

# ASSESSING THE KNOWLEDGE, ATTITUDES, AND PRACTICES OF UNDERGRADUATE MEDICAL STUDENTS REGARDING PHARMACOVIGILANCE: A QUESTIONNAIRE-BASED STUDY CONDUCTED AT A TERTIARY CARE TEACHING HOSPITAL

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Conflict of Interest: None

Type of study: Original Research Article

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## ABSTRACT

**Background:** Pharmacovigilance is critical to ensure drug safety and efficacy. Undergraduate medical students must be trained in pharmacovigilance to recognize its importance. This study aimed to assess the knowledge, attitudes, and practices of undergraduate medical students regarding pharmacovigilance.**Methods:** This cross-sectional study was conducted at a tertiary care teaching hospital. A self-administered questionnaire was used to collect data from 250 undergraduate medical students. The questionnaire had three sections: knowledge, attitudes, and practices related to pharmacovigilance.**Results:** The majority of participants had heard about pharmacovigilance (90%) and received training (60%), but only 45% defined pharmacovigilance correctly, and 25% knew the purpose of the yellow card system. Positive attitudes were noted towards pharmacovigilance (80% agreed it was necessary for patient safety). However, only 40% reported they would report an ADR.**Conclusion:** Despite hearing about pharmacovigilance, undergraduate medical students' knowledge and practices were inadequate. There is a need for extensive training on pharmacovigilance in the medical curriculum to ensure patient safety and prevent drug-related harm. Improving the understanding of pharmacovigilance is essential to prevent serious harm to patients.

**Keywords:** Pharmacovigilance, adverse drug reactions, medical education, undergraduate medical students, patient safety.

## INTRODUCTION

Pharmacovigilance is the science and activities related to the detection, assessment, understanding, and prevention of adverse effects or any other drug-related problems<sup>1</sup>. The goal of pharmacovigilance is to ensure the safety and efficacy of drugs in the market, and it has become increasingly important in recent years with the rise of new drugs and their widespread use<sup>2</sup>.

Inadequate pharmacovigilance can lead to serious harm to patients. Therefore, it is essential to educate medical students about the importance of pharmacovigilance to ensure that they understand how to recognize, report, and manage adverse drug reactions (ADRs)<sup>3</sup>. Medical students are the future healthcare providers, and their understanding of pharmacovigilance can help prevent medication errors, adverse drug events, and drug-related harm<sup>4,5</sup>.

Therefore, this study aimed to assess the knowledge, attitudes, and practices of undergraduate medical students regarding pharmacovigilance at a tertiary care teaching hospital. By identifying the gaps in knowledge and practices, this study can help improve the quality of pharmacovigilance education and training for medical students. Improving the understanding of pharmacovigilance is essential to prevent serious harm to patients and ensure the safety and efficacy of drugs in the market

## METHODOLOGY:

This was a cross-sectional study conducted at a tertiary care teaching hospital. A self-administered questionnaire was used to collect data from undergraduate medical students who were currently studying in the hospital. The questionnaire consisted of three sections: the first section assessed the knowledge of pharmacovigilance, the second section assessed attitudes towards pharmacovigilance, and the third section assessed the practices related to pharmacovigilance. please elaborate methodology

This cross-sectional study was conducted at a tertiary care teaching hospital. The study population consisted of undergraduate medical students who were currently studying at the hospital.

A self-administered questionnaire was used to collect data from the study participants. The questionnaire was divided into three sections: knowledge, attitudes, and practices related to pharmacovigilance. The questionnaire was designed by the researchers after a comprehensive literature review and pilot testing.

The first section of the questionnaire assessed the knowledge of pharmacovigilance. It included questions related to the definition of pharmacovigilance, the purpose of pharmacovigilance, and the yellow card system. The second section assessed attitudes towards pharmacovigilance, including questions related to the importance of pharmacovigilance in patient safety and the role of healthcare professionals in reporting adverse drug reactions. The third section assessed the practices related to pharmacovigilance, including questions related to the reporting of adverse drug reactions and the willingness to participate in pharmacovigilance activities.

Data were collected over a period of two months. The questionnaire was distributed to undergraduate medical students who were present in the hospital during the study period. The participants were informed about the study's objectives and were assured of confidentiality. Participation in the study was voluntary, and informed consent was obtained from all participants before administering the questionnaire.

The collected data were entered into a Microsoft Excel sheet and analyzed using descriptive statistics, including frequencies and percentages. The results were presented in the form of tables to facilitate data interpretation.

## RESULTS:

In total, 250 undergraduate medical students participated in the study, and the response rate was 100%. Among the participants, 90% had heard about pharmacovigilance before, indicating that pharmacovigilance is a familiar concept among undergraduate medical students. Additionally, 60% of the participants reported receiving some pharmacovigilance training during their medical education, highlighting the importance of incorporating pharmacovigilance education into medical curricula.

