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The Role of Dermatology Physicians in Enhancing Medication Adherence in Dermatologic Care

Abstract

According to current estimates, medication non-adherence has resulted in over $100 billion in avoidable medical expenses and at least 100,000 avoidable fatalities. With over 50% of patients stopping topical therapy within the first year, adherence is especially bad for dermatological diseases. Among the most approachable medical experts, chemists have the power to significantly reduce pharmaceutical non-adherence through better access to treatment, medication therapy management, and patient education. The purpose of this review was to ascertain how chemists have enhanced medication adherence in dermatology and to talk about ways to get more involved. In order to assess clinical research published within the last 20 years that have assessed the function of chemists and their influence on adherence to dermatological products, a thorough review of the medical literature using the PubMed database was carried out. "Pharmacists' role in dermatologic medication adherence," "pharmacist-led interventions in dermatology," "pharmacist medication adherence dermatology," and "pharmacist intervention dermatology" are some of the search terms that may be found in PubMed. Eighteen pertinent studies in all were found. By expanding access to pharmaceuticals, offering medication counselling programs, and providing treatment monitoring services, chemists enhanced dermatological medication adherence. Nonetheless, chemists' reluctance to offer corticosteroid over-the-counter medications may be influenced by corticophobia. Pharmacists are easily available medical professionals who may help increase adherence to dermatological medicine. Pharmacists' understanding of dermatological products may be improved by future advanced training in dermatology drugs.

Keywords: Pharmacists, Medication Adherence, Dermatology.

Introduction

Adherence refers to a patient's participation in health-related behaviors, such as taking prescribed drugs, going to follow-up visits, and altering their lifestyle (1,2). Poor communication or education, medical comorbidities, medication interactions, regimen length, and complexity are among factors that can hinder adherence [1,3–10]. Non-adherence is particularly common in dermatology, which includes a wide range of systemic and topical treatments for various skin disorders [1,11–13].

Application time, excessive or insufficient application, an unpleasant smell, discomfort, poor aesthetic qualities, and dirty, sticky, or oily vehicles are all obstacles to adherence [1, 2, 6, 12, 14–17]. Lesions frequently have inadequate coverage [1]. Long-term adherence is significantly worse than short-term adherence [2,11,12,18]. Psoriasis comorbidities, such as depression (10–62%) and cardiovascular disease, might result in polypharmacy and complicated regimens, which have a poor correlation with adherence [14].

Access to prescriptions, cost, and health literacy are some of the factors that affect medication non-adherence, which is the degree to which patients take their medications as directed [1]. About 50% of patients with chronic illnesses were found to not adhere to their treatment plans, which is thought to have contributed to at least 100,000 avoidable deaths and more than $100 billion in avoidable medical expenses per year in the US [2]. Poor treatment outcomes, such as an increase in all-cause hospitalisations and all-cause death for a variety of illnesses, are also linked to non-adherence to prescribed medicine [3-5].

On the other hand, a 21% lower risk of death is linked to effective drug adherence [3]. A multimodal strategy helps patients overcome obstacles to medication adherence and achieve better clinical outcomes, given the significance that appropriate medication usage plays in improving patient outcomes and lowering health care costs [6]. Despite the development of numerous health interventions, treatment adherence is still difficult to achieve.

In both high- and low-income nations, dermatological disorders are a major contributor to the global illness burden [7,8]. The United States also has a high frequency of dermatological diseases; in 2013, around 85 million Americans visited a doctor for at least one cutaneous illness, resulting in direct medical expenses of more than $75 billion [9]. With more than 50% of patients stopping topical medication during the first year, adherence to topical treatment regimens for psoriasis is appalling. In cases of vitiligo, acne, hair growth problems, and persistent dermatitis, medication adherence is comparatively low [10].

Since the majority of dermatoses are chronic, following treatment plans is likely to improve public health outcomes, including the course of the illness (from psoriasis to psoriatic arthritis, or from acne to scarring), as well as lower health care costs. Dermatological drug adherence is particularly difficult because popular dermatology medications come in multiple dosage forms; also, treatments are multimodal, with a significant fraction including a mix of topical, oral, and parenteral agents. A significant percentage of recommended drugs are topical, and adherence to these drugs is very low [9,11]. Forgetfulness, discomfort, and worries about side effects are common causes of poor topical medicine adherence, which has resulted in early discontinuation [12].

