

Assessment of Knowledge, Attitude, and Practice of Community Pharmacists Regarding Over the Counter Drug Dispensing in Gandhidham and Adipur, Gujarat: A Cross-Sectional Study

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Abstract: ***Background:** People get OTC drugs directly from the pharmacists for their basic illness. Pharmacists, being the last line of direct contact with the patients, are responsible for educating the patients regarding the effects of OTC drugs. This study focuses on assessing the knowledge, attitude and practice among community pharmacists regarding OTC drugs in Gandhidham and Adipur region of Kutch. This study employs a qualitative survey utilizing in-depth interviews and data collection from community pharmacists working in hospital and medical stores in Adipur and Gandhidham. The primary focus is to assess the knowledge, attitudes, and practices of community pharmacists regarding OTC Drugs. **Materials and Methods:** A cross-sectional study was done. In our study, 173 responses were collected during the survey, which was executed for a period of 6 months. All responses obtained were analyzed and assessed using SPSS software and Microsoft Excel. **Results:** Community pharmacists had an overall knowledge percentage of 55.35%, their attitude towards dispensing of prescription and OTC Drugs were found to be better (75.97%). Community pharmacists had a good overall practice regarding OTC Drugs. **Conclusion:** Knowledge percentage regarding the community pharmacists were found to be good which in turn affect their attitude and practice of dispensing prescription drugs. Pharmacists were involved in counselling the patients regarding the OTC medication.*

Keywords: Knowledge, Attitude, Practice, Pharmacists, Non-prescription, Drugs.

1. Introduction

Over-the-Counter (OTC) drugs, or OTC medications, are available for direct purchase by consumers without requiring a prescription. In contrast, prescription medicines necessitate a valid prescription from a Registered Medical Practitioner (RMP) and must be dispensed under the supervision of a registered pharmacist.

According to the World Health Organization (WHO), self-medication refers to the selection and use of medications by individuals to address self-recognized health issues or symptoms. In India, drugs listed under Schedule H and Schedule H1 must be dispensed only with a written prescription from an RMP. This prescription must include the RMP's signature, date, the patient's name and address, and details of the medication's total quantity and dosage. While India does not officially categorize OTC drugs, medications that are not included in Schedules H, G, or X are generally considered non-prescription.

Global research suggests a rising trend in self-medication and an expanding scope of its use. Given that pharmacists often serve as the final point of contact between patients and medications, they play a crucial role in influencing patient behavior concerning OTC medication. The International Pharmaceutical Federation (FIP) has published guidelines on Good Pharmacy Practice (GPP), which are also endorsed by WHO. Similarly, the Indian Pharmaceutical Association (IPA) has developed its own GPP guidelines, emphasizing the need for pharmacists to be well-informed in order to effectively dispense OTC drugs.

Considering these factors and the growing concern regarding the use of OTC Drugs, this study aims to evaluate the knowledge, attitudes, and practices of community pharmacists in Adipur and Gandhidham.

2. Method

This qualitative study was conducted in the Gandhidham and Adipur areas of the Kutch region to assess the knowledge, attitude, and practice of community pharmacists regarding OTC Drugs. The study was carried out over a six-month period from January 2025 to June 2025. A purposive sampling technique was used to select participants, ensuring the inclusion of 314 registered community pharmacists engaged in dispensing OTC Drugs. The sample size was determined based on qualitative research considerations, focusing on data saturation rather than statistical calculations. Each response was collected individually to maintain the integrity of the data and avoid duplication.

The sample size of 173 was determined using Rao software, with the formula $n = Z^2 \cdot p \cdot (1-p) / d^2$ considering a total population of 314 community pharmacists, a sample of 173 gives a 95% confidence level with 5% margin of error. Each response was collected from individual participants, ensuring that no multiple responses were provided by the same individual.

1) Inclusion and Exclusion criteria

All registered community pharmacists between the age of 21 and 50 (except vulnerable population) were considered eligible to participate in our study, provided they are willing to participate. All community pharmacists are required to hold at least one pharmacy degree (either D Pharm, B. Pharm

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or Pharm D). Any forms that were collected incomplete will be excluded from the study.

2) Data Collection

Data was collected using a self-administered questionnaire form. The questionnaire was created to ensure the comprehensive inclusion of all required demographics. The questionnaire contained 20 questions grouped into 3 categories namely knowledge, attitude and practice-related questions. The questions were designed in such a way that in challenges the community pharmacists, knowledge, attitude and practice and OTC medicines.

