

Improve First Year Pharmacy Students' Knowledge and Safety in Preventing Medication Errors

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Abstract: ***Background:** Medication errors are a major concern in the healthcare field. The study objectives were to evaluate first - year pharmacy students' knowledge and ability to identify and preventing medication errors. **Methods:** Conduct a prospective evaluation to determine the usefulness of an error disclosure assessment tool and video recordings in improving student knowledge and safety in the prevention of medication errors. **Results:** The use of self - assessment tools and video recordings improved student metacognitive skills for assessing performance in interprofessional error disclosure, particularly in the areas of medication errors and patient safety. **Conclusions:** It was established that pharmacy students require and value more training in communicating pharmaceutical errors. To give consistent instruction on these communication difficulties, educational interventions should be designed.*

Keywords: pharmacy students, pharmaceutical errors, improving pharmacy students' knowledge, and first - year pharmacy students

1. Introduction

Medical errors kill roughly 250, 000 individuals in the United States each year, making them the third greatest cause of mortality in the country. It has been suggested that medical error disclosure training is required to foster a culture of safety and trust among health personnel and patients. [1]

Graduates must be prepared to build and maintain a safe environment for patients in the health care setting. To do so, students must be taught how to work effectively as part of a team, communicate effectively with health care providers and patients about medication errors, evaluate medication errors, recognise the role of technology in improving medication safety, and believe that their efforts to advance medication safety are critical. The study's goals are to add information to the first - year pharmacy curriculum by providing active - learning experiences in the recognition, resolution, and prevention of prescription errors. The study's goal was to help Pharmacy students identify and eliminate pharmaceutical errors while also promoting patient safety. [2]

Students' knowledge and awareness of medication errors increased, as did their confidence in their abilities to (1) recognise and avoid errors, (2) use preventive strategies, (3) communicate about errors with relevant parties, and (4) choose and report medication errors on an appropriate form. Patient safety is a major public health concern. [3]

A medical provider's administration of medication therapy to a patient is a complex process. Errors can occur at any stage of the process, from prescribing to administering the drug to the patient. Inappropriate diagnosis, prescribing errors, dose miscalculations, poor drug distribution practices, drug and drug device related difficulties, inappropriate drug administration, failed communication, and a lack of patient education are all common causes of medication error. [4]

2. Literature Review

Procedural understanding of measures to perform for mistake management and prevention is essential for pharmacy students to communicate effectively with patients and colleagues. During internships, pharmacists and pharmacy students frequently communicate about concerns that arise, such as misinterpreting a prescriber's written or spoken prescription, giving the wrong patient a properly filled prescription, and presuming a prescription was checked when it had not been. [5] Medication errors are frequently met with concern, dread, and disappointment by patients and pharmacy professionals, depending on the severity of the problem. Medication mistakes and other bad consequences can be exacerbated by poor communication between clinicians and patients.

Inadequate or absent information about co - prescribed drugs, prior dose - response relationships, test data, and allergy sensitivities can all lead to errors. Prescription errors can occur when the wrong drug or dose is chosen, or when a regimen is overly complex. [6]

Medication errors associated with the pharmacy or the health care practitioner who dispenses the medication are referred to as dispensing errors. These include errors of commission (such as dispensing the erroneous drug, dose, or improper entry into the computer system) and omission (such as failing to counsel the patient, screening for interactions, or unclear language on a label). Potential errors should be recognised and remedied before administering medication to the patient. Dispensing a wrong prescription, dosage strength, or dosage form; miscalculating a dose; and failing to recognise drug interactions or contraindications are the three most common dispensing errors. [7]

The Accreditation Council for Pharmacy Education (ACPE) recognises the significance of educating pharmacy students on patient safety and medication error prevention.

Furthermore, The blueprint for the American Pharmacist Licensure Examination (NAPLEX) emphasises the importance of graduating students' ability to evaluate and respond to drug mistakes. Despite the foregoing standards, it

is unclear to what extent colleges and schools of pharmacy curriculum teach their students the craft of recognising pharmaceutical errors and patient safety. [8]