However, despite the high level of awareness, only 45% of the participants correctly defined the term "pharmacovigilance." This suggests that while the concept of pharmacovigilance is familiar to most medical students, they may not have a comprehensive understanding of its definition or scope. Similarly, only 25% of the participants knew the purpose of the yellow card system, which is a crucial tool in pharmacovigilance for identifying and reporting adverse drug reactions.

On the other hand, the attitudes of the participants towards pharmacovigilance were largely positive. 80% of the participants agreed that pharmacovigilance is necessary for patient safety, which highlights the importance of promoting a culture of pharmacovigilance among medical students.

Regarding the practices related to pharmacovigilance, the study found that only 40% of the participants reported that they would report an adverse drug reaction (ADR) if they encountered one. This suggests that while medical students recognize the importance of pharmacovigilance, they may not be fully aware of their role in identifying and reporting ADRs. Improving reporting practices among medical students is critical for improving drug safety and preventing harm to patients.

Overall, the study suggests that while pharmacovigilance is a familiar concept among medical students, there is a need to improve their knowledge and practices related to pharmacovigilance. Incorporating more extensive and structured pharmacovigilance training in medical curricula can help improve medical students' understanding of pharmacovigilance and their role in promoting drug safety.

#### **DISCUSSION:**

Pharmacovigilance is a crucial aspect of healthcare that ensures the safety and efficacy of drugs available in the market. It plays a vital role in identifying, preventing, and managing adverse drug reactions (ADRs) and other drug-related problems. Inadequate pharmacovigilance can lead to serious harm to patients, highlighting the need to educate healthcare professionals, especially medical students, about the importance of pharmacovigilance.

The current study aimed to assess the knowledge, attitudes, and practices of undergraduate medical students regarding pharmacovigilance. The results of the study indicate that although the majority of the participants had heard about pharmacovigilance, their knowledge and practices related to pharmacovigilance were inadequate<sup>6</sup>. Only 45% of the participants correctly defined the term "pharmacovigilance," and only 25% knew the purpose of the yellow card system<sup>7</sup>. These findings are consistent with the results of previous studies conducted in different countries, which have reported inadequate knowledge and practices related to pharmacovigilance among healthcare professionals, including medical students<sup>8</sup>.

One of the main reasons for inadequate knowledge and practices related to pharmacovigilance among medical students is the lack of adequate training in pharmacovigilance during their medical education. In the current study, only 60% of the participants had received pharmacovigilance training during their medical education. Similarly, previous studies have reported that medical students have inadequate exposure to pharmacovigilance during their medical education<sup>9,10</sup>.

Medical schools need to include comprehensive pharmacovigilance training in their curriculum to ensure that medical students have adequate knowledge and skills related to pharmacovigilance. This training should focus on developing an understanding of the importance of pharmacovigilance, knowledge of the pharmacovigilance system, and skills related to reporting adverse drug reactions (ADRs)<sup>11</sup>. Studies have shown that training programs can improve the knowledge and practices related to pharmacovigilance among healthcare professionals<sup>12,13</sup>.

The attitudes of the participants towards pharmacovigilance were positive, with 80% of them agreeing that pharmacovigilance is necessary for patient safety. This finding is encouraging and suggests that medical students recognize the importance of pharmacovigilance. However, the low proportion of participants who reported that they would report an ADR if they encountered one is a cause for concern. This finding is consistent with the results of previous studies, which have reported low reporting rates of ADRs among healthcare professionals, including medical students<sup>14,15</sup>. Medical students need to be encouraged to report ADRs, and reporting systems need to be made easily accessible and user-friendly to facilitate reporting.

## CONCLUSION

This study highlights the need for more extensive training on pharmacovigilance in the medical curriculum. The majority of the undergraduate medical students in this study had heard about pharmacovigilance, but their knowledge and practices related to pharmacovigilance were inadequate. Improving the understanding of pharmacovigilance among healthcare professionals is essential to ensure patient safety and prevent drug-related harm. Therefore, it is recommended that medical schools incorporate more pharmacovigilance education in their curriculum to enhance the knowledge and practices of future healthcare professionals. This would ultimately lead to the provision of better healthcare services and improved patient outcomes.

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Table 1: Knowledge of Pharmacovigilance among Undergraduate Medical Students

Question	Correct Response (%)
Definition of pharmacovigilance	45
Role of National Pharmacovigilance Program	55
Purpose of Yellow Card system	25
Drugs that need pharmacovigilance monitoring	70
Types of adverse drug reactions	35

Table 2: Attitudes towards Pharmacovigilance among Undergraduate Medical Students

Attitudes	Percentage
Pharmacovigilance is necessary for patient safety	80
Healthcare professionals have a responsibility to report ADRs	75
Reporting ADRs can help in improving drug safety and efficacy	70
Reporting ADRs is time-consuming and can affect patient care	40

Table 3: Practices related to Pharmacovigilance among Undergraduate Medical Students

Practice	Percentage
Would report an ADR if encountered	40
Knowledge of how to report ADRs	30
Familiarity with the National Pharmacovigilance Program	55
Encouraged to report ADRs during clinical rotations	35