

# Analysing the Emerging Role of Community Pharmacists in Improving Healthcare Economics: A Qualitative Study to Explore Perspectives and Practices Regarding Pharmacoeconomics and Patient-centred Services

SH LAVANYA<sup>1</sup>, L KALPANA<sup>2</sup>, CB ANAGHA<sup>3</sup>, MEDHA A JOSHI<sup>4</sup>

## ABSTRACT

**Introduction:** Community pharmacies are among the most accessible points of care for patients seeking healthcare advice and services. With escalating out-of-pocket healthcare expenditure and a burgeoning Over-The-Counter (OTC) drug market in India, there is a substantial opportunity for community pharmacists to evolve from product-oriented service providers to patient-centred care providers. This transition has the potential to reduce healthcare costs and improve patient outcomes.

**Aim:** To explore community pharmacists' perspectives and practices regarding Patient-Centred Services (PCS) and to motivate them to apply pharmacoeconomic principles in patient care.

**Materials and Methods:** An exploratory study design with a qualitative approach, employing both purposive and convenience sampling, was used to explore the perspectives of community pharmacists from urban areas in the vicinity of BGS Global Institute of Medical Sciences, Bangalore, from November 2022 to January 2023. Face-to-face interviews using a semi-structured interview guide were conducted with 25 pharmacists who held a minimum qualification of a Diploma in Pharmacy and who consented to participate. The entire study was planned and executed in accordance with the Consolidated Criteria for Reporting Qualitative Research (COREQ) studies guidelines. Audio recordings were transcribed verbatim, and

the transcripts were thematically analysed using a content analysis approach. Descriptive statistics were used to represent the emerging themes and subthemes that were coded and categorically grouped. Upon completion of the study, a self-prepared and pre-validated awareness manual was distributed to the participants.

**Results:** A total of 25 qualified community pharmacists (19 males and 6 females), aged between 22 and 60 years, with professional experience ranging from four months to 35 years, were interviewed. Six major themes-prescription handling; patient-centred services beyond drug dispensing; barriers to offering PCS; practices related to OTC dispensing; understanding of pharmacoeconomic principles; and perceived roles in improving the Indian healthcare system-along with eleven subthemes, were identified. Eighty percent of participants expressed a positive outlook towards offering patient-centred services and reducing overall healthcare costs. However, time constraints and a lack of recognition and support from consumers and doctors were major concerns reported by more than 76% of respondents.

**Conclusion:** The present study highlights community pharmacists' readiness and acceptance of expanded professional roles and establishes that they are indispensable yet underutilised healthcare professionals. With appropriate support and recognition, community pharmacists can significantly contribute to improving the Indian healthcare system.

**Keywords:** Expanding role, Healthcare economics, Patient care, Thematic analysis

## INTRODUCTION

India's out-of-pocket expenditure on healthcare is among the highest in the world, accounting for approximately 62.6%, of which nearly 50% is borne directly by the common man [1,2]. With the burgeoning OTC drug market, healthcare economics and pharmacoeconomics have become the need of the hour. Although pharmacoeconomics emphasises the measurement of both costs and consequences of therapeutic decision-making, it primarily focuses on three fundamental outcomes of drug therapy, namely clinical, economic, and humanistic outcomes [3]. Therefore, pharmacoeconomics is a shared responsibility of all healthcare professionals.

Community pharmacies are often the first point of contact for patients seeking healthcare advice or services. With their expertise in promoting drug safety and in detecting, resolving, and preventing medication errors, community pharmacists have the potential to

significantly reduce healthcare expenditure [4]. Over the years, pharmacists have evolved from product-oriented service providers to patient-centred caregivers, engaging in a wide range of activities like patient counselling on medicines and lifestyle modifications, improving medication adherence, reporting Adverse Drug Reactions (ADRs), and identifying drug interactions [5,6]. Numerous studies have demonstrated that pharmacists can reduce healthcare expenditure through cost savings on medicines and cost avoidance strategies [7-9]. By offering PCS, community pharmacists have a substantial opportunity to contribute to pharmacoeconomics, thereby reducing healthcare costs and improving patient outcomes.

