IJPPR
INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals
ISSN 2349-7203
HUMAN

Human Journals
Research Article
April 2024 Vol.:30, Issue:4

A Cross-Sectional Study on Assessment of Knowledge, Attitude, and Practice of Medication Errors among Healthcare Professionals at a Tertiary Care Teaching Hospital

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Shiv Kumar*, Arshiya Begum[1]

**Professor and Head, Department of Pharmacy Practice N.E.T. Pharmacy College, Raichur- 584103, Karnataka, India*

[1]Pharm.D Intern, Department of Pharmacy Practice, N.E.T. Pharmacy College, Raichur, Karnataka, India

Submitted: 20 March 2024
Accepted: 27 March 2024
Published: 30 April 2024

Keywords: Medication errors; knowledge; attitude; practice; patients safety

ABSTRACT

Background*:* Medication error reporting is a crucial aspect of health care aimed at improving patient's safety. It involves systemic collection and analysis of data related to mistakes during care process. Health care providers can use this information to identify patterns, root causes and preventive measures to enhance overall patient care. Thus Effective medication error reporting not only mitigates immediate risk to patients but also contributes to a culture of safety within health care organisations. **Methods:** A prospective cross-sectional study was conducted with consecutive sampling, and 80 healthcare professionals were included in the study. Data was collected using Questionnaire data forms and analyzed. **Results:** The findings revealed that the sample consisted of 80 subjects, with a complete response rate. Approximately 99% had sufficient knowledge and a favorable attitude (90%) toward medication error reporting. With regard to practice of medication errors, about 52.5% participants encountered medication errors. Approximately 42.8% had not reported medication errors during their practice. **Conclusion:** Study participants demonstrated sufficient knowledge with regard to medication error and favorable attitudes towards medication error reporting, but there is still an under- reporting of medication errors when it comes to practice. We recommend the health care professionals with knowledge of medication error and positive reporting attitude for commitment to the best practices which creates an environment conducive to learning from mistakes and continually improving patients safety.

INTRODUCTION

Medication errors are an unfortunate reality at hospitals. Approximately, 30% of problems occurring during hospitalization are related to medication errors.[1] Although medication therapy is crucial in health services, it can also be hazardous and life-threatening if misapplied.[2]

Understanding the importance of medication error reporting and the sequential negative impact of under-reporting has been a key area of interest for improving patients safety in care homes tomany researchers. Medication errors are defined as any preventable event that may result in inappropriate medication usage which has the potential to harm patients.[3]

In general, a medication treatment process is undertaken in stages, by a multidisciplinary team. The process commences with a doctor's prescription, followed by the pharmacist's check-up and the medication is finally administered to the patient by medical staff. Medication errors can occur at any of these steps. Globally, medication errors have become a serious patient safety issue due to the increasing rates of morbidity and mortality associated with such errors.[3]

The system comprises an incident from describing the incident and includes detailed clinical and patient information. Effective reporting ensures a better quality of care and a safer health setting which generates better health outcomes for all patients.[3]

Reporting medication errors can be used as a tool for learning and educational purposes, which may promote safer practices in the future, thereby preventing the occurrence of similar errors in the future.[4]

Medication errors could lead to various problems which include decreased therapeutic efficacy, added workload and financial burden, litigation problems, and most importantly toxic effects on inpatients. Hence, reasons or factors relating to these errors should be ruled out to bring up a successful treatment process as well as to reduce the harm caused to the patient. [5]

A study conducted in the Netherlands reported that 60% of over 7200 medication orders contained at least one prescribing fault and that there were 103 likely preventable adverse events. However, there are only a very few studies that have been conducted in India out of which one study conducted in Delhi focused on the prescribing patterns and the errors associated with the prescription. On the other hand, a study conducted in Kerala targeted the types of errors that commonly occurred at the study site (a tertiary care hospital). [6]

Need for the study:

To fill the clinical practice gap, this study was conducted to assess the knowledge, perception, and attitude of health care professionals on medication errors.

MATERIALS AND METHODS

Study site

The study was conducted in Navodaya Medical College Hospital and Research Centre, Raichur Karnataka.

Study duration

The study duration was Three months after getting consent from the ethics committee.

Study method and size

A prospective cross-sectional study was conducted with consecutive sampling, and 80 patients were included.

Inclusion Criteria

- The study population are health care professionals (Teaching faculty, pharmacy, Nursing students and Postgraduate residents).

Exclusion Criteria

- Health care professionals who were not willing to give consent/participate in the study.

Study Design

Prospective Cross-sectional research was conducted for three months. patients of data altogether were gathered. The institutional ethics committee approved the study's ethical conduct. A Questionnaire form was designed to collect patient information.

Sampling and Selection Techniques

The sample size was calculated by the biostatistician according to the Confidence Interval 1.96 standard normal variate at 95%, the required sample size for the study was a minimum of 80 participants.

