EJPMR, 2026, 13(7), 330-335 **Review Article** **Impact Factor: 8.158**

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

ISSN (O): 2394-3211
ISSN (P): 3051-2573
Coden USA: EJPMAG

KNOWLEDGE AND PERCEPTION OF GENERIC MEDICINES AMONG PHARMACY STUDENTS: A CROSS-SECTIONAL SURVEY

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DOI: https://doi.org/10.5281/zenodo.21068281

How to cite this Article: Rajiv Yadav[1]*, Jatin[2], Khem Chand[3], Kavita Yadav[4], Vikram Kumar[1]. (2026). Knowledge and Perception of Generic Medicines Among Pharmacy Students: A Cross-Sectional Survey. European Journal of Pharmaceutical and Medical Research, 13(7), 330–335.

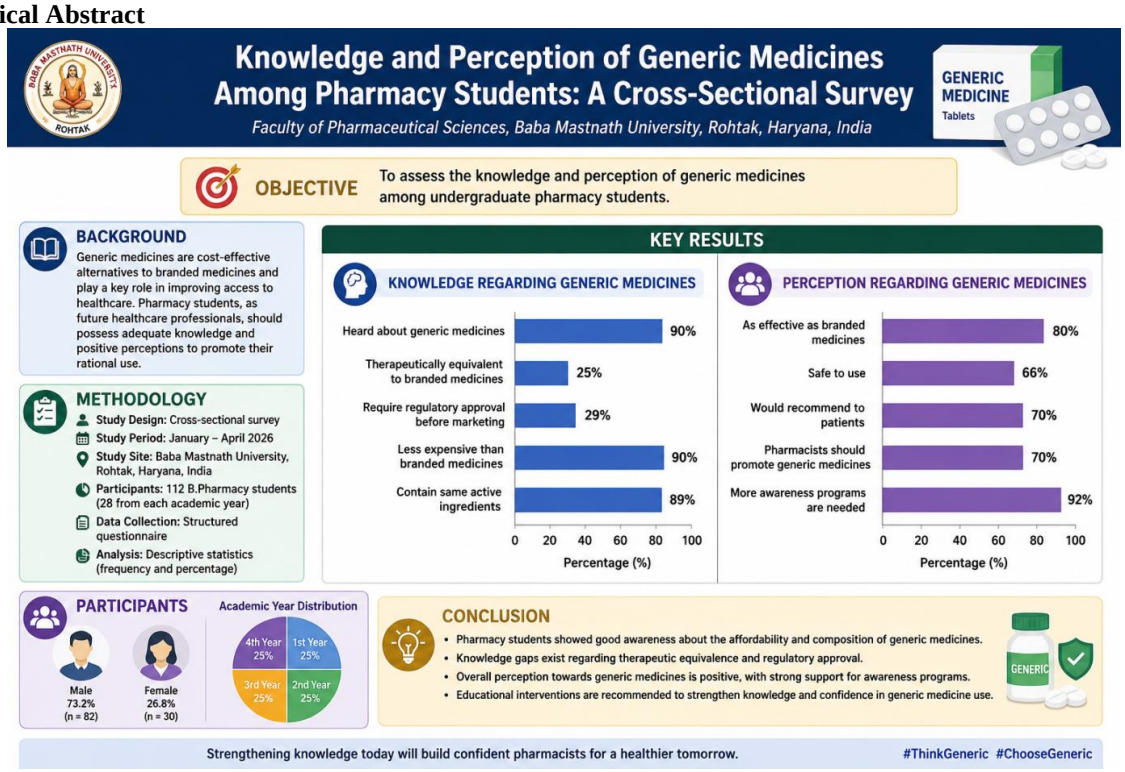
Article Received on 05/06/2026 **Article Revised on 25/06/2026** **Article Published on 01/07/2026**

ABSTRACT

Background: Generic medicines are cost-effective alternatives to branded medicines and play a crucial role in improving access to healthcare. Adequate knowledge and positive perceptions among future pharmacists are essential for promoting generic medicine utilization. **Objective:** To assess the knowledge and perception of generic medicines among undergraduate pharmacy students at the Faculty of Pharmaceutical Sciences, Baba Mastnath University, Rohtak, Haryana, India. **Materials and Methods:** A cross-sectional questionnaire-based survey was conducted among 112 B.Pharmacy students from January to April 2026. Students from all four professional years participated, with approximately equal representation from each academic year. Data were collected using a structured questionnaire consisting of demographic, knowledge, and perception-related items. The responses were analyzed using descriptive statistics and presented as frequencies and percentages. **Results:** Among the participants, 90% had heard about generic medicines. Only 25% correctly believed that generic medicines are therapeutically equivalent to branded medicines, whereas 55% disagreed and 20% were unsure. Awareness regarding regulatory approval was limited, with only 29% responding correctly. Most students recognized that generic medicines are less expensive than branded medicines (90%) and contain the same active ingredients (89%). Regarding perception, 80% believed generic medicines are as effective as branded medicines, 66% considered them safe, 70% would recommend them to patients, and 70% supported their promotion by pharmacists. Additionally, 92% favored conducting awareness programs regarding generic medicines. **Conclusion:** Pharmacy students demonstrated satisfactory awareness regarding the affordability and composition of generic medicines but showed deficiencies in understanding therapeutic equivalence and regulatory approval requirements. Educational interventions are needed to improve knowledge and strengthen confidence in generic medicine utilization.

