

Assessment of Knowledge, Attitude and Practice of Community Pharmacist towards Pharmaceutical Care in India: A Questionnaire Study

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ABSTRACT

Background: Pharmaceutical care in 1990, they authored, "Pharmaceutical care is the responsible provision of drug therapy for the purpose of achieving definite outcome which improve patient quality of life" This study is to assess the knowledge, Attitude, Practice among Community Pharmacists for pharmaceutical care. **Materials and Methods:** Self-prepared and validated questionnaires were distributed among Registered Community pharmacists in India through online forms from December 2022 to July 2023, a cross-sectional questionnaire-based survey was used, with convenience sampling utilised. **Results:** The primary objective of this study was to assess the demographic details of the community pharmacist as well as the distribution of knowledge on pharmaceutical care services, community pharmacist's attitude towards practice of pharmaceutical care, community pharmacist's pharmaceutical care practices, barriers to implementation of pharmaceutical care. Among 350 community pharmacists' male respondents are higher than female. Most of the community pharmacists have 1 to 5 years' experience. Almost all respondents agrees that PC is mandatory for pharmacists. Most of the pharmacists provide counsel and advice during dispensing. **Conclusion:** This study evaluated the knowledge, Attitude, and Practice of community pharmacists in India. According to the current survey, Community Pharmacists have fair knowledge but in practice, however, they are ineffective. In view of the above, steps must be taken to educate, empower, and train Community Pharmacists in the field of pharmaceutical care.

Keywords: Good Pharmacy Practice, Community Pharmacists, Registered pharmacists.

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INTRODUCTION

Hepler and Strand defined the pharmaceutical care in 1990, they authored, "Pharmaceutical care is the responsible provision of drug therapy for the purpose of achieving definite outcome which improve patient quality of life".¹ The history of pharmaceutical care in India has a long history, dating back to ancient times when Ayurvedic medicine was the primary form of healthcare. Ayurveda, a 3,000-year-old system of traditional medicine developed in India, is still widely practised today and includes the use of herbal remedies, dietary therapies, and other holistic approaches to health. The traditional pharmacist role of preparing, dispensing, and selling medications is no longer adequate.²

However, modern pharmaceutical care is the dominant mode of practise for thousands of pharmacists worldwide. However, for the average patient, this concept is unknown because it was not traditionally performed as a routine, and on the other hand, patients are not accustomed to being attended elsewhere than the counter, and secondarily, because this practise is not provided on a large scale and in an identifiable manner in community pharmacies.³ It is performed to get the most therapeutic benefit out of the patient's pharmacological treatment.⁴

The health-care systems in terms of quality and processes, as demonstrated specifically in pharmacy practice. The Good Pharmacy Practice (GPP) concept incorporates pharmaceutical care principles. To control pharmaceutical care, pharmacists should follow practice standards that allow them to have a clear picture of their patients' health issues.⁵ The International Pharmaceutical Federation (FIP) published GPP standards for pharmacy practise in community pharmacies and hospital inpatient and outpatient pharmacies in 1992. GPP requires all pharmacists to ensure that the services they provide are of high quality. The World Health Organization (WHO) and FIP



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developed GPP guidelines to encourage all countries to develop pharmacy practise minimum standards.^{6,7} Pharmaceutical care is an important component of health care and should be connected with other components. Pharmaceutical care, on the other hand, is provided for the patient's direct benefit, and the pharmacist is directly responsible to the patient for that care. Before a pharmacist accepts this responsibility to provide pharmaceutical care.⁸

