



OVER-THE-COUNTER DRUG USE: KNOWLEDGE, ATTITUDE AND PRACTICE AMONG PHARMACY STUDENTS IN A FACILITY-BASED CROSS-SECTIONAL STUDY

*S. Prakasham, Dr. R. Manivannan, I. Asmiya Begam, K. Dhurgasri, A. Kiruthika, B. Madhankumar

Department of Pharmacy Practice, Excel College of Pharmacy, Komarapalayam Nammakal Dt. Tamil Nadu, India.

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*Corresponding Author: S. Prakasham

Department of Pharmacy Practice, Excel College of Pharmacy, Komarapalayam Nammakal Dt. Tamil Nadu, India.

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ABSTRACT

Background: Over-the-counter (OTC) medicines are widely used for minor ailments and can support self-care when used appropriately. However, inappropriate self-medication may result in adverse effects, drug interactions, overdose and delayed professional assessment. This study assessed the knowledge, attitude and practice (KAP) regarding OTC medicine use among pharmacy students. **Objective:** To assess the knowledge, attitude, and practice (KAP) regarding the safe, rational, and responsible use of over-the-counter (OTC) medicines among pharmacy students through a facility-based cross-sectional study, and to identify gaps that may influence appropriate self-medication practices. **Methods:** A facility-based descriptive cross-sectional KAP study was conducted among pharmacy students using a structured, self-administered questionnaire distributed through Google Forms. The study population comprised 500 students from B.Pharm, Pharm.D and D.Pharm programmes, and 200 eligible respondents were included in the final analysis. Knowledge, attitude and practice were assessed using predefined scoring systems, and data were summarized using frequency, percentage, mean and standard deviation. **Results:** The mean knowledge score was 2.27 ± 1.04 out of 5, indicating poor knowledge; 56.0% of respondents had poor knowledge and 11.5% had good knowledge. The mean attitude score was 3.10 ± 0.53 , indicating a neutral attitude. The mean practice score was 3.33 ± 0.54 , also indicating a neutral level of practice. Self-medication was reported by 71.9% of respondents, while only 30.5% reported always reading medicine-label instructions. **Conclusion:** The study identified important gaps in OTC medicine knowledge and neutral attitudes and practices among pharmacy students. Targeted education on dosage, adverse effects, interactions, contraindications, label reading, storage, expiry dates and appropriate referral may promote safer and more rational OTC medicine use.

KEYWORDS: over-the-counter medicines; self-medication; pharmacy students; knowledge; attitude; practice.

INTRODUCTION

Over-the-counter (OTC) medicines are therapeutic products that may be obtained directly by consumers without a prescription and are commonly used for minor, self-limiting conditions. Common OTC products include analgesics and antipyretics, cough and cold preparations, antihistamines, antacids and topical preparations.^[1-2] Responsible self-medication can support self-care when the medicine, dose and duration are appropriate and when the individual recognizes situations requiring professional advice.^[3] Nevertheless, OTC availability does not mean that medicines are free from risk. Incorrect use may cause adverse effects, drug interactions, overdose, contraindications-related harm and delayed diagnosis.^[4] Self-medication is common among university students internationally and in India, with minor illness, familiarity with medicines, convenience, time limitations and financial considerations frequently reported as reasons.^[5-7]

Pharmacy students are an important population because their academic exposure to medicines may improve medication literacy while also increasing confidence in self-diagnosis and self-treatment. Evidence indicates that good theoretical knowledge may coexist with unsafe self-medication practices.^[8-11] Therefore, assessment of knowledge, attitudes and practices together can identify gaps that may not be apparent from prevalence alone.

The study assessed KAP regarding OTC medicine use among pharmacy students in a facility-based cross-sectional setting, with particular attention to safe and rational use, attitudes toward self-medication and actual medicine-use practices.

AIM AND OBJECTIVES

Aim

- To assess the Knowledge, Attitude, and Practice (KAP) regarding the use of OTC medicines among pharmacy students through a facility-based cross-sectional study.
- To assess the knowledge of pharmacy students regarding the safe and rational use of OTC medicines.
- To evaluate the attitudes of pharmacy students toward self-medication and OTC drug use.
- To assess the practice patterns of OTC medicine use among pharmacy students.
- To identify gaps in knowledge, attitude and practice that may affect the safe use of OTC medicines.

RESULTS AND DISCUSSION

Results

Table 1: Demographic Characteristics of The Study Population.

Variable	Frequency (n)	Percentage (%)
Male	125	62.5
Female	75	37.5
Rural	120	60.0
Urban	80	40.0
Total	200	100.0

- To provide recommendations for improving awareness and promoting the rational use of OTC medicines among pharmacy students.

MATERIALS AND METHODS

Study design and setting: A facility-based descriptive cross-sectional KAP study was conducted among pharmacy students at the institution. Data were collected using a structured, self-administered questionnaire distributed through Google Forms, allowing anonymous participation. The study was conducted over a three-month period covering questionnaire preparation, ethical approval, data collection, analysis and report preparation. **Study population and sample:** The study population consisted of 500 students enrolled in B.Pharm, Pharm.D and D.Pharm programmes. A total of 200 eligible respondents who voluntarily completed the questionnaire were included in the final analysis. Convenience sampling was used.

Eligibility: Students enrolled in B.Pharm, Pharm.D or D.Pharm who consented and completed all questionnaire sections were included. Students who declined participation, submitted incomplete questionnaires or provided duplicate responses were excluded.

Study instrument: The structured questionnaire contained 30 items in four sections: demographic information (gender, hometown, course and year of study), 10 knowledge items, 10 attitude items and 10 practice items.