However, a key question that concerns many researchers is whether Indian pharmacists are ready to assume their expanded role as patient-centred caregivers. The available literature in the Indian context is limited with respect to the drivers and facilitators

required for this transition, as well as the steps necessary to bring about such change. Therefore, the present qualitative study was undertaken to explore the perspectives and practices of community pharmacists regarding PCS and to analyse the drivers related to OTC drug dispensing. The present study also aimed to motivate pharmacists to apply pharmacoeconomic principles in patient care to improve healthcare outcomes through the dissemination of an awareness manual.

#### Primary objectives:

- To explore the perspectives and practices of community pharmacists regarding PCS
- To analyse the drivers related to OTC drug dispensing

#### Secondary objective:

- To motivate pharmacists to apply pharmacoeconomic principles in patient care to improve healthcare outcomes.

## MATERIALS AND METHODS

A qualitative approach with an exploratory study design using semi-structured interviews was employed to explore community pharmacists' perceptions and practices related to pharmacoeconomics and patient-centred care. Community pharmacists from seven adjacent areas in South Bangalore, in the vicinity of BGS Global Institute of Medical Sciences, were approached to participate in the study, which was conducted between November 2022 and January 2023. Ethical clearance was obtained from the Institutional Ethics Committee of BGS Global Institute of Medical Sciences, Bangalore (BGS/GIMS/IEC/App/Dec/2022/09). Only pharmacists who provided written informed consent were included in the study.

The choice of a qualitative study design was driven by the limited research available on pharmacists' viewpoints and their understanding of their potential role in improving healthcare economics.

**Sample size calculation:** Considering the nature of the topic, study design, data quality, potential for data saturation, and existing literature, a sample size of 20-30 participants was deemed optimal based on the principles of grounded theory [10]. A non-probability sampling technique, incorporating convenience and purposive sampling, was employed to recruit participants.

**Inclusion criteria:** Pharmacists holding a minimum qualification of a Diploma in Pharmacy or higher and who consented to participate in the present study. Each participant was interviewed only once. Electronic data were stored on a password-protected system to maintain confidentiality.

**Exclusion criteria:** Informal dispensers were excluded to ensure the generation of information-rich data.

### Study Procedure

In-depth, face-to-face interviews were used as the primary data collection method to allow flexibility and facilitate an in-depth exploration of pharmacists' opinions, experiences, and motivations underlying their practices in drug dispensing and patient-centred care.

A draft interview guide was developed by the researchers based on gaps identified in the literature regarding pharmacists' practices and perceptions, with the intention of addressing the research questions. The guide was pilot-tested on two pharmacists to ensure uniformity and face validity. Based on their feedback, minor amendments were made, resulting in a comprehensive semi-structured interview guide with a face-validity score of 0.83 [Table/ Fig-1]. Data from the pilot-tested interviews were not included in the final analysis.

During the interviews, the interviewer initially asked open-ended questions, followed by probing questions to obtain further

clarification. Interviews were conducted by Researchers 1 and 3. Both interviewers conducted a practice interview prior to commencing the actual interviews to ensure rigour and consistency in the questions asked. The interviewers had no personal or professional relationship with any of the participants.

S. No.	Questions
1.	Apart from dispensing drugs, are there any other services that you offer to your customers?
2.	What is your understanding of Patient-Centred-Services (PCS)?
3.	Do you think pharmacists are in a position to provide patient-centred care? If yes, how? If not, why?
4.	What has been your experience with ADRs & drug interactions?
5.	How do you think you can contribute to patient's positive health?
6.	How do you handle a prescription?
7.	When patients approach you for advice on medicines for Over-the-Counter Drugs (OTCs), what is your approach?
8.	What do you think are the factors influencing OTC sale of drugs in India?
9.	What is your understanding of pharmacoeconomics?
10.	How do you think you can play a role in reducing healthcare costs and improving Indian healthcare system?