A community pharmacy, also known as a retail pharmacy or a retail drug outlet, is a location where medicines are stored, dispensed, supplied, or sold. The general public refers to community pharmacies as "medical stores." Community practise pharmacists are either diploma pharmacists or graduate pharmacists with B. Pharm degrees. The term as "Pharmacist". Pharmacists are required to be present during the dispensing and sale of medicines under the Drugs and Cosmetics act 1945.^{9,10} Community pharmacists have been designated as "the first port of call" among health-care professionals. They are also known as "primary care pharmacists," a professional who has direct access to the public and whose services are in high demand by the public and patients.^{11,12} The massive responsibility for ensuring the safe administration of medications to pregnant women by dispensing the safest drugs and providing appropriate information during pregnancy to reduce the possibility and potential risks of the drugs.¹³ A registered pharmacist provides the consumer with the appropriate prescribed drugs. A community pharmacist can serve as a liaison between patients and other health care providers.¹⁴ Pharmacists are considered as medication experts, with extensive knowledge in pharmacology and pharmacokinetics, as well as the ability to apply evidence in clinical practice.¹⁵

The pharmacist serves as a liaison between the doctor and the patient, providing both medicines and free medical advice without an appointment. Despite the fact that pharmacists can be the first point of contact for some healthcare consumers, they are a resource that is underutilised and almost "invisible" in recent health care policies.¹⁶⁻¹⁸ Historically, the essential duty of pharmacists was to prepare medicines and ensure their availability. Moreover, pharmacists nowadays can respond to external factors reshaping the profession (e.g., economic, epidemiological, demographic, and technological) by placing themselves within the medication use system and taking control of the process.¹⁹ To serve the public health, community pharmacists must strategically position themselves in the community. Community pharmacies can be found on busy streets, in grocery stores and shopping centres, in the centre of the most rural towns, and in the poorest neighbourhoods. Many community pharmacies in some countries open early and close late while other healthcare providers are unavailable.

According to WHO (1994), community pharmacists are the most viewable healthcare providers to the general public.^{20,21} This pharmacy has a daily use area of approximately 130 (one

hundred thirty) square metres, of which 105 square metres are at the entrance with a scales counter, customer space, display and storage of allopathic, ayurvedic, and homoeopathic medicines, cosmetics, and a few general items. The remaining 25m² are used for excess stock storage and include sanitary facilities, which are especially important when there are female employees.²² The role of community pharmacists in India is not well defined. In fact, the large percentages of pharmacists are limited to prescription filling. In India, very few researches have been conducted on the roles of community pharmacists. The current study was designed to assess the current knowledge, attitude, and practice of community pharmacists regarding GPP by quantifying quality parameters.

MATERIALS AND METHODS

A Cross Sectional study was conducted among Registered Community Pharmacists in Community pharmacy which located in India. This study involves knowing their knowledge, practice and attitude and practice of Community Pharmacists towards Pharmaceutical Care in India and their importance. The Study was conducted from the period of February 2023- June 2023. The Study duration is from December 2022 to July 2023 and the Study site is Community Pharmacists in and around Tamil Nadu. Community Pharmacists population were enrolled in this study prior to Institutional Ethics Committee (IEC) of Sri Ramachandra Institute of Higher education and Research, (DU), Porur, Chennai, Tamil Nadu, India (CSP/23/FEB/122/83) and written informed consent form was obtained from each participant before enrolment. The study was conducted using self-framed and validated KAP questionnaires among "registered community pharmacists" and then collected data were analysed. The sample size was determined by using n master software with Prevalence of knowledge for community pharmacists is 66% with relative precision of 5% and 95% of confidence level. Therefore, suspected responses from community pharmacists thought to have 350 responses. The sample size required for this study would be 350. The Inclusion criteria are registered Community pharmacist who are willing to participate. The Exclusion Criteria are health care professionals-Physicians, Nurses, Clinical Pharmacists, and unwilling to give inform consent and the data collection procedure are Self-administered questionnaire (Permission Questionnaire) will be used for the data collection. The collected data were analyzed by t-test, p value with IBM, SPSS statistic software 60.0. To describe about the data, descriptive statistical frequency analysis, and percentage analysis categorical variables were used.

Statistical Analysis

The data from the questionnaire was added directly to IBM, Statistical Package for the Social Sciences (SPSS) version 16.0 and rechecked for any incorrect entry to describe demographic variable, descriptive statistics were used, percentages was used to

express categorical variables. Data that emerged from domains using 2 point likert scale were found parametric. The association between the demographics of the respondents and knowledge, attitude, practices, barriers were calculated using the chi-square test, whereas the p value < 0.05 is considered as significant level.