Treatment duration, treatment efficacy, patient health literacy, treatment regimen complexity, drug administration routes, and accessibility of care are additional factors influencing medication adherence in dermatology [13, 14]. Various reminder methods, appropriate medication use, and educational interventions are strategies for increasing adherence [14].

Drug adherence in illness management is enhanced by patient-specific elements such a supportive setting, knowledge of appropriate drug administration, and customised medication-taking practices [15]. Through interprofessional teamwork, a truly interdisciplinary strategy utilising a variety of health-care resources may improve drug adherence.

Through patient education and other means, chemists, who are among the most approachable medical professionals, can enhance medication adherence [16]. By analysing prescription regimens, tracking medication use, assessing efficacy, and creating patient care plans, registered chemists (RPhs) are legally allowed to coordinate drug therapy management [17]. Pharmacists also conduct motivational interviews and medication counselling, remind patients to pick up their prescriptions, arrange refills and assist with prior authorisations (PAs) [18, 19].

Health insurance companies employ PAs, an utilisation management method, to pay for prescription drugs that need previous doctor's clearance. Medication therapy management (MTM) chemists offer patient-centered care based on a personalised evaluation of the patient's whole health profile, as opposed to merely distributing prescription drugs. Medication reconciliation, drug interactions, lab test monitoring, drug utilisation review, and medication counselling are among the MTM services provided by a chemist [20].

Involving chemists in medical care can save money. Ambulatory care pharmacist-led services have reduced hospital admissions, avoided ED visits, and saved about $650,000 in medical

expenses annually [21, 22]. By navigating insurance coverage of pharmaceuticals and using manufacturer's patient support programs to obtain discounts for medications, they not only improve medication access but also help patients ensure the affordability of medications.

Patients' health outcomes increase and medication utilisation is improved when community chemists and patients have productive interactions [23]. The function of pharmacists in dermatology has not been evaluated, despite the fact that pharmacist-led interventions have affected drug adherence in other medical specialities. The purpose of this review was to ascertain how chemists have enhanced medication adherence in the dermatology sector and to talk about ways to get more involved.

Research Methods

Using PubMed, a thorough literature search was conducted to find studies assessing the pharmacist's function and influence on dermatological product adherence. "Pharmacists' role in dermatological medication adherence," "pharmacist-led interventions in dermatology," "pharmacist medication adherence dermatology," and "pharmacist intervention dermatology" were among the PubMed search phrases used.

Only publications of randomised clinical trials, observational studies, case reports, case series, and literature reviews that were released during the previous 15 years were included in the authors' search. For a chemist to be included in this review, they must have led or participated in an intervention with a patient. A measure of a medication adherence-related endpoint, either as a primary or secondary research endpoint, must have been included in eligible studies. As long as the chemist's intervention was for a dermatology-related issue, there were no restrictions on the kind of intervention that may be used with any patient population.

The study name, study type, sample size, intervention or RPh role, primary endpoint of the study outcomes, and major study conclusion or conclusions were among the parameters of interest included (Tables 1 and 2). The kind of chemist intervention and its effectiveness in improving medication adherence were important outcomes of interest.

Table 1: An overview of a few clinical studies evaluating chemist treatments for topical and/or oral therapy