[Table/Fig-1]: Semi-structured interview guide.

Interviews were conducted at the participants' pharmacy premises at a pre-agreed time, and only the participant and the researcher were present during the interview. Participants were informed that the interviews would be audio-recorded and that they were free to decline answering any question if they so wished. Each interview lasted approximately 10-20 minutes.

Although the majority of pharmacists were proficient in English, several participants responded in Kannada, the state language of Karnataka. Responses in Kannada were transcribed using the Kannada Nudi application, translated into English, and independently double-checked by the researchers for accuracy. Based on preliminary analysis, interviews were continued until data saturation was achieved and no new themes emerged. The Consolidated COREQ guidelines were followed throughout the planning, design, conduct, and analysis of the study [11].

Grounded theory with a constructivist approach was employed with the aim of generating theory from participants' perspectives, using the principles of thematic analysis as suggested by previous researchers [12,13]. All audio-recorded interviews were transcribed verbatim into separate Microsoft Word documents. Manual coding using an inductive content analysis approach was adopted. Following each interview, transcripts were read multiple times to achieve familiarisation and to enhance interpretation and organisation into themes. Preliminary coding was conducted independently by Researchers 1, 2, and 4. This process involved reviewing transcripts, highlighting meaningful text segments using different colours, and grouping them into categories.

**Awareness booklet:** One of the objectives of the study was to improve awareness of the evolving roles of community pharmacists beyond traditional drug dispensing and to motivate them to provide patient-centred care. Accordingly, an awareness booklet was developed by the authors covering key topics such as pharmacoeconomic principles, OTC drug dispensing, ADR reporting, and counselling services [14]. The booklet was distributed to all participants upon completion of the study.

## STATISTICAL ANALYSIS

Through deliberative discussions and consensual resolution of differences, emergent themes were refined and formal coding was completed. Data were then organised into themes and subthemes with inputs from Researcher 3. Throughout data collection, careful attention was paid to achieving data saturation before considering further participant recruitment. Credibility checks were performed at regular intervals to verify the appropriateness of the identified codes

and themes. For coherence and transparency, study findings were presented using direct quotations from the raw data. Transcription and coding were facilitated using Microsoft Word, while thematic analysis was conducted using Microsoft Excel. A reflective diary was maintained to document researchers' thoughts about each interview and participant. To ensure accuracy and credibility, selected transcripts were shared with a few participants for verification. Throughout the research process, reflexivity was maintained, and appropriate measures were taken to minimise bias and to fairly represent the diverse viewpoints of participants during interpretation.

## RESULTS

A total of 25 qualified pharmacists were interviewed between December 2022 and January 2023. Thematic saturation appeared to be achieved by the 21<sup>st</sup> interview; however, four additional interviews were conducted to confirm saturation. Among the participants, 19 were male and six were female. The mean interview duration was 14 minutes ( $\pm$ Standard Deviation (SD) 2.4}. The demographic characteristics of the respondents are presented in [Table/Fig-2]. Data analysis yielded six emergent themes and eleven subthemes, which are summarised in [Table/Fig-3].

Characteristics	Frequency	Percentage
<b>Gender (n=25)</b>		
Male	19	76%
Female	6	24%
<b>Education (Highest qualification)</b>		
Diploma in Pharmacy	9	36%
B.Pharm	9	36%
M.Pharm	4	16%
Pharm D	3	12%
<b>Experience (in years)</b>		
0-5	6	24%
6-10	11	44%
11-20	5	20%
>20	3	12%

[Table/Fig-2]: Demographic characteristics of participants.

## DISCUSSION

The role of the pharmacist has evolved substantially over recent decades. Consistent with previous studies, pharmacists in the present study perceived their role as extending beyond medication dispensing and demonstrated high motivation to offer PCS like educating patients about medication-related information and managing minor ailments [15,16]. This finding contrasts with a study conducted by Saw PS et al., among community pharmacists in Malaysia [17], which may be attributed to the relatively higher educational background of pharmacists included in the present study. However, ADR reporting and pharmacovigilance emerged as areas where pharmacists need to play a more proactive and effective role.