RESULTS

Demographic details of the pharmacists

A total of 350 Registered Community Pharmacists from various Community Pharmacy in and around Tamil Nadu were enrolled into the study. Out of 350 Community Pharmacists respondents 185 (52.85%) were males and 165 (47.14%) females. The age group of Community Pharmacists population were 151 (43.14%) in between 21-25 years, 57 (16.28%) in between 26-30 years, 142 (40.57%) in between 31 and above years. The educational status majority of the pharmacists where D. Pharm 204 (58.28%), B. Pharm 141 (40.28%) and M. Pharm 141 (40.28%). The type of Community Pharmacy, most of the respondents are working in individual pharmacy are 299 (85.42), chain pharmacy 51 (14.57). The majority of the pharmacists were having working experience were 187 (53.42%) between 1 to 5 years, 67 (19.14%) between 6 to 10 years, 28 (8%) between 11 to 15 years, 34 (9.71%) between 16 to 20 years. The Demographic details of the community pharmacists is characterised in Table 1.

Knowledge wise response

Based on the pharmacist's educational status the questionnaire was calculated with mean knowledge, attitude, practice and barriers. On assessment knowledge level, pharmacists were interviewed through the online forms regarding basic of the Pharmaceutical Care. About 72% (0.000) pharmacists dispense medication to patients only. During the dispensing process, 90.85% (0.414) of the respondents provided guidance and advice. Pharmaceutical care was characterised by 62.85% (0.000) as giving medication solely to the patient. 87.42% (0.032) described PC as the chemist's duty to advise and supply medications that have been recommended by a doctor. 52.28% (0.000) believe that secondary prescription modifications and a review of the patient's therapy were required. Still, 87.42% (0.041) accept that pharmacists need to be entirely accountable for attending to patients' drug-related requirements. The knowledge wise response characterised in Table 2.

Attitude wise response

On assessment attitude level, pharmacists were interviewed through the online forms. 83.42% (0.720) of those assessed think that the PC should only be used by pharmacists. 92% (0.057) believe that pharmacists alone should be in charge of it. Increased ratios 93.14% (0.052) of respondents think that using pharmaceuticals to treat patients' conditions is a good approach that will benefit their requirements. 89.42% (0.008)

Table 1: Demographic Details of the Pharmacists.

Demographic Profile	No. of respondents (n)	Percentage of respondents (%)
Gender		
Male	185	52.85
Female	165	47.14
Age		
21-25	151	43.14
26-30	57	16.28
30 and above	142	40.57
Educational Status		
D. Pharm	204	58.28
B. Pharm	141	40.28
M. Pharm	5	1.42
Type of community Pharmacy		
Chain Pharmacy	51	14.57
Individual Pharmacy	299	85.42
Years of Experience		
1 to 5	187	53.42
6 to 10	67	19.14
11 to 15	28	8
16 to 20	34	9.71
20 and above	34	9.71

of respondents agree that providing pharmaceutical care in community pharmacies will strengthen client confidence in the industry and improve pharmacy operations. 92% of respondents agree that community chemists need to have an education in pharmaceuticals. 91.14% (0.037) of respondents think community chemists need to provide pharmaceutical treatment in order to secure an area of expertise on a health care team. In contrast, 69.14% (0.307) believe that providing pharmaceutical care is time-consuming, labor-intensive, resource-intensive, and not worth the effort required. The attitude wise response characterised in Table 3.

Practice wise response

On assessment practice level, pharmacists were interviewed through the online forms. In advance of providing the prescribed medication, 83.42% (0.000) of community pharmacists get information from their patients. Prescription problem detection usually ranges from 90.57% (0.198). Although 61.42% (0.000) of patients think that changing prescription medications is a necessary component of pharmaceutical care, 50.28% (0.000) of patients reported having Adverse Drug Reactions (ADRs). The practice wise response characterised in Table 4.