KEYWORDS: Generic medicines, Pharmacy students, Knowledge, Perception, Generic substitution, Rational drug use, Cross-sectional survey.

Graphical Abstract



INTRODUCTION

Healthcare expenditure continues to increase worldwide, creating a significant burden on patients and healthcare systems. One effective strategy to reduce treatment costs while maintaining therapeutic outcomes is the use of generic medicines. Generic medicines contain the same active pharmaceutical ingredients as branded medicines and are expected to demonstrate comparable quality, safety, efficacy, dosage form, strength, and route of administration.[1]

The use of generic medicines has gained considerable importance in both developed and developing countries because of their potential to improve accessibility and affordability of healthcare services. In India, initiatives such as generic drug promotion programs have encouraged healthcare professionals and patients to adopt generic alternatives. Despite these efforts, misconceptions regarding the effectiveness, safety, and quality of generic medicines remain prevalent.[2-6]

Pharmacists play a crucial role in promoting the rational use of medicines and educating patients regarding generic substitution. Therefore, pharmacy students, as future pharmacists, should possess adequate knowledge and positive attitudes toward generic medicines. Their perceptions may significantly influence future dispensing practices and patient counseling activities.[7]

Several studies conducted globally have reported varying levels of knowledge and acceptance of generic medicines among healthcare students and professionals. Understanding the current level of awareness among pharmacy students can help identify educational gaps and facilitate the development of targeted interventions.[8]

The present study was undertaken to evaluate the knowledge and perception of generic medicines among B.Pharmacy students enrolled at the Faculty of Pharmaceutical Sciences, Baba Mastnath University, Rohtak, Haryana.

MATERIALS AND METHODS

Study Design

A cross-sectional questionnaire-based survey was conducted.

Study Site

Faculty of Pharmaceutical Sciences, Baba Mastnath University, Rohtak, Haryana, India.

Study Duration

January 2026 to April 2026.

Study Population

Undergraduate B.Pharmacy students from first, second, third, and fourth professional years.

Sample Size

A total of 112 students participated in the study.

Inclusion Criteria

- B.Pharmacy students willing to participate.
- Students providing informed consent.

Exclusion Criteria

- Students unwilling to participate.

- Incomplete questionnaire responses.

Data Collection

A structured questionnaire was developed to assess demographic characteristics, knowledge, and perceptions regarding generic medicines. The questionnaire included five knowledge-related and five perception-related questions.[9]

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using descriptive statistics. Results were expressed as frequencies and percentages.

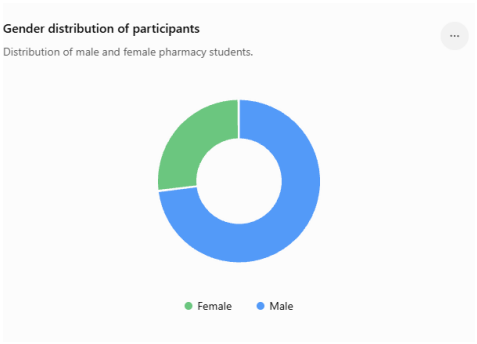
RESULTS

Demographic Characteristics

A total of 112 students participated in the survey. Male students constituted 73.2% (n=82), while female students represented 26.8% (n=30). Approximately 25% of the participants belonged to each academic year.

Table 1: Demographic Characteristics of Participants.

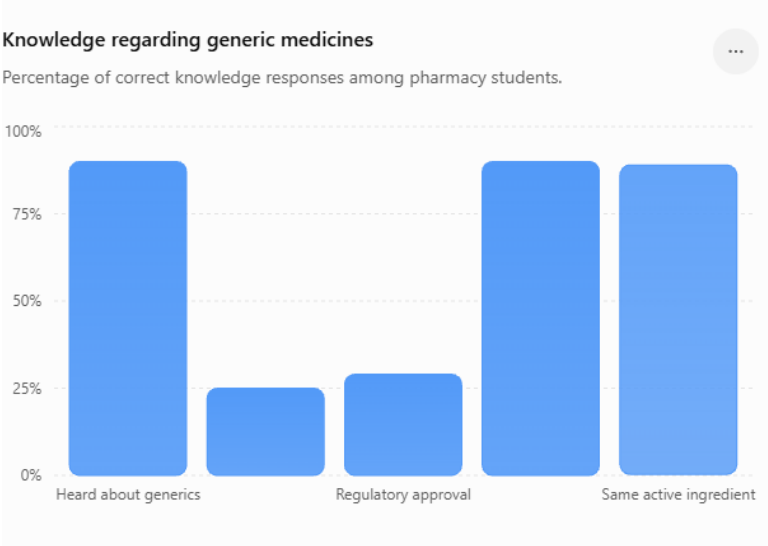
Variable	Frequency	Percentage (%)
Male	82	73.2
Female	30	26.8
First Year	28	25.0
Second Year	28	25.0
Third Year	28	25.0
Fourth Year	28	25.0



Knowledge Regarding Generic Medicines

Table 2: Knowledge of Generic Medicines Among Pharmacy Students.