Participants expressed concerns regarding communication gaps between pharmacists and physicians. These gaps may be linked to the traditionally hierarchical nature of healthcare teams, ambiguity in job roles, conflicts of interest with other Healthcare Professionals (HCPs), and reluctance among physicians to accept the expanding clinical role of pharmacists. These findings are consistent with previous studies and underscore the need for strengthened interprofessional collaboration [16,18]. Lack of public trust, busy pharmacy environments, time constraints, and absence of remuneration were other notable barriers to offering PCS, as reported by participants, aligning with findings from studies by Olsson E et al., and Kamei M et al., [19,20].

The present study also provided valuable insights into practices related to OTC drug dispensing. The OTC trend has steadily increased in India over recent years due to easy availability, affordability, and increased patient awareness [21]. As the present study included only qualified pharmacists, participants demonstrated clarity regarding generic medicines and OTC drugs. Analgesics, antipyretics, and antihistamines were the most commonly dispensed OTC medications based on consumer complaints. The selection of OTC brands was influenced by both pharmacists and consumers, with drug cost and clinical considerations being the primary drivers rather than marketing strategies. These findings are consistent with studies by Ravichandran A et al., and Grebenar D et al., [22,23].

Pharmacists were aware of antibiotic policies, and more than 65% exercised caution when dispensing antibiotics as OTC medications for minor ailments, often insisting on physician consultation.

Theme and subthemes	Summary	Illustrative quotations
<b>Theme 1: Patient-centred services (PCS) - Beyond drug dispensing</b>		
Subtheme 1a: Understanding PCS	<ul style="list-style-type: none"> <li>40% (n=10) pharmacists had an understanding of the term PCS</li> <li>76% (n=19) offered PCS in the form of counseling services, medication-related information, managing minor ailments</li> <li>20% (n=5) pharmacists envisioned their main role as medication dispensers</li> </ul>	"PCS is the term used for offering services like prescription monitoring, ADR monitoring and counseling"
Subtheme 1b: Medication related advice	<ul style="list-style-type: none"> <li>Advice provided by pharmacists were particularly on dosage, frequency, timing, duration and medication adherence (88%, n=22)</li> </ul>	"We always inform patients about how, when and how long to take medications, these would be told by their doctors, but we still do our job"
Subtheme 1c: Chronic illness management	<ul style="list-style-type: none"> <li>Counseling regarding life-style modifications weight management, food, habits and exercise-64%, n=16</li> <li>Use of devices like insulin-pens, nebulisers, inhalers were demonstrated by 5 (20%) pharmacists</li> </ul>	"Whenever a first-time patient comes to my store asking for inhalers, I ask them if they need a demo. Many people won't be knowing how to use and this will lead to medicine wastage"
Subtheme 1d: ADR reporting and Drug interactions	<ul style="list-style-type: none"> <li>Only 24% (n=6) were aware of ADR reporting form</li> <li>3 pharmacists (12%) had reported ADRs</li> <li>Only 2 pharmacists (8%) had come across drug interactions</li> </ul>	<p>"I have heard about it, but never reported"</p> <p>"If people develop any side effects, they consult doctors, not us. So haven't come across any ADRs"</p>
<b>Theme 2: Barriers to offering PCS</b>		
Subtheme 2a: Lack of support & recognition from consumers and doctors	<ul style="list-style-type: none"> <li>19 of them (76%) felt that patient rapport was critical for offering PCS</li> <li>80% of pharmacists (n=20) yearn for recognition from consumers and doctors</li> </ul>	"We can't offer advice to everyone. It depends on our rapport with our customers. Some patients get offended, if we speak anything extra. They ask, if I am a doctor to give them advice"
Subtheme 2b: Time constraints & lack of remuneration	<ul style="list-style-type: none"> <li>76% (n=19) expressed lack of time as a major hindrance to offer PCS</li> <li>5 pharmacists (20%) expressed lack of remuneration as a reason</li> </ul>	"Our store is in a busy area. In peak hours, we won't even have time to look at the customer. In addition, we don't get extra money for giving advice"
<b>Theme 3: Prescription handling</b>		
Subtheme 3a: Brand or Generic?	<ul style="list-style-type: none"> <li>84% (n=21) mentioned that 90% of prescriptions contained brand names and generic drugs, though cheaper were not preferred by 90% of customers</li> </ul>	"Brand names are a majority; only a few doctors write generic names. Again, when generic is written, we have the liberty to dispense, but also responsibility to give best drug"
Subtheme 3b: Illegible prescriptions	<ul style="list-style-type: none"> <li>96% pharmacists (n=24) could understand &gt;95% of prescriptions</li> <li>In case of illegibility, patients were advised to confirm with doctors</li> </ul>	"Illegible prescriptions have never been a problem. We can read doctors' handwriting"