Barrier wise response

On assessment barrier level, pharmacists were interviewed through the online forms. Among the respondents, 24.28% (0.392) agrees that one of the barriers is the community pharmacists' poor rapport with other medical professionals. 30.57% (0.472) disagree that education through the current curriculum is not up to date with modern practices. While 34.28% (0.005) agrees to the fact that lack of training in PC. 29.42% (0.096) think that the cause is a lack of trust in the pharmacists themselves. 24.85% (0.040) concur that one of the barriers is a lack of privacy and space. 32.85% (0.000) concur that one of the challenges facing in community pharmacies is poor design. 31.71% (0.000) of respondents agree with the counselling attitude. The barrier wise response characterised in Table 5.

DISCUSSION

The purpose of this study is aware about knowledge, attitude, practice of community pharmacists towards the pharmaceutical care.²³ In the present study male respondents were higher than female respondents which is similar to the²⁴ whereas out of 350 community pharmacist 185(52.85%) of them are male and 165(47.14%) are female. There are three categories of age

Table 2: Knowledge wise response.

Knowledge	Yes (%)	No (%)	p value
Do you dispense medication to patients only?	252 (72)	98 (28)	0.000
Do you offer the advice and counsel during drug dispensing?	318 (90.85)	32 (9.14)	0.414
Do you offer advice to patients only?	220 (62.85)	130 (37.14)	0.000
Is the pharmacist only responsible is to dispense and counsel the patients on drug prescribed the physicians.	306 (87.42)	44 (12.57)	0.032
Do you review patient's drug therapy and secondary changes where necessary?	183 (52.28)	167 (47.71)	0.000
Are the pharmacists accountable for their professional conduct?	306 (87.42)	44 (12.57)	0.041

Table 3: Attitude wise response.

Attitude	Yes (%)	No (%)	p value
Does pharmaceutical care is a mandate of pharmacist only.	292 (83.42)	58 (16.57)	0.720
Do you think the primary responsibility of pharmacists in general and community pharmacists is to provide pharmaceutical care?	322 (92)	28 (8)	0.057
Does pharmaceutical care is a valuable mode of practice and which serve to improve patient health outcomes.	326 (93.14)	24 (6.85)	0.052
Do you think practicing of pharmaceutical health care in community pharmacies will increase patients' confidence in the profession and enhance pharmacy practice.	313 (89.42)	37 (10.57)	0.008
Do you think continuous pharmaceutical education is necessary for community pharmacists to practice pharmaceutical care?	322 (92)	28 (8)	0.117
In order to assure themselves a place in health care team, community pharmacists must practice pharmaceutical care.	319 (91.14)	31 (8.85)	0.037
Do you think by practicing pharmaceutical care is too resource intensive, time consuming and requires more man power.	242 (69.14)	108 (30.85)	0.306

Table 4: practice wise response.

Practice	Yes (%)	No (%)	p value
Do you collect medication/ medical data from your patients?	292 (83.42)	58 (16.57)	0.000
Do you able to identify problems/errors in prescription order?	317 (90.57)	33 (9.42)	0.198
Have you had any reported cases of ADR'S by your patients? Have you had any reported cases of ADR'S by your patients?	176 (50.28)	174 (49.71)	0.000
As a pharmacist to you think changing of prescribed medication is part of pharmaceutical care?	215 (61.42)	135 (38.57)	0.000

Table 5: Barrier Wise Response.

