) communication gaps between healthcare provider, and (3) the lack of medication safety programs in our hospital and high workloads. Suggestions for improving medication safety practices included continuous education for healthcare professionals and competency assessment focusing on medication safety. Based on their experiences, participants are in a prime position to facilitate safe medication management. However, they can only do their jobs well if they have the knowledge to evaluate the risks associated with medication administration and if their working conditions are conducive to doing so.

Keywords: Health Care Personnel, Practice, Medication &Errors.

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1. Introduction

With an estimated one in ten patients suffering an injury while receiving treatment, promoting patient safety in healthcare settings is an enormous problem on a global scale [1]. The World Health Organization (WHO) released "Medication without Harm, WHO Global Patient Safety Challenge" in March 2017 to bring attention to important ideas and tactics in patient safety [2]. Action needed to decrease patient damage caused by dangerous drug practices and medication errors, according to the challenge. There is mounting evidence that healthcare providers frequently put patients at danger when they prescribe, deliver, and administer drugs [3-4]. The most common kind of medical error and a major contributor to high healthcare costs are medication errors (MEs), making medication safety a top priority. Any avoidable occurrence that can result in improper medication administration or patient injury while the drug is under the care of the healthcare provider, the patient, or the consumer is referred to as a medication ME [5]. Between five percent and twenty-five percent of all drug administrations estimated to be MEs. It is during the preparation and delivery of medications that one-third of all MEs causing injury to patients occur. When any one of the seven rights of medicine administration—the correct patient, drug, dose, time, route, rationale, and documentation—breached, medication administration errors (MAEs) can occur [6-7].

Due to the high incidence of MAEs, numerous protocols have been developed over the last decade to make medicine delivery safer. Electronic systems, specialized pharmaceutical nurses, e-learning, visual reminders and protocols, double-checking, and interruption protection are all part of these practices [8-9]. Despite widespread belief that bar-coded medicine administration significantly reduces MAEs, the data supporting this claim is often weak [10]. These approaches are finding more and more ways into hospital policies, even if there is a lack of high-quality research. However, a major issue is the compliance of healthcare workers with safety protocols [8]. Few details are known about health care workers' MAE prevention and safety strategies. Knowing these experiences and viewpoints helps customize safety practices to barriers and facilitators and ensure adequate implementation. Consequently, the purpose of this research was to better understand healthcare providers' views on pharmaceutical safety issues at Beni-Suef University Hospital and to discover the obstacles to enhancing it.

2. Materials and Methods

2.1. Methods

2.1.1. Setting and context

The study was conducted at the Beni-Suef University, a tertiary care university hospital in Egypt.

2.1.2. Participants and Sampling

To better understand their views on pharmaceutical safety, this study set out to survey medical professionals (doctors, nurses, and pharmacists) employed by Beni-Suef University Hospital. Surgical, internal medicine, intensive care, and emergency services units were the focus of our qualitative exploratory study of healthcare workers. We used a very heterogeneous purposive sampling strategy to get a good cross-section of opinions on the topic from both the managerial and operational levels. At first, the researcher sought participation from nursing managers, nursing managers' quality and safety innovators, and ward managers for a study on methods to enhance drug safety. Other participants' names subsequently retrieved from various departments via snowball sampling. These participants represented a range of seniority, training levels, and perspectives on medication safety practices. Registered physicians, pharmacists, and nurses (male or female) with a minimum of one year of experience in either staff or managerial roles invited to participate in this phase of the study. The researcher asked everyone who took part to do so. Saturation achieved by continuing this process.

2.1.3. Study tools

A qualitative exploratory study that relies on focus groups to collect information. After reviewing previous research on the same topics, we created a topic guide based on the results of an information questionnaire on socio-demographic variables and an interview form. Issues related to medication safety, the present state of medication safety practice, the difficulties and hurdles in this area, and recommendations for how to enhance medication safety at Beni-Suef University Hospital were all part of the discussion guide. Each member given written information about the focus group procedure and its purpose. Recordings and verbatim transcriptions of the interviews done with the participants' permission.

2.1.4. Data generation

Ten roundtable discussion groups were formed. To encourage debate and idea sharing amongst professionals from diverse fields, each group contained at least one pharmacist, a physician, and a nurse. All interviews moderated and recorded by the same researcher. The interviews were performed in a quiet area within the facility where respondents worked uninterrupted. Care was taken to hold interviews in an appropriate environment to understand the medication safety situation analysis. The moderator allowed participants to discuss or add points during each 30-45-minute conversation. If the moderator thought the participant's comment was beneficial, they asked extra questions, such as "would you elaborate more on this?"

