

EVALUATING THE ROLE OF COMMUNITY PHARMACIST IN PATIENT EDUCATION AND MEDICATION ADHERENCE IN DERMATOLOGICAL DISORDERS

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ABSTRACT

Background: Dermatological disorders are common and often chronic, requiring prolonged topical and/or systemic therapy, and poor adherence to these regimens can compromise clinical outcomes. In community settings with limited specialist access, community pharmacists are frequently the most accessible professionals for reinforcing correct medicine use and addressing patient concerns. **Objective:** To evaluate community pharmacist-provided patient education and its association with patient knowledge and medication adherence among patients with dermatological disorders in and around Kumarapalayam, Tamil Nadu. **Methods:** A six-month community-based cross-sectional study was conducted among adults with physician-diagnosed dermatological disorders receiving dermatological medications from community pharmacies. Data were collected using a structured interviewer-

administered questionnaire assessing socio-demographic and clinical variables, pharmacist counselling exposure, patient knowledge, self-reported medication adherence using an 8-item tool (score 0–8), perceived barriers to adherence, and satisfaction with pharmacist support. Descriptive statistics, chi-square tests, and correlation analyses were performed, with $p < 0.05$ considered statistically significant. **Results:** A total of 196 participants were enrolled (mean age 38.95 ± 7.93 years; 64.3% female; 73.0% rural residents). Fungal infections were most

common (32.7%), followed by eczema/atopic dermatitis (20.9%), psoriasis (19.9%), and acne (16.8%). Counselling exposure from community pharmacists was low in 15.3%, moderate in 67.3%, and high in 17.3% of participants, while knowledge levels were poor, moderate, and good in 16.3%, 58.2%, and 25.5% respectively. Medication adherence was low in 55.6%, medium in 35.7%, and high in 8.7% of participants. Counselling score and knowledge score both showed strong positive correlations with adherence score (Spearman coefficients ≈ 0.74 ; $p < 0.001$). Frequently reported barriers included fear of steroid side effects, confusion regarding order of product application, cost, unpleasant product characteristics, and multi-step regimens. **Conclusion:** Adherence to dermatological therapy in this community was suboptimal despite generally favourable patient satisfaction with pharmacist support. Strengthening simple, structured counselling by community pharmacists—focusing on treatment duration, correct application of multiple products, side-effect concerns, and practical regimen guidance—may improve patient knowledge, adherence, and clinical outcomes in dermatological disorders.

KEYWORDS: Community pharmacist; Dermatological disorders; Patient education; Medication adherence; Counselling; India.

INTRODUCTION

Dermatological disorders comprise a broad group of conditions affecting the skin, hair, nails, and mucous membranes, ranging from acute infectious diseases to chronic relapsing inflammatory and immune-mediated disorders. These conditions frequently present with visible lesions and symptoms such as pruritus, pain, and sleep disturbance, leading to substantial psychosocial burden and impaired quality of life despite relatively low mortality.^[1]

Global and India-specific burden-of-disease analyses indicate that skin and subcutaneous diseases contribute significantly to years lived with disability, driven by high prevalence, chronicity, and recurrent flares. In India, the pattern of skin disease is influenced by climatic diversity, overcrowding, hygiene practices, occupational exposures, and socioeconomic factors, with superficial fungal infections, eczema/atopic dermatitis, psoriasis, and acne commonly encountered in community and outpatient settings.

Management of dermatological disorders is often complex and predominantly topical, with systemic agents used for extensive or refractory disease. Multiple products, differing vehicles,

and multi-step regimens, together with the need for long-term or maintenance therapy, make correct and consistent medicine use challenging in routine practice. Evidence from dermatology consistently shows that non-adherence is common, influenced by regimen complexity, cosmetic acceptability, fear of adverse effects (especially topical corticosteroids), cost, and limited understanding of disease and treatment.

Patient education and counselling are therefore central to improving adherence and outcomes in dermatological care, particularly in settings where patients rely heavily on community pharmacies for information and support. Community pharmacists are often the first point of contact for patients seeking advice on skin problems and receiving dermatological prescriptions, placing them in a strategic position to reinforce correct medicine use, address misconceptions, and support self-management.

However, studies in dermatology and pharmacy practice suggest variability in the extent and quality of dermatology-related counselling provided in pharmacies, and limited community-based data from Indian settings link pharmacist education directly to adherence outcomes. The present study was undertaken to evaluate the role of community pharmacists in patient education and to examine how pharmacist-provided counselling and patient knowledge are associated with medication adherence among patients with dermatological disorders in and around Kumarapalayam, Tamil Nadu.

