

THE EVALUATION STUDY OF THE QUALITY AND CONTENT OF PATIENT MEDICATION COUNSELLING IN COMMUNITY PHARMACY

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ABSTRACT

Patient medication counselling is an important component of pharmaceutical care that promotes the safe and effective use of medicines. This questionnaire-based cross-sectional study was conducted to evaluate the quality and content of patient medication counselling provided by community pharmacists in Tiruvannamalai. A total of 46 community pharmacists and 112 patients participated in the study. The results showed that most pharmacists provided information regarding the purpose and administration of medicines and used simple language during counselling. Most patients reported understanding the name, purpose, and proper use of their medicines and expressed satisfaction with the counselling received. However, information regarding missed doses, possible side effects, and drug or food interactions was provided less consistently. The study concludes that medication counselling in community pharmacies is generally beneficial but requires further improvement and standardization to ensure comprehensive, patient-centred, and safe medication use.

KEYWORDS: Patient medication counselling, Community pharmacy, Pharmacist, Patient education, Medication adherence.

INTRODUCTION

Community pharmacists are among the most accessible healthcare professionals and frequently serve as one of the first points of contact between patients and the healthcare system. Due to their accessibility and regular interaction with patients, community pharmacists play an important role in promoting the safe, effective, and rational use of medicines. The role of the pharmacist has progressively evolved from the traditional product-oriented functions of dispensing and supplying medicines to a more patient-centred role involving pharmaceutical care, medication counselling, medication review, health education, self-care support, and the promotion of medication adherence [1,2].

Patient medication counselling (PMC) is an essential component of pharmaceutical care and is aimed at improving patients' understanding and appropriate use of medicines. Medication counselling involves providing oral and/or written information to patients or their caregivers regarding the proper use of prescribed and non-prescribed medicines. Important components of medication counselling include the name and purpose of the medicine, dosage, route and frequency of administration, duration of treatment, possible adverse effects, precautions, contraindications, drug or food interactions, storage conditions, missed-dose instructions, and the importance of medication adherence [3,4]. Adequate medication counselling enables patients to make informed decisions regarding their treatment and participate actively in the management of their health.

Effective medication counselling has several important benefits for patients and the healthcare system. It can improve patients' knowledge about their medicines, promote medication adherence, reduce medication-related problems, and contribute to improved therapeutic outcomes. Counselling also provides an opportunity for pharmacists to identify potential medication errors, inappropriate medicine use, possible interactions, and other drug-related problems before they result in harm. Furthermore, effective communication between pharmacists and patients can improve patient confidence, satisfaction, and engagement with pharmaceutical care services [2,3].

Medication counselling may be provided through verbal communication, written information, or a combination of both methods. Verbal counselling allows direct interaction between the pharmacist and patient and provides an opportunity for patients to ask questions and clarify doubts. Written information, such as patient information leaflets, can support verbal

counselling and provide information that patients can review later. However, the effectiveness of counselling depends not only on whether information is provided but also on the clarity, completeness, accuracy, and patient-centred nature of the communication. Therefore, pharmacists should use simple and understandable language and confirm whether patients have understood the information provided [2,4].

Despite the recognized importance of patient medication counselling, previous studies have reported considerable variations in the quality and content of counselling provided in community pharmacies. Showande and Laniyan evaluated patient medication counselling from the perspectives of both community pharmacists and pharmacy customers and reported differences between the information pharmacists believed they provided and the information patients reported receiving. Their findings emphasized the importance of evaluating both the content and quality of counselling and considering the perspectives of both pharmacists and patients [3].

Similarly, studies conducted in different countries have demonstrated that medication counselling is often incomplete. Alfadl et al. evaluated medication counselling practices in community pharmacies in the Qassim region of Saudi Arabia and found that pharmacists did not consistently provide comprehensive medication-related information. Although basic information such as dosage and administration was more frequently communicated, other important aspects of counselling were less consistently addressed [4]. This indicates that the provision of some medication information alone does not necessarily represent comprehensive or high-quality medication counselling.

The quality of medication counselling is influenced by several pharmacist-related, patient-related, and environmental factors. Pharmacist-related barriers may include inadequate knowledge, limited communication skills, lack of confidence, heavy workload, insufficient time, and inadequate opportunities for continuing professional education. Patient-related factors may include limited interest in receiving counselling, low awareness of the pharmacist's professional role, communication difficulties, and low health literacy. Environmental factors, such as the absence of a private counselling area, lack of adequate resources, and high patient volume, may also negatively influence the quality of pharmacist-patient interactions [2,5].