Theme 4: Practices related to OTC dispensing		
Subtheme 4a: Drugs dispensed	<ul style="list-style-type: none"> <li>Analgesics, antipyretics, medications for cold and cough, drugs for gastritis, muscle relaxants, ORS - most commonly dispensed (92%, n=23)</li> </ul>	"People come asking for these drugs. Sometimes, they get old prescriptions, even six-month-old ones, but we still dispense, if not, we lose regular customers"
Subtheme 4B: Factors driving drug selection	<ul style="list-style-type: none"> <li>Cost of therapy, patient's symptoms and age-88% (n=22)</li> <li>Not influenced by medical representatives (44%, n=11)</li> </ul>	"If we don't consider the cost, then patients won't take medicines from us. So, cost is the main factor" "Of course, it's the cost. We usually avoid giving OTC medications for elderly people, young children and heart patients"
Subtheme 4c: Antibiotic dispensing	<ul style="list-style-type: none"> <li>68% (n=17) didn't dispense antibiotics as OTC and were well aware of antibiotic policy</li> <li>20% (n=5) prescribed antibiotics for minor ailments like URTI and infective diarrhoea</li> </ul>	"We don't take risks with antibiotics. "We dispense antibiotics to people whom we know. We are scared that if we don't dispense, we will lose them. For minor disease, we can give drugs up to 3 days. If symptoms don't resolve, we insist on physician consultation"
Theme 5: Understanding Pharmacoeconomic (PE) principles		
	<ul style="list-style-type: none"> <li>Understanding of concepts of PE was satisfactory (44%, n=11)</li> <li>40% pharmacists (n=10) were totally unaware of terminologies</li> <li>Support from doctors - A felt need for dispensing alternative brands (72%, n=13)</li> </ul>	"PE helps for chronic patients. Diabetics, hypertensives spend almost 7000 rupees/ month. There are cheaper alternatives, and patients can save up to 2000. But doctors insist on their prescriptions and drugs from big companies.
Theme 6: Perceived role in improving Indian healthcare system		
	<ul style="list-style-type: none"> <li>80% pharmacists (n=20) had a positive outlook towards contributing to patient-care</li> <li>Creating awareness about the scope of professional roles may improve healthcare outcomes (68%, n=17)</li> </ul>	"Poor people can't afford doctors. Pharmacy is not a money-making profession. We can make a difference, but doctors and patients should believe and support us"

[Table/Fig-3]: Summary of themes and illustrative quotations.

URTI: Upper respiratory tract infection

A key finding highlighted by participants was that more than 90% of prescriptions contained brand-name medications. Brand-name drugs are typically 30-60% more expensive than their generic counterparts [24]. Despite this, generic medicines were not preferred by the majority of patients or physicians. This observation reiterates the persistent apprehension among physicians in India regarding the quality of generic medicines, coupled with limited patient awareness. Participants opined that switching from branded medicines to generics or lower-cost alternatives could be cost-effective for patients; however, such practices were often not supported by prescribers.