Question	Yes (%)	No (%)	Not Sure (%)
Heard about generic medicines	90	10	-
Therapeutically equivalent to branded medicines	25	55	20
Require regulatory approval before marketing	29	41	30
Less expensive than branded medicines	90	10	-
Contain same active ingredients	89	11	-

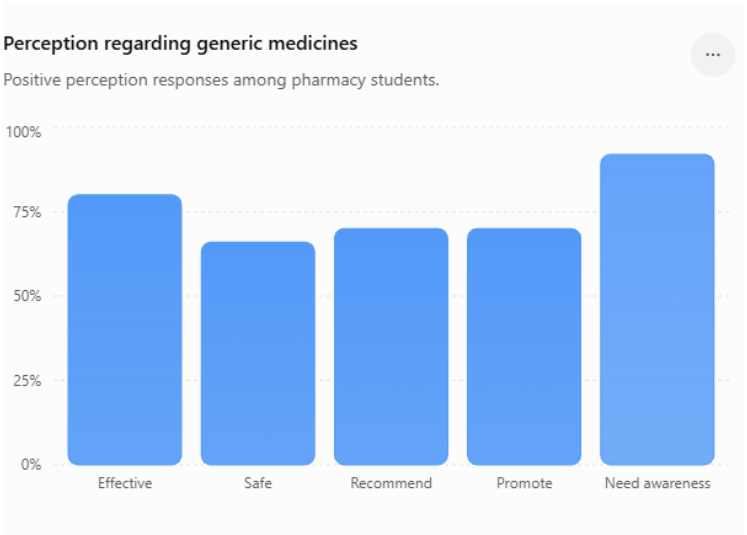


Most respondents were aware of generic medicines. However, knowledge regarding therapeutic equivalence and regulatory approval was comparatively poor. Awareness regarding affordability and active ingredient similarity was high.

Perception Regarding Generic Medicines

Table 3: Perception of Generic Medicines Among Pharmacy Students.

Statement	Positive (%)	Negative (%)	Neutral (%)
As effective as branded medicines	80	11	9
Safe to use	66	34	-
Would recommend to patients	70	30	-
Pharmacists should promote generic medicines	70	30	-
More awareness programs are needed	92	8	-



The majority of students expressed favorable perceptions regarding generic medicines. Most participants believed that generic medicines are effective and supported their promotion in healthcare practice.

DISCUSSION

The present study evaluated the knowledge and perception of generic medicines among pharmacy students. The findings demonstrated that awareness of generic medicines was generally high, with most students reporting familiarity with the concept.[10-15]

A substantial proportion of respondents recognized that generic medicines are less expensive than branded medicines and contain the same active ingredients. These findings suggest that students understand the basic economic and compositional aspects of generic medicines.

However, notable gaps were observed regarding therapeutic equivalence and regulatory approval requirements. Only a limited proportion of students correctly identified that generic medicines are therapeutically equivalent to branded medicines. Similar observations have been reported in previous studies, where misconceptions regarding efficacy and quality remained barriers to generic medicine acceptance.[16]

The perception-related findings were encouraging. A majority of respondents believed that generic medicines are effective and safe. Most students indicated their willingness to recommend generic medicines to patients and supported pharmacist involvement in promoting their use. These positive perceptions are important because pharmacists frequently serve as accessible healthcare professionals responsible for medication counseling.

The finding that more than 90% of respondents favored awareness programs highlights the need for additional educational interventions. Incorporating comprehensive instruction regarding bioequivalence, regulatory approval processes, and generic substitution practices into pharmacy curricula may further enhance student understanding.[17-21]

Overall, the results indicate that while pharmacy students possess favorable attitudes toward generic medicines, targeted educational efforts are necessary to address existing knowledge deficiencies.[22-26]

CONCLUSION

The present study demonstrated that pharmacy students possess satisfactory awareness regarding the affordability and composition of generic medicines. However, deficiencies remain in their understanding of therapeutic equivalence and regulatory approval requirements. Students generally exhibited positive perceptions regarding the effectiveness, safety, and promotion of generic medicines.

Educational programs, workshops, and curricular enhancements focusing on generic drug regulation and bioequivalence may improve knowledge and confidence among future pharmacists. Strengthening awareness at the undergraduate level may contribute to increased acceptance and utilization of generic medicines in clinical practice.

ACKNOWLEDGEMENTS

The authors express their gratitude to the Faculty of Pharmaceutical Sciences, Baba Mastnath University, Rohtak, Haryana, for providing support and facilities for conducting this study. The authors also thank all participating students for their valuable cooperation.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this study.

Funding

The authors received no external funding for this study.

Author Contributions

All authors contributed to study conception, questionnaire development, data collection, analysis, manuscript preparation, and final approval of the manuscript.

Ethical Statement

Participation in the study was voluntary. Confidentiality and anonymity of participants were maintained throughout the study. Informed consent was obtained from all participants before questionnaire administration.

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