Patient participation is another important factor influencing the effectiveness of medication counselling. Qudah et al., in a systematic review, reported that patient engagement during pharmacy consultations is influenced by several factors, including patient characteristics, communication behaviour, pharmacist communication skills, and the quality of the

pharmacist-patient relationship. Active participation by patients can encourage them to ask questions, clarify doubts, and improve their understanding of medication-related information. Therefore, medication counselling should be considered a two-way communication process rather than simply the transfer of information from the pharmacist to the patient [2].

Several methods have been used to evaluate medication counselling practices. These include self-administered questionnaires, direct observation, structured assessment tools, and simulated patient methods. Self-reported questionnaires are useful for assessing the perceptions and attitudes of pharmacists and patients; however, self-reported practices may not always accurately reflect actual counselling behaviour. Surur et al. compared community pharmacists' self-reported counselling practices with their actual practices using simulated patient encounters and identified differences between reported and observed behaviour. The study found that information regarding dosage schedules and medicine administration was commonly provided, whereas important information concerning missed doses, contraindications, and medication adherence was frequently omitted [5].

The findings of previous studies indicate that certain areas of medication counselling are consistently overlooked during routine pharmacy practice. While pharmacists often provide basic instructions regarding how and when to take medicines, safety-related information such as possible side effects, drug interactions, contraindications, missed-dose instructions, and adherence-related advice may be provided less frequently. These omissions may negatively affect patients' ability to use medicines safely and effectively. Therefore, the quality of medication counselling should be evaluated not only by determining whether counselling occurs but also by assessing the specific content of the information provided and the effectiveness of communication [3–5].

Patient understanding and satisfaction are also important indicators of the quality of medication counselling. Patients who understand the purpose and proper use of their medicines are more likely to use them correctly and adhere to treatment recommendations. Patient satisfaction may be influenced by the adequacy of information provided, the pharmacist's communication skills, the amount of time spent during counselling, and the opportunity to ask questions. Evaluating patient experiences can therefore provide valuable information regarding the effectiveness of counselling and identify areas where pharmacy services can be improved [2,3].

The increasing emphasis on patient-centred pharmaceutical care has highlighted the need for standardized and comprehensive medication counselling practices. Professional guidelines encourage pharmacists to provide relevant and understandable medication information and to

involve patients actively in the counselling process. Structured counselling approaches can help ensure that essential information is not omitted and that patients receive consistent information regarding the safe and effective use of their medicines [1,3].

Although medication counselling has been studied in several countries, important gaps remain in evaluating both the quality and content of counselling in community pharmacy practice. Much of the available research focuses on whether counselling was provided rather than comprehensively assessing what information was communicated and how effectively it was delivered. Furthermore, differences between pharmacists' self-reported practices and patients' experiences demonstrate the importance of assessing medication counselling from multiple perspectives [3,5].

Therefore, the present study was undertaken to evaluate the quality and content of patient medication counselling provided by community pharmacists. The study also aimed to assess patients' understanding of medication-related information and evaluate the information provided regarding important aspects of medicine use, including possible side effects, missed-dose instructions, medication adherence, and drug or food interactions. The findings of this study may help identify gaps in current counselling practices and contribute to the development of improved, standardized, and patient-centred medication counselling services in community pharmacy settings.

METHODOLOGY

STUDY DESIGN

A **questionnaire based cross-sectional study** was conducted by distributing a self-administered questionnaire among community pharmacists in Tiruvannamalai.

STUDY POPULATION

The study population included were community pharmacists and patients, who was working in community set up and the data was collected by simple randomization sampling method.

INCLUSION CRITERIA

Patients

- Age above 18 years and literate.

Pharmacists

- Those who are registered pharmacists.
- Working in community pharmacy.

EXCLUSION CRITERIA

Patients

- Age below 18years and illiterate.

Pharmacists

- Those not willing to participate.
- Those who are not a registered pharmacist in the community setting.

CONSENT FORM

A written consent was obtained from the Community Pharmacists and patients after explaining the need of the study and their importance in public health. It was ensured that data collect will be used only to conduct the research and it will be treated confidentiality.