STUDY TOOL:

The instrument used in the study is a structured and validated questionnaire. The questionnaire consists of 18 questions. The first section is about the demographic data of the medical professionals; the second section is about knowledge regarding medication errors: the third section is about attitude-based questions and the fourth section is about practice-based questions on medication errors.

Analysis of data

The overall information generated was entered in a Microsoft Excel sheet (2010 version) and results were expressed in the form of percentages.

RESULTS

A total of 80 samples were collected, from healthcare Professionals who visited NMCH & RC, Raichur. The data was analyzed based on the following parameters.

Demographic Status of participants

The collected data showed that out of 80 participants, most of the respondents 59(73.8%) were aged 18 -28 years, followed by 29 -38 years 13(16. 2%), 39-48 years 7 (8.7%) and least number of participants were from the age group 49-58 years, only 1(1.3%) respectively. Females were more 42(52.5%) and males were 38(47.5%). Out of 80 participants, 35(43.8%) participants were from the Pharmacy profession, 26(32.5%) participants were from the medical profession and 18(22.5%) participants were from nursing profession as shown in Table No.1.

Table No.1: Demographic Characteristics of Healthcare Professionals (n=80)

Sl. No	Characteristics	No (%)
1	**Age group (Years)**	
	18-28	**59(73.8)**
	29-38	**13 (16.2)**
	39-48	**7(8.7)**
	49-58	**1 (1.3)**
2	**Gender**	
	Male	**38 (47.5)**
	Female	**42 (52.5)**
3	**Profession**	
	Pharmacy	**35 (43.8)**
	Medical	**26 (32.5)**
	Nursing	**18 (22.5)**

Knowledge and attitude of Medication error reporting

The knowledge and attitude of health care practitioners, regarding medication error reporting, are shown in Tables 2 & 3. The majority of study participants has reported clear knowledge of medication errors (99.9%). Almost all the participants accepted that medication errors are completely avoidable. About 35% of study participants have come across adverse drug reaction due to medication errors during their practice. More than half of participants (98.1%) acknowledged that it was their responsibility to report medication errors even if the error did not reach the patient. A strong approval (99.9%) was recorded for the statement "reporting of medication errors will enhance patients' safety. Approximately 70% of participants reported they would not hesitate before reporting a medication error and 22. 5% feared being blamed if they reported a medication error they had made.

Practice of medication error reporting.

When it comes to the practice of medication error reporting, 95% of participants knew how to report a medication error. About 52.5% encountered medication errors and 42.8% did not report any medication error during their work experience. Only 37.5% had attended workshop and seminar on continuous education on medication errors.

Table No. 2: Assessment of knowledge and attitude of Medication errors reporting among Healthcare Professionals (n=80)

Section A: Knowledge of medication error		
Sl. No	**Questions**	**Number (%)**
1	**Have you heard about medication errors?**	
	Yes	**79(98.7)**
	No	**01(1.3)**
2	**Are medication errors avoidable?**	
	Yes	**80(99.9)**
	No	**00**
3	**Have you come across any adverse drug reactions due to medication errors?**	
	Yes	**28(35)**
	No	**52(65)**

Section B: Attitude about medication errors		
1	**Medication errors do not need to be reported if detected before reaching the patient?**	
	Yes	**79(98.7)**
	No	**1(1.3)**
2	**It is not my responsibility to report a medication error if itis caused by someone else.**	
	Yes	**1(1.3)**
	No	**79 (98.7)**
3	**Do you think reporting of medication errors will enhance patient's safety?**	
	Yes	**79(98.7)**
	No	**01(1.3)**
4	**I fear being blamed if I report a medication error I made?**	
	Yes	**18(22.5)**
	No	**62(78.3)**
5	**I do not hesitate before I decide to report a medication error ?**	
	Yes	**55(70)**
	No	**25(30)**

Table no 3: practice of medication error reporting among healthcare professionals (n=80)

Section c:practice about medication errors		
	Have you encountered any medication errors during your practice?	
	Yes	**42(52.5)**
1	**No**	**38(47.5)**
2	**If yes have you reported that?**	
	Yes	**39(48.8)**
	No	**41(51.2)**
3	**Have you ever attended any workshops or continuous medical education (CME) focused on medication error safety?**	
	Yes	**50(62.5)**
	No	**30(37.5)**