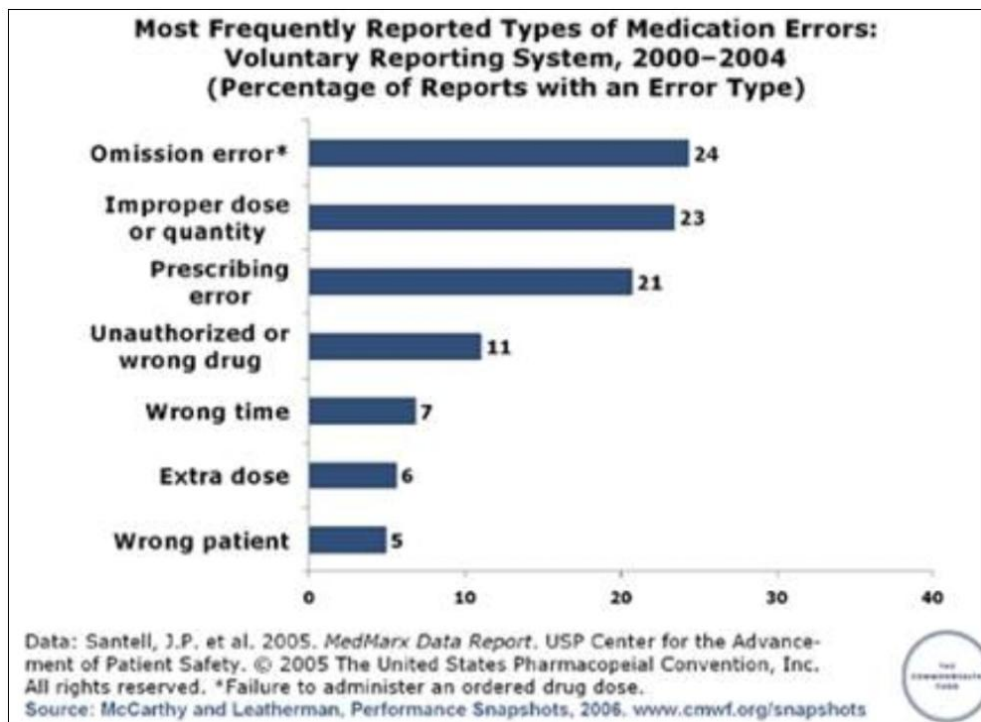


Figure 1: Most frequently types of medication errors

2.1 Pharmacy Error Prevention

Many adverse medication occurrences are avoidable, as they are frequently the result of human mistake Failure to: is a common cause of error among pharmaceuticals.

- Provide the proper dosage.
- Determine any contraindications to pharmacological therapy.
- Determine if you have a drug allergy.
- Drugs with restricted therapeutic indices should be monitored.
- Recognise medication interactions and knowledge gaps. [9]

2.2 Medication error prevention

- Improved communication between doctors, chemists and nurses (may prevent up to 85% of serious pharmaceutical errors).
- Increase the size of care teams by include a chemist on normal medical rounds (inpatient).
- Increase patient education and informed decision - making.
- Reduce the fragmentation of care. Increase chemist involvement in medication reconciliation (may reduce unnecessary errors by 88%). [10]

3. Methods

It is critical to expose pharmacy students to real - world drug errors and the terrible effects they have on patients and their family members or carers.

It is also critical to educate students on the actions that must be taken to reduce medication errors in various practise contexts. We created a novel educational project to acquaint pupils to some of the most disastrous national and international medicine mishaps. Using these flaws, we have also constructed a learning environment for students to understand biomedical and pharmaceutical science ideas. [11]

Medication error contributing factors can be classified as knowledge - based, rules - based, action - based, or memory - based. Training in medical error disclosure has been undertaken through a variety of teaching methods, interprofessional education (IPE), and by single health professions (physician - in - training programmes provide numerous examples of medical error disclosure training).

Two examples, both related to physician - in - training error disclosure, went beyond observer assessment of skills and included video - based self - assessment to improve trainees' metacognitive skills [12].

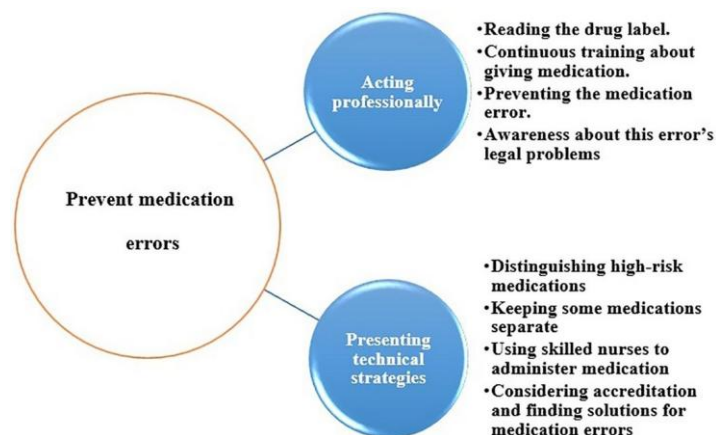


Figure 2: Two thematic categories were extracted including: “acting professional” and “presenting technical Strategies”

4. Results

The use of self - assessment tools and video recordings improved student metacognitive skills for assessing performance in inter professional error disclosure, particularly in the areas of medication errors and patient safety.

Patient safety should be a top priority in all aspects of pharmacy practise. Pharmacists should be encouraged to create and enhance procedures for safe and effective medication administration. Because prescription information generally available to patients is frequently erroneous, When providing pharmaceutical treatment that is difficult to interpret or inconsistent with cultural sensitivity standards, it is a pharmaceutics' responsibility to direct patients to reliable sources of information and safe medication use.

5. Discussion

Medication errors are one of the top ten significant adverse events of medical errors that have a detrimental impact on the quality of care, either directly or indirectly. Pharmacists serve a variety of responsibilities in the healthcare system, and pharmaceutical care necessitates the pharmacist's participation in order to prevent and solve drug - related problems. Furthermore, chemists contribute to the improvement of pharmaceutical safety, quality assurance, and care services, which can decrease or eliminate the danger of errors. [13]

Students' perceived confidence in communicating about medical errors improved after attending a session that gave applied practice in inter professional communication about these errors. Inclusion of a pharmacy student with medical mistake disclosure training in a simulated patient care team enhanced teams' proficiency in accurately revealing errors. Such training may be included in health professions curricula by educators. [14]

6. Conclusions

- Improving communication and awareness of medication errors among pharmacy students can provide companies with measurable improvements in patient safety and quality.

- It was established that pharmacy students require and value more training in communicating pharmaceutical errors. To give consistent instruction on these communication difficulties, educational interventions should be designed.
- Modules on patient safety and drug errors should be included in the pharmacy undergraduate curriculum.
- It is critical to teach students proper abilities for detecting and intervening on pharmaceutical errors in order to progress their future clinical careers.

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