VALIDATION OF ASSESSMENT QUESTIONNARE FORM

The **assessment questionnaire form** was validated for its layout and design, readability and contents validity.

LAYOUT AND DESIGN

Internationally accepted Baker Able Leaflet Design [BALD] criterion is used for good design characteristics of the assessment questionnaire form. Baker Able Leaflet Design (BALD) method is used to assess the layout and design of the leaflets. The scores are based on the length of the line, distance between the line, letter font size, graphics used, percent of white space, paper quality. A document scores 25 or more considered as the document with good layout and design. **Baker Able Leaflet Design Assessment tool**

Design Characteristics	3 Points	2 Points	1 Point	0 Point
Lines 50-89 mm long			Yes	No
Separation between lines	> 2.8mm	2.2-2.8mm		<2.2mm
Lines unjustified			Yes	No
Serif typeface		Yes		No
Type size	12 point	10-11 point	9 point	< 9 point
First Line indented			Yes	No
Titles lower case			Yes	No
Italics		0 words	1-3 words	≥ 4 words
Positive advice		Positive		Negative
Headings stand out		Yes		No
Numbers all Arabic			Yes	No
Boxed text			0-1Box	> 1 Box
Pictures	Words count not replace	In between	In between	None or Superfluors
Number of colors	4	3	2	1
White space	>40%	30-39%	20-29%	<20%

READABILITY TESTS

The **Flesch–Kincaid readability tests** are designed to indicate how difficult a passage in English is to understand. There are two tests: the Flesch Reading-Ease, and the Flesch–Kincaid Grade Level.

FLESCH READING EASE SCORE

In the Flesch reading-ease test, higher scores indicate material that is easier to read; lower numbers mark passages that are more difficult to read.

The formula for the Flesch reading-ease score (FRES) test is:

$$\text{FRES} = 206.835 - 1.015 \times (\text{total words}/\text{total sentences}) - 84.6 \times (\text{total syllables}/\text{total words})$$

FLESCH–KINCAID GRADE LEVEL

These readability tests are used extensively in the field of education. The "Flesch–Kincaid Grade Level Formula" presents a score as a U.S. grade level, making it easier for teachers, parents, librarians, and others to judge the readability level of various books and texts. It can also mean the number of years of education generally required to understand this text, relevant when the formula results in a number greater than 10.

The grade level is calculated with the following formula:

$$\text{FKGL} = 0.39 \times (\text{total words}/\text{total sentences}) + 11.8 \times (\text{total syllables}/\text{total words}) - 15.59$$

READABILITY ASSESSMENT TOOL

Score	School level (US)	Notes
100.00–90.00	5th grade	Very easy to read. Easily understood by an average 11-year-old student.
90.0–80.0	6th grade	Easy to read. Conversational English for consumers.
80.0–70.0	7th grade	Fairly easy to read.
70.0–60.0	8th & 9th grade	Plain English. Easily understood by 13- to 15-year-old students.
60.0–50.0	10th to 12th grade	Fairly difficult to read.
50.0–30.0	College	Difficult to read.
30.0–10.0	College graduate	Very difficult to read. Best understood by university graduates.
10.0–0.0	Professional	Extremely difficult to read. Best understood by university graduates.

CONTENTS VALIDITY

Content validity involves assessing individual questions on a test and asking experts whether each one targets characteristics that the instrument is designed to cover. This process compares the test against its goals and the theoretical properties of the construct. Content was validated by using EQIP method. EQIP is a questionnaire-based survey, which comprises of 10 questions based on various criteria. calculated using the scale.

CONTENT VALIDITY RATIO (CVR)

This approach involves asking experts to determine whether the knowledge or skill that each item on the test assesses is “essential,” “useful, but not necessary,” or “not necessary.

$$\text{CONTENT VALIDITY RATIO} = (NE - N/2) / (N/2)$$

where:

ne = number of SME panelists indicating “essential”

N = total number of SME panelists

CONTENT VALIDITY INDEX (CVI)

The CVI is the average CVR score of all questions in the test. To calculate the **content validity index** (CVI) of the entire test we took the average of all the CVR scores of the fifteen questions.

$$\text{CVI} = \text{CVR} / \text{total number of questions}$$

Formula yields values which range from +1 to -1. Values above 0 indicate that at least half the SMEs agree that the question is essential. The closer to +1, the higher the content validity.