2.1.5. Data Analysis

All interviews recorded, transcribed verbatim in Arabic, and translated into English. Data analysis began after transcribing the first interviews. The researcher transcribed voice recordings. Using thematic content analysis, the transcript researcher identified common themes. All participants were assured confidentiality and instructed that no identifying data would be disclosed. Individual round-table discussion group forms were reviewed to determine saturation.

3. Results and discussion

3.1. Results

In the round-table discussion, 63 individuals—including 14 doctors, 15 clinical pharmacists, 31 nurses, and 3 hospital quality coordinators—contributed with an average age of 35.23 ±4.94 years. Of the total participants, 41 were female, making about 65% of the total. Nearly half of the participants (46%), nearly half (44.4%), and a small percentage (9.6%) had job experience of five years or less, five to ten years, or more. As issues, reasons, and weaknesses of current medication safety practice, participants highlighted the limited use of technology, communication gaps between healthcare professionals, and the hospital's lack of a robust drug safety policy. It also noticed that there was a lack of competent pharmaceutical safety officials, regulations, processes, and standards. Three specific themes emerged from the analyzed material: (1) limited use of important technologies such as computerized provider order entry, (2) communication gaps between healthcare provider, and (3) the lack of medication safety programs in our hospital and high workloads.

3.1.1. Limited use of technology

-"The physician's illegible handwriting and spoken instructions were cited by participants as a key cause of prescription mistakes. They hypothesized that Computerized Provider Order Entry CPOE, or computerized provider order entry, could solve the issue" *(Physician Round-table 1).*

Notable technologies that are absent from the majority of hospital departments include pharmacy-information and bar-coding systems.

-‘‘Access to patient records, diagnoses, medication histories, and test results is hindered by an inadequate database’’ *(Pharmacist, Round-table 2).*

-‘‘Regardless of whether our hospital has CPOE or not. We should have a top-notch system since more errors will occur if it is not fully integrated’’ *(Pharmacist Round-table (1).*

3.1.2. Communication gaps between healthcare personnel

Respondents agreed that better communication between healthcare providers is necessary to reduce the occurrence of catastrophic drug mistakes.

-‘‘Due to lack of unified communication, a patient may receive a controlled medication prescription from one department or outpatient clinic and then receive it from another. This causes therapeutic duplication" *(Pharmacist, Round-Table 3).*

-‘‘I am approached by the patient. My message to him was simple. He visits the nurse, who gives him conflicting information; he then consults the pharmacist, who gives him even different information. The patient becomes perplexed; thus, a standardized means of communication is required’’ *(Physician, Round-table 2).*

Another finding was the existence of obstacles to communication between patients and pharmacists. Patients

and pharmacists do not always understand each other, and some of the participants explained this.

-‘‘No private space is available, and even if the community pharmacist wanted to, he simply does not have the time to provide counseling to his patients’’ *(Pharmacist, Round-table 1)*

3.1.3. Absence of medication safety program

Underreporting of prescription errors and adverse drug reactions (ADRs) is partially due to healthcare personnel not receiving enough basic training and not receiving ongoing education on medication safety issues, according to most participants.

-‘‘Medication safety programs, which must include adverse event reporting systems, must be hospital-specific because every healthcare facility is unique’’ *(hospital quality coordinators, round table 1).*

3.1.4. Workload or inadequate number of staff

Workload mentioned by participants as a potential obstacle that could lead to medication mistakes.

-‘‘Our hospital's pharmacists sometimes distribute over 300 drugs, which increases the risk of dispensing errors’’ (Pharmacist, Roundtable 2).

-‘‘It's commendable that you're administering meds...afterwards, you'll receive a call informing you that Room 3 is required for an additional reason. What on earth am I to do? (Nurse, Round-table 3).

3.1.5. Suggestions to improve medication safety in our hospital

Furthermore, participants asked to propose ways to enhance medication safety practices. These could include instituting a safety culture, providing ongoing education to healthcare workers, conducting competency assessments with a medication safety focus, raising healthcare workers' awareness of the medication error trend, creating a centralized database to guarantee continuity of care, publishing research on medication safety, and appointing medication safety officers. According to the following coats:

-‘‘Medication safety research must be well structured and publicized to improve, as there are activities everywhere in hospitals but no research’’ *(Pharmacist Roundtable 2).*

-‘‘Continuous education and competency assessment of our medical personnel or healthcare providers: we need to ensure they can care for our patients’’ *(Physician, Roundtable1).*

-‘‘Nurses administer patient drugs and should be significantly involved in continual education and competency evaluation’’ *(Nurse, Round-table 2).*

-‘‘Many hospital nurses are thrilled to hear about drug safety practice assessment’’ *(Nurse, Round-table 3).*

After considering all of the suggestions, we settled on educating nurses at Beni-Suef University Hospital about medication administration safety as the most appropriate and applicable course of action. We also wanted to investigate the role of the nurse in this process.