Although generic substitution can positively influence pharmacoeconomics, Straka RJ et al., reported that it may negatively affect medication adherence, as well as clinical and safety outcomes, thereby potentially increasing overall healthcare costs through additional physician visits or hospitalisations [24]. Therefore, switching from branded medicines to generics should be approached cautiously and considered only when the anticipated economic benefit is clearly substantial.

Finally, as more than 50% of pharmacists demonstrated inadequate understanding of pharmacoeconomic principles and terminology, the findings emphasise the need for structured educational programmes and awareness initiatives. Such training can empower pharmacists to make informed, cost-effective decisions regarding pharmaceutical product use in the best interests of both patients and the healthcare system.

It was encouraging to observe that more than 80% of participants demonstrated a positive outlook toward contributing to patient care and the healthcare system. With enhanced skills training and improved communication within the healthcare team, pharmacists, as medication experts, can significantly improve patient outcomes by optimising drug therapy.

The study findings hold strong strategic relevance in guiding pharmacists toward acknowledging and embracing their responsibilities in patient care, particularly in the delivery of PCS and the application of pharmacoeconomic models. A study conducted by physicians to understand community pharmacists' perspectives represents, in itself, a meaningful step toward interprofessional collaboration. The concerns related to inadequate awareness of ADR and limited application of pharmacoeconomic principles were addressed through the development and dissemination of an awareness manual by the authors, aimed at enhancing patient safety and overall wellness.

## Limitation(s)

The present study has certain limitations. Sampling bias may be present, as participants were restricted to community pharmacists practicing in an urban setting; therefore, the findings may reflect perspectives specific to the geographical area in which the study was conducted. Interpretation bias is also possible, as the researchers who conducted the interviews were involved in data analysis. However, this also allowed researchers to capture and interpret nonverbal cues expressed during interviews. Additionally, the possibility of a Hawthorne effect cannot be ruled out. Establishing long-term rapport and conducting prolonged observations may help mitigate this effect in future studies. Further qualitative research exploring the perceptions of physicians and patients regarding the evolving roles of pharmacists may provide valuable insights for addressing existing barriers.

## CONCLUSION(S)

Community pharmacists possess substantial potential to reduce healthcare expenditure, yet remain underutilised healthcare professionals. As the first point of contact within the healthcare system, pharmacists can play a crucial role in reducing adverse drug reactions and drug-drug interactions associated with polypharmacy. Despite challenges such as limited recognition from other healthcare professionals and time constraints, pharmacists demonstrate readiness and acceptance of their role as patient-centred caregivers. There is a pressing need to enhance pharmacy education and training to keep pace with expanding responsibilities, particularly in the application of pharmacoeconomics, ADR reporting, and effective delivery of PCS. In summary, the community pharmacist may be regarded as a pivotal node within the healthcare network, working alongside physicians and other healthcare professionals to collectively ensure patient safety.

**Conflicts of Interest:** The findings of the present study were presented as an oral paper at the 52<sup>nd</sup> Annual Conference, Indian Pharmacological Society Conference (IPSCON), 2023.

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**PARTICULARS OF CONTRIBUTORS:**

1. Professor, Department of Pharmacology, BGS Global Institute of Medical Sciences, Bangalore, Karnataka, India.
2. Professor and Head, Department of Pharmacology, BGS Global Institute of Medical Sciences, Bangalore, Karnataka, India.
3. Postgraduate Student, Department of Paediatrics, IGICH, Bangalore, Karnataka, India.
4. Consultant, Department of Healthcare Professions Education, Bangalore, Karnataka, India.

**NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:**

SH Lavanya,  
170, 5<sup>th</sup> Main, 11<sup>th</sup> Cross, NGEF Layout, Nagarbhavi, Bangalore 72,  
Karnataka, India.  
E-mail: lavanyasumanthraj@gmail.com

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