Barrier	Yes (%)	No (%)	p value
Poor relationship with Physician.	85 (24.28)	265 (75.71)	0.392
The current curriculum education is inadequate to practice.	107 (30.57)	243 (69.42)	0.472
Lack of training in pharmaceutical care.	120 (34.28)	230 (65.71)	0.005
Lack of confidence.	103 (29.42)	247 (70.57)	0.096
Lack of space.	87 (24.85)	263 (75.14)	0.028
Lack of privacy.	87 (24.85)	263 (75.14)	0.040
Improper design of community pharmacy.	115 (32.85)	235 (67.14)	0.000
Attitude towards counselling.	111 (31.71)	239 (68.28)	0.000

in this study, the majority of respondents 151(43.14%) age was 21-25, the minority respondents in this study 57(16.28%) age were 26-30 and last category 31 and above 142(40.57%) of community pharmacists. Regarding the level of qualification majority 141(40.28%) of the pharmacists in our study have bachelor of pharmacy degree.²³ In terms of level of qualification, the majority of pharmacists in our study 141(40.28%) have a bachelor of pharmacy degree as compared to other pharmacy degrees.²³ Based on years of experience, 72.56% of respondents falling between 1 and 10 years. These are the pharmacists of the younger age, who are more knowledgeable and are a major determinant of the workforce^[24] The respondents lacked awareness of the pharmaceutical care concept; 90.85% characterised pharmaceutical care as pharmacists delivering guidance and counselling only during medicine distribution, while 72% defined it as medication dispensing.²⁵ 62.85% only provide advice to patients, while 87.42% dispense and counsel patients on drugs prescribed. 52.28% believe that a review of the patient's pharmacological regimen and secondary modifications to prescriptions are required.²⁴ However, 50.28% described pharmaceutical care as pharmacists' responsibility to dispense and guide patients on medications prescribed by their doctors.²⁴ According to a WHO report, pharmacists play an important role in health care teams, both in hospitals and in the community. It demonstrated the necessity for ongoing mandatory pharmacy practise education for all community pharmacists.²⁵ The current study demonstrated that community pharmacists share positive

attitude towards pharmaceutical care.²⁵ Despite our community pharmacist's low level of knowledge, their attitude towards this subject was at a high level.²⁶ 292 (83.42%) of the 350 community pharmacists surveyed believed that a pharmacist should be the only one providing pharmaceutical treatment, while the remaining 58 (16.57%) disagreed. 322 (92%) community pharmacists agreed with this statement, while the remaining 28 (8%) disagreed, according to which the main responsibilities of pharmacists in general and community pharmacists is to offer pharmaceutical care. (6.85%) in opposition, out of 350 respondents, pharmaceutical care is a valuable form of practice that helps patients' health outcomes. There were 313 (89.42%) respondents who agreed and 37 (10.57%) who disagreed with the statement that providing pharmaceutical health care in community pharmacies will boost patients' confidence in the profession and improve pharmacy practices. The majority of community pharmacists 322 (92%) of them agree that continuing education in pharmaceuticals is vital for them to provide medical treatment, while 28 (8%) of them disagree. Community pharmacists must practice pharmaceutical care, according to 319 (91.14%) respondents out of 350 who were asked, to ensure their place on the healthcare team. The remaining 31 (8.85%) respondents disagreed.²⁵

Community pharmacists believe that providing pharmaceutical treatment involves too many resources, takes too much time, and needs more staff, according to this questionnaire. 242 (69.14%) people reacted favorably, while 108 (30.85%) people

said the opposite.²⁵ Based on this study showed that half of pharmacist had a positive attitude towards pharmaceutical care.²³ 350 respondents reported a total of 83.42% affirmative and 16.57% negative responses to the question of whether to collect medication data from patients. 90.57 people responded in favor of community pharmacists being able to examine issues or inaccuracies in prescription orders, while 9.42 people disagreed. 61.42% pharmacists agreed that switching a patient's prescription medicine is a necessary component of pharmaceutical care, whereas 38.57% disagreed.²⁴ We conducted a survey based on any reported cases of Adverse Drug Reactions (ADRs) by their patients. Of those, 50.28% of community pharmacists agreed, and 49.51 percent disagreed. The main barrier was on lack of training, this training should focus on the important of data collection of patients, medical line personal history including their prescription and OTC medication; it should also emphasize on the important of allocating specific time to discuss patients, medications and health care plans.²⁷ Lack of confidence, a lack of space, a lack of privacy, improper design of community pharmacist, attitude towards and the counselling, and the current curriculum education is inadequate are practice. Poor physician relationships and a lack of training in pharmaceutical care are among the 25% of the questions that are not similar. The disparate survey data from our study, which show a bad relationship with a physician. About 350 people participated in our study, and of them, 75.51% had positive relationships with their physicians; the remaining 24.28% disagreed, according to survey answers that were not identical to one another. Additionally, only 34.28% of community pharmacists disagreed with the statement that 65.71% of them had received adequate training in pharmaceutical care.²⁷