DATA COLLECTION

The data was collected on the day we assumed to be a favorable time to get the respondents in their drug store. All community pharmacists and patients were approached and only willing pharmacy personnel and patients was filling the self-administered questionnaire. Instructions were given on the topic as well as the objective of the research. The questionnaire was distributed by the data collector and collected back once the community pharmacists and patients have filled in the required information.

DATA ANALYSIS

Data analysis was performed using the Statistical Package for Social Science Version 22 (SPSS V.22). Demo-graphic Characteristics were applied to calculate the number (frequencies) and

percentages. Associated factors within group were calculated using Chi-square (χ^2) test. A p-value ≤ 0.05 was considered statistically significant.

RESULTS AND DISCUSSION

Community pharmacies play an important role in the healthcare system by providing patients with professional advice and support regarding medicines and their safe use. The assessment questionnaire was evaluated for layout and design, readability, and content validity before being used for data collection.

The Baker Able Leaflet Design (BALD) criterion was used to assess the layout and design of the questionnaire. The obtained BALD score was 32, which indicates that the questionnaire had a good layout and design. A well-designed questionnaire with appropriate spacing, font size, line length, graphics, and white space can improve the visual presentation and facilitate understanding by the respondents.

The readability of the questionnaire was assessed using the Flesch Reading Ease/Flesch–Kincaid readability approach. The questionnaire obtained a 6th-grade readability level, indicating that the content was easy to read and understand. This level of readability is appropriate for a questionnaire intended for use among respondents with different educational backgrounds and helps reduce difficulty in understanding the questions.

The content validity of the assessment questionnaire was evaluated using the EQIP method and the Content Validity Ratio (CVR). The questionnaire obtained a CVR value of 0.77, indicating good agreement among the subject matter experts regarding the essentiality and relevance of the questionnaire items. Therefore, the questionnaire was considered to have satisfactory content validity and was suitable for assessing the intended parameters. Based on the validation findings, the questionnaire was considered appropriate in terms of its design, readability, and content validity and was subsequently used for the main study among the 46 community pharmacists and 112 patients.

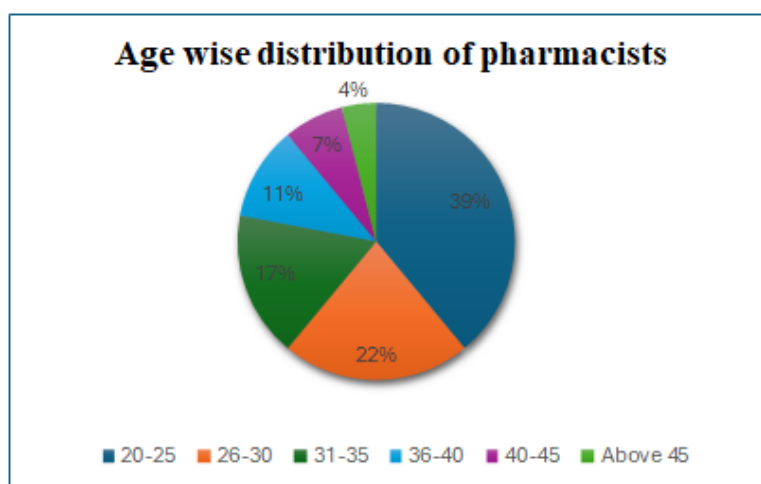
Overall, the validation results demonstrate that the assessment questionnaire was well designed (BALD score 32), easy to understand (6th-grade readability level), and adequately validated for content (CVR 0.77). These findings support the reliability and suitability of the questionnaire for assessing the knowledge and practices related to patient medication counselling among community pharmacist.