3. Statistical Analysis

The data was analyzed using Microsoft Excel. Categorical data was presented as frequency and percentage using excel formula. Compilation of data was done. Data were classified as Microsoft Excel. Data analysis was by using excel sheet.

4. Results

Out of 173 samples, 60 samples from Adipur and remaining from Gandhidham (to comply with sample size) were considered.

Table 1: Distribution of Responses according to Socio-Demographic Characteristics

S No	Socio Demographics	Variables	Frequency	Percentage
1	Age	21-30	25	14.6
		31-40	41	23.5
		41-50	70	40.2
		51-60	30	17.2
		61-70	6	3.7
2	Gender	71-80	1	0.8
		MALE	143	82.7
3	Education Qualification	FEMALE	30	17.3
		B PHAM	39	22.5
		D PHAM	133	76.9
4	Location	M PHAM	1	0.005
		ADIPUR	60	34.7
		GANDHIDHAM	113	65.3

Table 1 presents the distribution of study participants based on age, gender, educational qualification, and location.

All 173 responses were classified based on their socio-demographic characteristics. Majority of our participants (40.2%) belonged within the age group of 41 and 50, while the least number of participants (0.8%) were found between 71 and 80. 82.7 % of our participants were male while 17.3% were found to be female participants and majority of our participants (76.9%) held Diploma degree in pharmacy while only few (0.005%) held master degree.

Table 2: Responses to knowledge related questions

Table 2: Presents knowledge related responses from respondents.

S. No	Questions	Correct Response (%)
1	What is OTC? Is the name OTC legally registered in INDIA? (ANS: Over the counter medicines. No, the name OTC is not legally registered in INDIA)	40.5
2	Drugs, which cannot be sold without a prescription falls under which schedule of drugs as per Drugs and Cosmetics Act, 1945?	69.4
3	Name any 2 drugs that are commonly dispensed at your pharmacy without a prescription.	75.7
4	Is prescription required to dispense AZITHROMYCIN?	84.9
5	Choose the correct drug that can be dispensed without a prescription?	40.5
6	Can you dispense diclofenac ointment without a prescription?	79.7
7	Can you list three class of drugs that commonly dispensed without prescription?	30

The knowledge-related outcomes resulted in a mean score of 55.81%, indicating that theoretically, 97 participants provided correct answers to the knowledge-based questions. However, only 40.5% of participants correctly identified whether the term "over the counter (OTC)" has legal recognition in India.

Approximately 69.4% of participants correctly stated that Schedule H and H1 drugs should only be dispensed with a prescription. When questioned about class of drugs that commonly dispensed without prescription, only 30% of participants responded correctly, as shown in Table 2.

Table 3: Responses to Attitude related questions

S. No	Questions	Correct Response (%)
1	What it your opinion about patients receiving all the drugs without prescription?	75.1
2	What is your concern about children receiving drugs without prescription?	76.9
3	How do you deal with patient asking for a particular drug without a prescription?	79.2

Table 4: Responses to Practise related questions

S. No	Questions	Correct Response (%)
1	How often do you dispense OTC Drugs daily?	76.3
2	What do you do when a particular brand of drug is not available?	80.3
3	Is it correct to suggest a different antibiotic if the required one is not available?	67.6
4	Is it OK to dispense narcotic drugs without a prescription?	85.5
5	Do you suggest Corticosteroids when there is a lack of other NSAIDs like Ibuprofen and PARACETAMOL?	61.8
6	What do you counsel a patient when dispensing an anticholesterolemic / antihyperlipidemic drug?	40.5
7	Do you ask patients about their symptoms before dispensing OTC Drugs?	49.1
8	Do you provide counselling on proper usage and side effects of OTC Drugs?	39.9
9	Have you encountered cases of adverse reactions due to self-medication?	35.8

Attitude and practice related outcomes of Tables 3 & 4 showed mean scores of 77.06% and 59.64% indicating better performance in these areas compared to knowledge-based questions.

Table 5: Association between Socio-Demographic variables and Selected Knowledge, Attitude, and Practice Questions (Chi-square Test)

Domain	Question No.	Variable Compared	Statistical Test	Significance (p value)
Knowledge	K1	Definition of OTC and legal recognition in India	Years of Experience	0.041
Knowledge	K1	Definition of OTC and legal recognition in India	Educational Qualification	0.112
Knowledge	K2	Knowledge of Schedule H/H1 drugs	Education Qualification	0.087
Knowledge	K7	Ability to list classes of OTC drugs	Years of Experience	0.064
Practice	P2	Action when a particular brand is unavailable	Educational Qualification	0.036
Practice	P3	Suggesting alternative antibiotic when unavailable	Educational Qualification	0.018
Practice	P4	Dispensing narcotic drugs without prescription	Age Group	0.221
Practice	P8	Counseling on OTC usage and side effects	Experience	0.094
Attitude	A1	Opinion on dispensing all drugs without prescription	Education	0.133
Attitude	A3	Dealing with patient requesting drug without prescription	Experience	0.079

Although the overall Knowledge, Attitude, and Practice (KAP) scores did not show statistically significant association with socio-demographic variables ($p > 0.05$), question-level analysis revealed significant associations for specific items.