CONCLUSION

This study evaluated the knowledge, Attitude, and Practice of community pharmacists in India. According to the current survey, Community Pharmacists have fair knowledge but in practice, however, they are ineffective. In view of the above, steps must be taken to educate, empower, and train the Community Pharmacists in the field of pharmaceutical care. Still Pharmaceutical Care is infancy Stage in our count. Pharmacists' role in improving patients care and their quality of life, made it necessary for regulatory bodies to implement a standard guideline on qualification of community pharmacists in the provision of pharmaceutical care.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ABBREVIATIONS

GPP: Good Clinical Practice; **WHO:** World Health Organization; **FIP:** International Pharmaceutical Federation; **PC:** Pharmaceutical Care; **OTC:** Over-the-counter; **TB:** Tuberculosis; **AIDS:** Acquired Immune Deficiency Syndrome; **EHR:** Electronic Health Record; **HIE:** Health Information Exchange; **KAP:** Knowledge Attitude Practice; **IBM:** International Business Machines; **SPSS:** Statistical Package for Social Sciences.

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APPENDIX: QUESTIONNAIRE

Section A-Demographic Details (Tick the appropriate)

1. Age: ----- (Years)
2. Gender:
Male: Female:
3. Educational status:
Diploma in Pharmacy:
Bachelor of Pharmacy:
Master of Pharmacy:
(Others):
4. Type of pharmacy:
Community pharmacy
Individual pharmacy
Chain pharmacy
5. Number of years' experience in pharmacy ----- (years)

Section B-Distribution of Knowledge on Pharmaceutical Care Services

1. Do you dispense medication to patients only?
2. Do you offer the advice and counsel during drug dispensing?
3. Do you offer advice to patients only?
4. Is the pharmacist only responsible is to dispense and counsel the patients on drug prescribed the physicians.
5. Do you review patient's drug therapy and secondary changes where necessary?
6. Are the pharmacists accountable for their professional conduct?

Section C-Community Pharmacist's Attitude towards Practice of Pharmaceutical Care.

1. Does pharmaceutical care is a mandate of pharmacist only

2. Do you think the primary responsibility of pharmacists in general and community pharmacists is to provide pharmaceutical care?
3. Does pharmaceutical care is a valuable mode of practice and which serve to improve patient health outcomes.
4. Do you think practicing of pharmaceutical health care in community pharmacies will increase patients' confidence in the profession and enhance pharmacy practice?
5. Do you think continuous pharmaceutical education is necessary for community pharmacists to practice pharmaceutical care?
6. In order to assure themselves a place in health care team, community pharmacists must practice pharmaceutical care
7. Do you think by practicing pharmaceutical care is too resource intensive, time consuming and requires more man power.

Section D-Community Pharmacist's Pharmaceutical Care Practices.

1. Do you collect medication/ medical data from your patients?
2. Do you able to identify problems/errors in prescription order?
3. Have you had any reported cases of ADR'S by your patients? Have you had any reported cases of ADR'S by your patients?
4. As a pharmacist to you think changing of prescribed medication is part of pharmaceutical care?

Section E-Barriers to Implementation of Pharmaceutical Care.

1. Poor relationship with Physician.
2. The current curriculum education is inadequate to practice.
3. Lack of training in pharmaceutical care.
4. Lack of confidence.
5. Lack of space.
6. Lack of privacy.
7. Improper design of community pharmacy.
8. Attitude towards counselling.