Respondent demographic characteristics of (n=46) community pharmacists

1. AGE WISE DISTRIBUTION

Table 1: Age wise distribution of community pharmacy. (n=46)

Age (years)	Number of pharmacists	Percentage (%)
20-25	18	39%
26-30	10	22%
31-35	8	17%
36-40	5	11%
40-45	3	7%
Above 45	2	4%
Total	46	100%

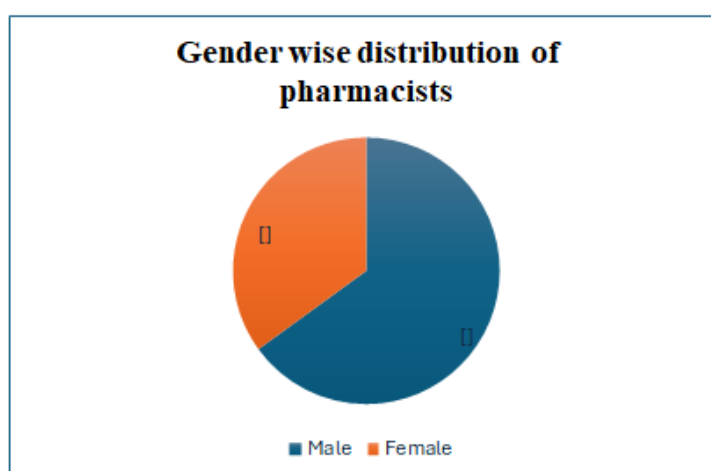


2. GENDER WISE DISTRIBUTION

There were 30 males and 16 females out of 46 pharmacists

Table 2: Gender wise distribution of community pharmacist. (n=46)

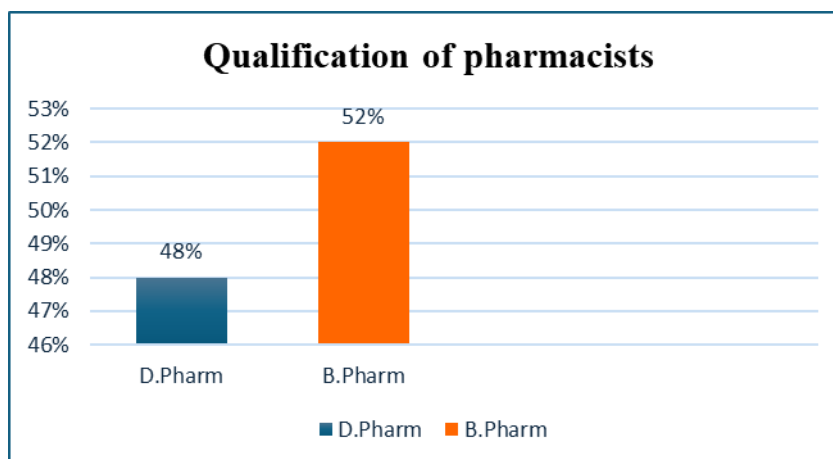
Gender	Number of pharmacists	Percentage (%)
Male	30	65%
Female	16	35%
Total	46	100%



3. QUALIFICATION OF PHARMACISTS

Table 3: Qualification of pharmacists. (n=46)

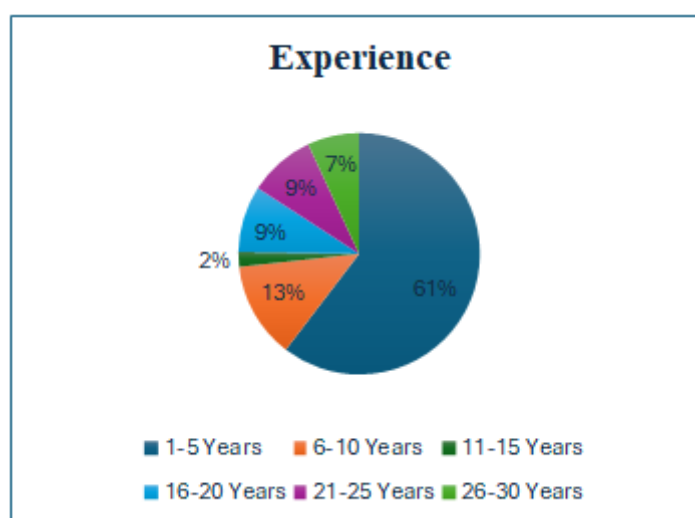
Qualification	Number of pharmacists	Percentage (%)
D.Pharm	22	48%
B.Pharm	24	52%
Total	46	100%



4. EXPERIENCE OF PHARMACISTS

Table 4: Experience of pharmacists. (n=46)

Experience	Number of pharmacists	Percentage (%)
1-5 Years	28	61%
6-10 Years	6	13%
11-15 Years	1	2%
16-20 Years	4	9%
21-25 Years	4	9%
26-30 Years	3	7%
Total	46	100%