MATERIALS AND METHODS

Study design and setting

A community-based cross-sectional observational study was conducted over six months in community pharmacies located in and around Excel College of Pharmacy, Kumarapalayam, Tamil Nadu, India. The study focused on adult patients obtaining prescribed topical and/or systemic medications for dermatological disorders from participating pharmacies.

Study population and eligibility criteria

Adults aged 18 years and above with a physician-diagnosed dermatological disorder (such as fungal infections, eczema/atopic dermatitis, psoriasis, acne, urticaria, or scabies) who were receiving at least one dermatological medication from the selected community pharmacies and who provided written informed consent were included. Patients unwilling to participate or unable to complete the interview were excluded.

Sample size and sampling technique

The required sample size was calculated for a cross-sectional study with finite population correction, considering an estimated population of approximately 2500 eligible dermatology patients over the study period, 95% confidence level, 5% margin of error, and an expected proportion of 50%. The minimum required sample was 182; a total of 196 participants were finally recruited using convenience sampling at the participating community pharmacies.

Data collection tool and procedure

Data were collected by trained investigators using a structured, interviewer-administered questionnaire that had been developed after literature review and approved by the Institutional Review Board. The questionnaire consisted of the following sections.

- Socio-demographic characteristics (age, gender, education, area of residence)
- Clinical profile (type of dermatological disorder, type of therapy: topical, oral, or both)
- Community pharmacist-provided education and counselling (disease explanation, purpose of medication, method of application/use, dose and frequency, duration of therapy, side effects, precautions, storage, missed dose handling, follow-up/referral)
- Patient knowledge regarding their dermatological condition and treatment, scored and categorized as poor, moderate, or good
- Self-reported medication adherence using an 8-item adherence tool based on established self-report scales, with total score range 0–8 and categories of low (< 6), medium (6 to < 8), and high (8) adherence
- Perceived barriers to adherence (multiple responses allowed)
- Satisfaction with community pharmacist support.

Interviews were conducted face-to-face at the pharmacy premises in a manner that ensured privacy and confidentiality.

Ethical considerations

The study protocol and all data collection tools were reviewed and approved by the Institutional Review Board of Excel College of Pharmacy prior to study initiation. Written informed consent was obtained from all participants before enrolment, and anonymity and confidentiality of participant data were maintained throughout the study.

Statistical analysis

Data were entered into Microsoft Excel and analyzed using appropriate statistical software.

Descriptive statistics (frequency, percentage, mean, standard deviation) were used to summarize demographic variables, clinical characteristics, counselling exposure, knowledge levels, adherence categories, barriers, and satisfaction scores. Chi-square tests were used to assess associations between categorical variables, such as counselling level and adherence category, and knowledge level and adherence category. Correlation between counselling score, knowledge score, and adherence score was examined using Spearman and Pearson correlation coefficients; a p-value < 0.05 was considered statistically significant.

RESULTS AND DISCUSSION

Demographic and clinical characteristics

Among the 196 participants, the mean age was 38.95 ± 7.93 years, with the majority in the 30–39 years (40.8%) and 40–49 years (41.8%) age groups, indicating a predominance of middle-aged adults. Females constituted 64.3% of the sample and 73.0% of participants resided in rural areas, reflecting the semi-rural catchment of the participating pharmacies and suggesting that women may make greater use of community pharmacy services for dermatological care. Educational attainment was generally low, with most participants having no formal or only school-level education, which has implications for health literacy and the way counselling must be delivered.

Fungal infections, mainly tinea, were the most frequent dermatological disorders (32.7%), followed by eczema/atopic dermatitis (20.9%), psoriasis (19.9%), acne (16.8%), urticaria (5.1%), and scabies (4.6%). Nearly half of the patients were treated with topical therapy alone (46.4%), while 40.3% received a combination of topical and oral therapy and 13.3% received only oral medications, underlining the centrality of topical regimens and the potential complexity of multi-product treatment plans in this community setting.

These findings are consistent with published evidence that infectious and chronic inflammatory dermatoses form a major component of dermatology caseloads in India and that community-managed cases often rely on topical therapies, which are particularly vulnerable to adherence problems.