Knowledge regarding the definition of OTC drugs and their legal recognition in India showed a statistically significant association with years of professional experience ($p = 0.041$), indicating that pharmacists with lesser experience had difficulty identifying the correct regulatory status of OTC drugs.

In the practice domain, educational qualification was significantly associated with decision-making when a particular brand was unavailable ($p = 0.036$), a required antibiotic was not available ($p = 0.018$). This suggests that higher educational attainment positively influences rational substitution practices. However, no statistically significant associations were observed between attitude-related questions and socio-demographic variables.

5. Discussion

Developing countries' including India is beset with problems in healthcare delivery system. Lack of acceptable doctors has been a major interference in furnishing quality healthcare to all people. Most of the people still depend on pharmacists or other confederated health workers for their primary healthcare need. Pharmacists working in community pharmacy have always played an important part in healthcare system.

The present study demonstrates that while aggregate KAP scores were statistically insignificant when compared with

socio-demographic variables, specific knowledge and practice items exhibited significant associations, emphasizing the importance of item-level analysis rather than reliance on composite scores alone. The significant association between professional experience and understanding of OTC drug definition and legal status highlights an early-career knowledge gap. Pharmacists with fewer years of experience appeared less familiar with the regulatory nuances governing OTC medicines in India, where the term "OTC" lacks formal legal recognition. This finding underscores the necessity for structured regulatory orientation during early professional practice.

Educational qualification emerged as a decisive factor influencing dispensing practices, particularly in scenarios involving brand substitution and antibiotic unavailability. Pharmacists with higher qualifications demonstrated more appropriate decision-making, likely due to better exposure to pharmacotherapeutic principles and ethical dispensing norms during formal education. Similar findings have been reported in previous studies from South India, where education level significantly affected antibiotic dispensing behavior.

Interestingly, attitude-related responses were uniformly positive and did not vary significantly across demographic categories, suggesting that ethical inclination toward patient care is broadly consistent among community pharmacists, regardless of age, education, or experience. However, the lack of statistical significance should not be interpreted as optimal practice, as attitudinal positivity did not always translate into correct dispensing behavior.

Overall, these findings indicate that experience and education selectively influence critical decision-making aspects of OTC

dispensing, reinforcing the need for targeted Continuing Medical Education (CME) programs focusing on regulatory compliance, rational drug substitution, and antimicrobial stewardship.

6. Conclusion

Our findings indicate that community pharmacists are generally aware of their roles and responsibilities. Their positive attitude towards the study reflects a willingness to evaluate and enhance their professional practices. Knowledge regarding OTC Drugs among community pharmacists was found to be adequate but has potential for further improvement through Continuing Medical Education (CME) and educational awareness programs. To provide optimal patient care, it is essential for pharmacists to stay updated with current trends and advancements.

The Pharmacy Practice Regulations 2015 (latest amendment 2021) outline the various functions of pharmacists and provide guidelines for performing these functions efficiently. According to these regulations, pharmacists are now permitted to train students and disseminate knowledge about pharmacy practice. Therefore, it is crucial for pharmacists to maintain current knowledge to effectively educate their trainees. Updating regulatory practices is vital for enhancing pharmacists' overall knowledge, attitudes and practices across all aspects of pharmacy practice.

7. Limitations

Since our study is a cross-sectional study, the study results depend on the responses of our study participants and so chances of responder bias are likely as respondents might not reveal their genuine behavior to some of the questions.

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Conflict of Interest

The authors declare that there is no conflict of interest.

Consent to Participate

Oral informed consent was obtained from the study participants.

Ethical Considerations

Throughout the study period, no ethical conflicts were observed. As a result, it was determined that formal ethical clearance was not deemed necessary.

Abbreviations

WHO: World Health Organization; **OTC:** Over the Counter; **FDA:** Food and Drug Administration; **AMR:** Antimicrobial Resistance; **SLE:** Systemic Lupus Erythematosus; **RA:** Rheumatoid Arthritis; **NSAIDs:** Non-steroidal Anti-inflammatory Drugs; **CME:** Continuing Medical Education.

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