Data collection and analysis: Responses were collected electronically and exported into Microsoft Excel. Frequency, percentage, mean and standard deviation were used for analysis. Knowledge items were scored as correct = 1 and incorrect/uncertain = 0. Attitude items used a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree), with reverse scoring for negatively worded statements. The predefined mean interpretation was 1.00–1.80 strongly disagree, 1.81–2.60 disagree, 2.61–3.40 neutral, 3.41–4.20 agree and 4.21–5.00 strongly agree.

Ethics: Participation was voluntary, informed consent was obtained, confidentiality and anonymity were maintained, and no personal identifiers were included in analysis or reporting.

Among the 200 respondents, 125 (62.5%) were male and 75 (37.5%) were female. A total of 120 (60.0%)

respondents were from rural areas and 80 (40.0%) were from urban areas.

Table 2: Distribution of Respondents By Course.

Course	Respondents (n)	Percentage (%)
B.Pharm	125	62.5
Pharm.D	45	22.5
D.Pharm	30	15.0
Total	200	100.0

B.Pharm students constituted the largest group (62.5%), followed by Pharm.D students (22.5%) and D.Pharm students (15.0%).

Table 3: Overall Kap Scores Among Respondents.

KAP component	Mean $\pm$ SD	Interpretation
Knowledge	2.27 $\pm$ 1.04	Poor
Attitude	3.10 $\pm$ 0.53	Neutral
Practice	3.33 $\pm$ 0.54	Neutral

Table 4: Distribution of Respondents According To Knowledge Level.

Knowledge level	Score	Frequency (n)	Percentage (%)
Poor	0–2	112	56.0
Neutral	2.5–3.5	65	32.5
Good	4–5	23	11.5
Total		200	100.0

The mean knowledge score was 2.27 $\pm$ 1.04 out of 5 (45.35%), indicating an overall poor level of knowledge. More than half of respondents (56.0%) had poor knowledge, while 32.5% had neutral knowledge and 11.5% had good knowledge. The highest proportions of correct responses concerned awareness that OTC

medicines can cause side effects (62.2%), that painkillers are examples of OTC medicines (57.7%), and that OTC medicines may be used for common diseases (55.7%). Lower performance was observed for appropriate action following suspected adverse effects (24.4%) and situations requiring greater caution (29.4%).

Table 5: Distribution of Respondents According To Attitude Level.

Attitude category	Score	Frequency (n)	Percentage (%)
Strongly disagree	1	1	0.5
Disagree	2	41	20.5
Neutral	3	105	52.5
Agree	4	49	24.5
Strongly agree	5	4	2.0
Total		200	100.0

The overall attitude score was 3.10 $\pm$ 0.53, indicating a neutral attitude. More than half of respondents (52.5%) were in the neutral category, 24.5% were agreeable and 2.0% were strongly agreeable. The neutral attitude may

reflect uncertainty regarding self-medication safety, medicine sharing, interactions, storage conditions and the need for professional advice.

Table 6: Distribution According To Overall Practice Score.

Practice category	Score	Frequency (n)	Percentage (%)
Strongly disagree	1	0	0.0
Disagree	2	19	9.6
Neutral	3	96	48.5
Agree	4	78	39.4
Strongly agree	5	2.5	2.5
Total		198	100.0

Practice scores were available for 198 respondents. The overall mean practice score was 3.33 $\pm$ 0.54, indicating a neutral level of practice. Self-medication with OTC medicines was reported by 71.9% of respondents. A total

of 42.6% reported using OTC medicines when symptoms were minor and manageable; 57.6% would immediately discard a medicine if its shape, colour or odour changed; 58.7% stored OTC medicines in a medicine box; and

41.1% reported experiencing adverse effects. Only 30.5% reported always reading instructions on the medicine label, 44.4% would go to a health facility if an OTC medicine did not work, and 50.5% reported using OTC medicines without a prescription.

DISCUSSION

The present study demonstrated an overall poor level of OTC medicine knowledge, accompanied by neutral attitudes and neutral practices. The knowledge deficit was particularly evident in adverse-effect management, drug interactions and circumstances requiring caution. These findings are important because inappropriate self-medication can result in adverse drug reactions, interactions, delayed diagnosis and inappropriate treatment. The results are consistent with the broader evidence summarized in the dissertation, which shows that pharmacy and healthcare students may have substantial exposure to medicines while still demonstrating unsafe or inconsistent self-medication behaviors.^[8-11] The neutral attitude score suggests that respondents may recognize both the convenience and potential risks of OTC medicines but remain uncertain about issues such as medicine sharing, professional consultation, interactions and safe storage. The practice findings further demonstrate a knowledge-behavior gap: some respondents reported appropriate behaviors such as discarding visibly altered medicines and seeking healthcare when treatment was ineffective, while self-medication, incomplete label reading and non-prescription use remained common. These findings support the need for targeted educational interventions focused on dosage, adverse effects, interactions, contraindications, storage, expiry dates, label interpretation and referral. Pharmacists have an important role in supporting responsible self-medication through symptom assessment, product selection, counseling, identification of interactions and referral when self-care is inappropriate.^[1,2]

CONCLUSION

The study found poor knowledge, neutral attitude and neutral practice regarding OTC medicine use among pharmacy students. The mean knowledge score was 2.27 ± 1.04 , with 56.0% of respondents classified as having poor knowledge. The mean attitude and practice scores were 3.10 ± 0.53 and 3.33 ± 0.54 , respectively. Although several appropriate practices were reported, self-medication and inadequate label reading were common. The findings indicate a need for targeted educational programmes covering responsible self-medication, dosage, adverse drug reactions, drug interactions, contraindications, storage, expiry dates, label reading and timely consultation with pharmacists or other healthcare professionals.

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