Community pharmacist counselling and patient knowledge

Overall exposure to pharmacist counselling was categorized as low in 15.3% of participants, moderate in 67.3%, and high in 17.3%. More than half of the patients reported receiving counselling on purpose of medication, method of application/use, dose/frequency, duration of

therapy, side effects, storage, and follow-up or referral, but a substantial minority either did not recall or were unsure about several of these elements, revealing variability and gaps in routine counselling practices.

Patient knowledge levels mirrored this pattern: 16.3% of participants had poor knowledge, 58.2% had moderate knowledge, and 25.5% had good knowledge regarding their dermatological condition and treatment. Item-wise analysis showed particularly low correct responses for treatment duration, consequences of irregular use, and handling of missed doses/applications, indicating that many patients lacked clear understanding of key aspects that directly influence adherence behaviour.

The coexistence of moderate counselling and moderate knowledge suggests that while community pharmacists do provide important information, education is often incomplete or insufficiently structured to ensure that critical concepts are fully understood by patients, especially those with lower educational levels.

Medication adherence and barriers

Medication adherence was generally poor in the study population: 55.6% of participants were classified as having low adherence, 35.7% medium adherence, and only 8.7% high adherence. These findings confirm that, even when effective therapies are prescribed and medicines are accessible in the community, real-world use often falls short of recommended regimens in dermatological disorders.

Patients reported multiple, overlapping barriers to adherence. The most frequently cited were fear of steroid side effects (19.4%), confusion about the order in which multiple products should be applied (18.4%), cost of medicines (16.8%), unpleasant or greasy feel and odour (16.8%), and the perception that there were too many products or steps in the regimen (14.8%).

Additional barriers included forgetfulness, busy schedules, and lack of clear or repeated instructions from healthcare providers.

These barriers align with previous literature highlighting that treatment complexity, cosmetic acceptability, financial constraints, and misperceptions about topical corticosteroids significantly influence adherence to dermatological therapies. The prominence of steroid fear and regimen confusion in this study underscores the importance of targeted pharmacist counselling on safe steroid use, regimen simplification where possible, and clear, step-wise

instructions.

Association of pharmacist counselling and knowledge with adherence

Higher levels of pharmacist counselling were significantly associated with better adherence categories. Participants who received low-level counselling were predominantly low adherers, whereas those who reported high-level counselling showed a greater proportion of medium and high adherence, indicating that more comprehensive counselling is linked to more favourable adherence behaviour. Correlation analysis confirmed a strong positive relationship between counselling score and adherence score, with Spearman and Pearson coefficients around 0.72–0.74 ($p < 0.001$).

Similarly, patient knowledge level was strongly associated with adherence; poor knowledge was associated mainly with low adherence, while good knowledge was associated with a shift towards medium and high adherence. Knowledge and adherence scores showed a strong positive correlation (coefficient ≈ 0.74 ; $p < 0.001$), reinforcing the central role of understanding in sustaining regular medicine use.

Taken together, these findings support a plausible pathway in which structured pharmacist counselling improves patient knowledge, which in turn enhances adherence to dermatological therapy. In a context of low literacy and high reliance on community pharmacies, such a pathway is particularly relevant and highlights a practical opportunity for intervention.

Overall interpretation

The results demonstrate that community pharmacists already play a significant but under-optimized role in dermatological care in this semi-rural Indian setting. Patients report moderate satisfaction with pharmacist support, yet counselling is often incomplete and knowledge gaps remain, contributing to low adherence and ongoing disease burden. Strengthening pharmacist training in dermatology, standardizing counselling content, and using simple visual aids or written instructions tailored to local literacy levels may be effective strategies to improve adherence and, ultimately, dermatological outcomes in the community.

CONCLUSION

In this community-based cross-sectional study from in and around Kumarapalayam, most patients with dermatological disorders who attended community pharmacies exhibited moderate exposure to pharmacist counselling, moderate knowledge, and low adherence to

prescribed therapies. Strong positive associations between counselling, knowledge, and adherence underline the pivotal role of community pharmacists in supporting effective and sustained use of dermatological medications.

Addressing specific knowledge gaps on treatment duration, consequences of irregular use, sequence of multiple products, and safe use of topical corticosteroids, together with tackling practical barriers such as cost and cosmetic acceptability, is essential to improve adherence. Implementing structured, concise counselling protocols and reinforcing messages during repeat visits could meaningfully enhance treatment continuity and outcomes in common dermatological disorders managed in community settings.

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