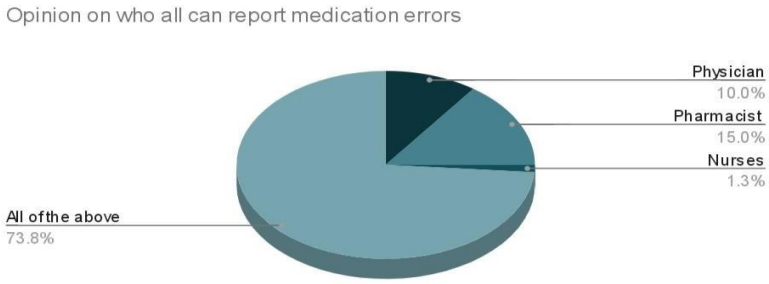
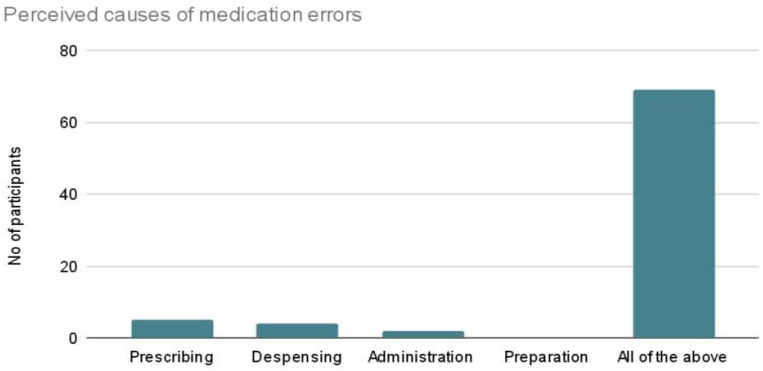


Fig no:1



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DISCUSSION

Our study assessed the knowledge, attitude, and practice of medication errors among healthcare professionals in a tertiary care hospital, based on a sample size of 80 individuals using a predesigned questionnaire form comprising 17 questions, sheds light on the crucial aspects of medication safety within healthcare settings. The demographics profile of 80 participants in this study revealed a diverse sample, with the majority being female 42 (52.5%) aged between 18-28 years 59(73.8), this observation was similar to the study conducted by ponnusankar s et al**,** and 35(43.8) belongs to pharmacy profession including faculty and students spanning various academic levels.

The findings from this study reveal that the majority of healthcare professionals in the sample had sufficient knowledge regarding medication errors with an agreement that medication errors are completely avoidable. This finding was similar to the study conducted by ponnusankar et al. As the medication treatment process is undertaken in stages, by a multidisciplinary team. Almost all the participants stated that Medication errors can occur at any step of the care process. And perceived causes could be any right from prescribing till the administration of the drug by the medical staff. 35% of the study participants encountered

adverse drug reactions due to medication error. This is a positive indication as it suggests that these professionals are well- informed about the potential risks associated with medication errors and are equipped to identify and address them effectively.

Moreover, the study highlights a positive attitude among healthcare professionals towards reporting medication errors. Participants strongly agreed that it is everyone's responsibility to report a medication error. Errors need to be reported even if it did not reach the patient. This response was similar to the study conducted by Alsulami et al. A statement was recorded stating reporting of medication errors enhances patients safety. Approximately 70% of participants reported they would not hesitate before reporting a medication error and 22.5% feared being blamed if they reported a medication error they had made. This observation is similar to the study conducted by Alsulami et al. This is a critical aspect of patient safety culture as it encourages transparency, accountability, and continuous improvement in healthcare practices. A positive reporting culture fosters a learning environment where errors are viewed as opportunities for system enhancement rather than individual blame.

When it comes to practice of medication errors, about 95% of participants knew how to report a medication error. Nearly 52.5% encountered medication error and about 48% of the study participants report medication error during their work experience. Only 37.5% had attended workshop and seminar on continuous education on medication errors. Despite the positive findings on knowledge and attitude, the study also identifies areas for improvement in the practice of medication error reporting. While healthcare professionals may possess the necessary knowledge and hold positive attitudes toward reporting errors, there may be barriers or challenges hindering their actual reporting behavior. Addressing these barriers through targeted interventions such as education, training, feedback mechanisms, and organizational support can help bridge the gap between knowledge and practice.

LIMITATIONS OF STUDY:

The study was conducted in a single hospital, the multicentered study can be conducted to compare the knowledge, attitude and practice of reporting Medication errors among different Healthcare facilities.

STRENGTH OF STUDY METHOD:

The method chosen to undertake the study gives a nearly accurate view about knowledge, attitude and practice of medication errors among healthcare professionals.

FUTURE OUTLOOK OF THE STUDY

A follow-up can be conducted to know the improvement regarding reporting practices of medication errors among the study participants.

Our study results can be useful in educating and creating awareness among Healthcare Professionals and motivating them to report Medication errors with full enthusiasm.

Frequent training programs and workshops on Medication errors at institutional level need to be organized.

CONCLUSION

In conclusion, the study's findings underscore the importance of enhancing healthcare professionals' knowledge, attitudes, and practices toward medication error reporting. While there is a strong foundation in terms of knowledge and positive attitudes towards reporting errors, there are opportunities to improve the actual practice of reporting by addressing barriers such as fear of blame, enhancing reporting mechanisms, provide support for error disclosure and providing continuous education on medication errors. By fostering a culture of open communication that prioritizes error reporting, healthcare organizations can work towards medication errors to further enhance patient safety and quality of care.

ACKNOWLEDGMENT

The authors would like to thank hospital staff members for their cooperation and support in the completion of the project.

CONFLICT OF INTEREST

The authors declare that no conflict of interest exists.

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