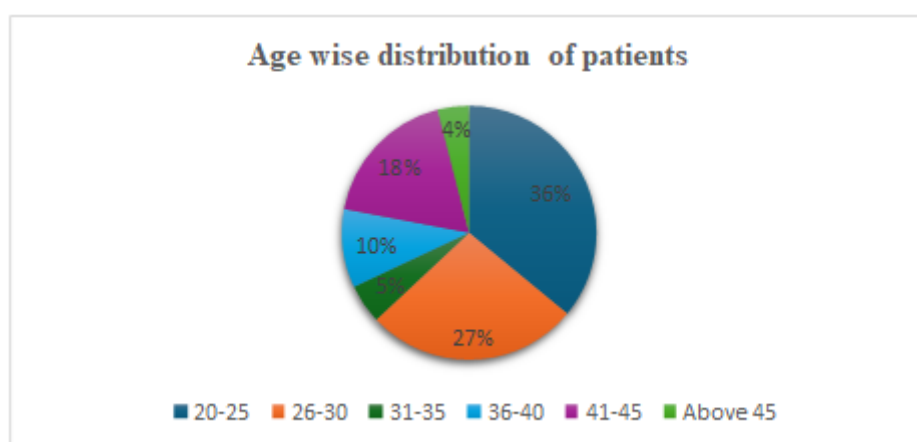


Respondent demographic characteristics of (n=112) patients

1. AGE WISE DISTRIBUTION

Table 5: Age wise distribution of patients. (n=112)

Age (years)	Number of patients	Percentage (%)
20-25	40	36%
26-30	30	27%
31-35	6	5%
36-40	11	10%
40-45	20	18%
Above 45	5	4%
Total	112	100%



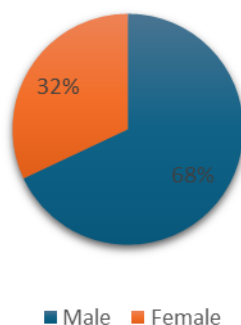
2. GENDER DISTRIBUTION OF PATIENTS

There were 76 males and 36 females out of 112 patients

Table 6: Gender wise distribution of patients. (n=112)

Gender	Number of pharmacists	Percentage (%)
Male	76	68%
Female	36	32%
Total	112	100%

Gender distribution of patients

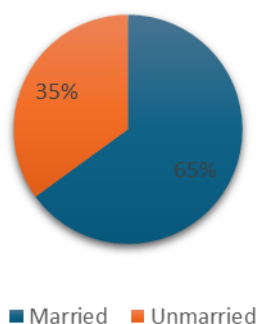


3. MARITAL STATUS

Table 7: Marital status of patients. (n=112)

Marital status	Number of patients	Percentage (%)
Married	73	65%
Unmarried	39	35%
Total	112	100%

Marital Status



4. QUALIFICATION OF PATIENTS

Table 8: Qualification of patients. (n=112)

Qualification	Number of patients	Percentage (%)
10 th	24	21%
12 th	31	28%
Under Graduate	57	51%
Total	112	100%

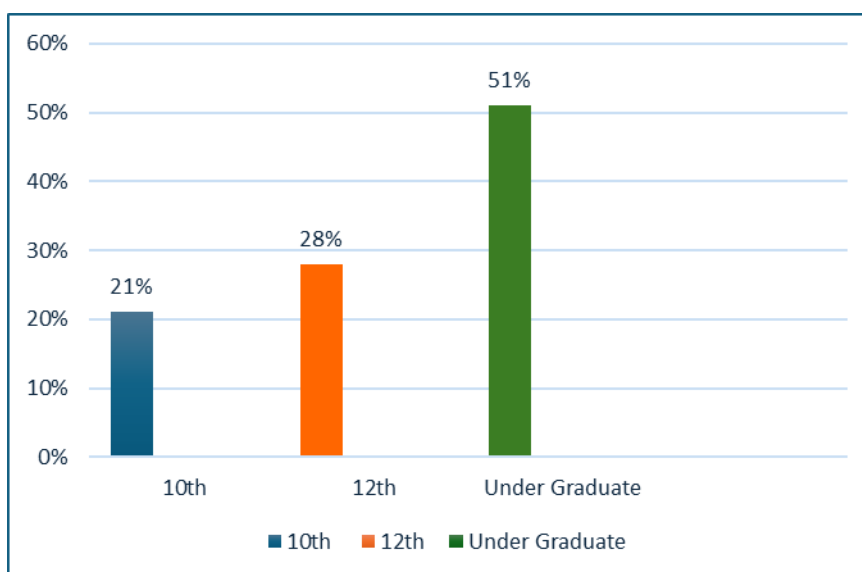


Table 9: (n=46)

Survey Questionnaire of pharmacists on patient medication counselling.