3.2. Discussion

Medication management and safety involves more than just making sure patients take their meds as directed; it involves a wide range of responsibilities held by many levels of healthcare workers. When it comes to administering medications safely, numerous studies have found those nurses' clinical reasoning and care coordination with doctors and pharmacists are crucial [11-13]. However, it is not always obvious when their roles overlap. This lack of clarity highlights the importance of enhanced collaboration between different disciplines and a collective effort to improve patient safety. To achieve this objective, healthcare workers must possess adequate understanding of matters related to pharmaceutical safety. Workers' perceptions of the necessity to implement safety measures in their day-to-day operations impacted by their familiarity with the hazards connected with medicine delivery. Other studies show that adherence to a prescription administration strategy is more likely to avoid errors when the drug is high-risk, unfamiliar, or mandated by law to be double-checked [14]. In order to gain a thorough understanding of the attitudes and perspectives of health care workers regarding pharmaceutical safety at Beni-Suef University Hospital, we conducted a qualitative study. Some of the problems that pointed out included a lack of effective pharmaceutical safety programs, a breakdown in communication between healthcare providers, and the underutilization of crucial technology like CPOE, despite its potential benefits.

Several qualitative studies have examined healthcare workers and patients' views on pharmaceutical safety issues. In particular, medication errors have received attention in previous work in our hospital that included twelve nurses with an average age of 33.24 ±4.67 which reported that the main barriers to medication error reporting was organizational factors. Such as, fear of judgment from management and/or administration; In addition to that, our findings indicated that the primary causes of medication errors were a lack of a drug safety program, heavy workloads, and communication gaps between healthcare workers [15]. People who took part in this research were worried that doctors, pharmacists, and nurses already have a lot on their plates, and that this would make it harder for them to follow all the regulations regarding pharmaceutical safety. According to a study conducted in Jordan, it aimed to investigate medication dispensing errors and their causes, severity, predictors, and incidence. The study included 350 pharmacies from all over Jordan and used a mixed-method approach, which included prospective disguised observation of errors and interviews with pharmacists about the causes of errors. The researchers found that as workload increased, more opportunities for errors to occur in community pharmacies [16].

The panelists proposed implementing technology solutions to decrease or eradicate medication errors. When properly implemented across all of our hospital's wards, CPOE has shown significantly reduce medication errors. The 2020 study by Salar et al. sought to find solutions to the problem of medication errors in Iranian hospital wards. Between August 10, 2019, and March 30, 2020, researchers used qualitative text analysis to glean two themes on the prevention of medication errors: "acting professional" and "presenting technical strategies." The participants in the study were 16 nurses and one physician [17]. A cornerstone of clinical practice is communication, both within and between healthcare providers and their patients [18-19]. Another study that aims to support our findings Jarrar et al. in 2023 investigates the negative events that residents and practicing physicians experience while using (burnout interpersonal disengagement and emotional exhaustion) as mediators

between the effects of work conditions and perceived patient safety. Work conditions and communication incidents among hospital staff identified as significant obstacles to practicing medication safety administrations, according to a quantitative and cross-sectional study that gathered data from 249 residents and practicing physicians in a large teaching hospital and primary health care center (PHC) in the Eastern Province of Saudi Arabia [20].

4. Conclusions

The most effective incentives for safety measures, the resources needed to fulfill the many responsibilities of health care workers and managers in ensuring the safe administration of medications, and the extent to which these responsibilities impact patient outcomes should all be the subject of future studies. One way to get a better picture of the nurse's function in drug safety is to talk to doctors and clinical pharmacists. Nurses should have the education and experience to take on leadership roles, and nurse managers should value nurses' clinical reasoning for the sake of patient safety when it comes to medicines.

Strengths and limitations

This study was able to delve into a complicated subject thanks to its qualitative design. Thanks to the thorough comprehension and iterative method, a lot of the staff's experiences and hidden thoughts have revealed. Our results are consistent with previous research, so we believe they are transferable and may have relevance or implications for different healthcare settings, even though this was a single-center study in a university hospital.

Author contributions

All authors have reviewed and given their approval for the final version of the manuscript.

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Availability of data and materials

The datasets utilized and/or analyzed in this study can obtained from the corresponding author upon reasonable request.

Ethics approval and consent to participate

The beni-suef university faculty of medicine ethics committee approved the study (fmbsurec/09012022/refaie). All participants provided informed written consent after being informed about the study's objectives. Data confidentiality ensured.

Consent for publication: Not applicable.

Competing interests

The authors declare that there are no competing interests.

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