S.NO	PHARMACIST QUESTION	YES	NO	P VALUE
1.	Did you explain the purpose of the medicine?	43	3	0.0001
2.	Did you explain possible side effects?	32	14	0.0040
3.	Did you explain what to do if a dose missed?	29	17	0.0345
4.	Did you explain important drug or food interactions?	26	20	0.1658
5.	Did you provide medication counselling to every patient?	40	6	0.0001
6.	Did you counsel patients about medication adherence?	30	16	0.0180
7.	Did you counsel elderly patients more carefully?	43	3	0.0001
8.	Did you spend enough time on medication counselling?	41	5	0.0001
9.	Did you use simple language during counselling?	46	0	0.000
10.	Did you check whether the patient understand your instructions?	46	4	0.0002

p-value ≤ 0.05 was considered statistically significant

Table 10: (n=112) Survey Questionnaire of patients on patient medication counselling.

S.NO	PATIENT QUESTION	YES	NO	P VALUE
1	Do you know the name of your medicine?	108	4	0.00012
2	Did the pharmacist explain how to take the medicine?	106	6	0.00013
3	Did the pharmacist explain why you should take the medicine?	101	11	0.00021
4	Did the pharmacist tell you about possible side effects?	88	24	0.0037
5	Did the pharmacist explain what to do if you miss a dose?	76	36	0.0015
6	Did you know when to take your medicine?	104	8	0.0001
7	Do you know how to store your medicines?	93	19	0.0001
8	Has medication counselling helped you use your medicines correctly?	105	7	0.0001
9	Would you like to receive medication counselling every time you visit the pharmacy?	95	17	0.0001
10	Are you satisfied with the medication counselling?	91	21	0.0001

p-value ≤ 0.05 was considered statistically significant

CONCLUSION

The present study was undertaken to assess the content and quality of pharmacist-provided medication counselling and its relationship with patient knowledge, medication use, adherence, and satisfaction in a community pharmacy setting. Data were collected using structured questionnaires administered separately to pharmacists and patients, and the responses were statistically analysed. The findings demonstrated that several aspects of pharmacist medication counselling were statistically significant ($p \leq 0.05$). However, not all pharmacist responses were statistically significant, as the explanation of important drug or food interactions showed a p-value of 0.1658 ($p > 0.05$). Therefore, these findings indicate that counselling practices were generally favourable, while certain areas require further improvement.

From the pharmacists' perspective, a large majority reported explaining the purpose of medicines, providing medication counselling to patients, using simple language during counselling, and checking patients' understanding of the instructions. However, comparatively lower responses were observed for explaining missed-dose instructions and important drug or food interactions. These areas indicate the need for greater attention, consistency, and standardization in medication counselling practice.

From the patients' perspective, the responses were predominantly positive. Most patients reported knowing the name of their medicine, understanding how and why to take it, receiving information about possible side effects, and knowing appropriate medication storage conditions. A high proportion of patients also reported that medication counselling helped them use their medicines correctly. Furthermore, most patients expressed a preference for receiving medication counselling during every pharmacy visit and reported satisfaction with the counselling provided.

Overall, the findings suggest that pharmacist-provided medication counselling is an important component of community pharmacy services and contributes to improved patient understanding and appropriate medication use. The positive responses reported by patients also indicate that counselling is valued and perceived as beneficial by the majority of participants. In conclusion, pharmacist-provided medication counselling plays an important role in bridging the gap between prescribed therapy and patient understanding. The study highlights the need to further strengthen and standardize counselling, particularly regarding possible side effects, missed-dose instructions, and drug or food interactions. Continued

pharmacist education, appropriate counselling guidelines, and patient-centred communication may help improve medication safety, adherence, therapeutic outcomes, and the overall quality of pharmaceutical care in community pharmacy settings.

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