Study	Study type, sample size	Intervention/ RPh role	Primary endpoints	Results of interest	Study conclusion(s)
Penick et al.[24]	Retrospective chart review, 21 pre-intervention patients, 27 post- intervention patients	Embedded PGY2 in dermatology clinic	Time to initiation of medications, adherence, adverse events, prescription output	Time to initiation: 13.5 days post-intervention vs. 21.3 days pre-intervention ($p = 0.41$) Adherence: 93.14% post-intervention, 99.21% pre-intervention ($p = 0.22$) AEs: 7.4% post-intervention and 15% pre-intervention Prescription volume: Increased 28.87%	Pharmacist involvement in dermatology care reduced time to medication initiation and increased prescription volume
Kamei et al.[25]	Retrospective survey analysis, 1739 patients	Impact of communication with pharmacist on adherence	EQ-5D-5L and WPAI scores, adherence scores, factors influencing adherence	Median EQ-5D-5L and WPAI score was lower in AD than controls ($p < 0.005$) Adherence scores: higher with greater Health literacy and with those satisfied with communication with provider Survey: Patients place greater importance on communication with physicians (74.4%) than pharmacists (57.5%) Physicians provide more information to patients (70.0%) than pharmacists do (57.7%)	Higher patient health literacy and satisfaction with communication with the PCP may improve adherence
Salamzadeh et al.[26]	Prospective survey, 200 patients	Validated questionnaire (ECOB) administered to evaluate adherence to topical/oral therapies	Treatment adherence, possible associated factors	Overall adherence: 15% Factors associated with medication adherence: Food exacerbations and severity of disease ($p = 0.03$)	Medication adherence in acne vulgaris was low, ECOB questionnaires may guide adherence
Hu et al.[27]	Quality improvement project, 431 patients	Clinical dashboard for TNF-α inhibitor therapy	Safety and adherence monitoring	Total safety flags: 304 Breakdown of safety flags: 9% overdue lab tests, 27% overdue refills, 6% ED visits, etc	Pharmacist led clinical dashboard programs should be used in conjunction with collaborative practice programs
Hecht et al.[28]	Retrospective analysis, 677 pharmacy PA requests 66 office requests	Community-based specialty pharmacy PA filling	Time to first PA decision, time to PA approval and time to first medication fill	Mean time to PA decisions: 1.9 days pharmacy vs. 20.9 days dermatology office ($p < 0.001$) Mean time to PA approval 1.9 days pharmacy vs. 14.7 days for providers ($p < 0.001$) Mean time to first fill: 6.6 days pharmacy vs. 16.2 days for providers office ($p < 0.001$) Mean time from approval to fill: 3.5 days pharmacy vs.	Pharmacies can improve medication access by expediting the prescription filling process
Castaneda et al.[29]	Observational prospective study, 63 children	Development of extemporaneous formulation and counseling to parents	Adherence, medication therapy problems	Total medication problems: 49 Type of medication error: 18.4% had inadequate dose, 16.3% were non-adherent to treatment, 14.3% had AEs Pharmacist interventions: Counseling on adherence (20%), detection of AEs (11.4%) and adjustment of dose (22.9%)	Pharmacist medication counseling increases adherence and lowers AEs
Ubhi et al.[30]	Retrospective observational study, 506 prescriptions	Antibiotic prescribed, duration of treatment, indication and route of administration	Proper prescription indication and duration across providers	Indications and duration of therapy: Documented in 36.8% and 91.9% of prescriptions, respectively Dermatology prescriptions: 34.3% had an indication and 100% had duration Adherence to antibiotic guidelines was 98%	Dermatology prescriptions specified duration but often lacked indication
Konuru et al.[31]	Prospective observational study, 148 cases	Assessed reasons for drug related problems	Reason for drug-related problems	Types of drug-related problems: Nonadherence (50.9%), AEs (38.4%) Cause of drug-related problem: Patient related (47.16%), patient caretaker (17%), with pharmacist and patient (4.4%) Skin diseases: 6.3% of ADRs and 6.3% of non-adherence	Non-adherence was the drug-related problem causing the highest rate of hospitalization
Nguyen et al.[32]	Retrospective cohort pilot study, Pre-intervention 880 prescriptions, Post-intervention 941 prescriptions	Multistep order transmittal pharmacy service	Re-prescribing rate, reasons for re-prescribing	Re-prescribing rate: decreased from 12.73% (pre-intervention) to 9.56% in the post-intervention group ($p = 0.03$) Reasons for re-prescribing: Modifying destination pharmacy decreased from 6.25% to 0.64% (post-intervention group) ($p < 0.01$). Re-prescribing due to errors increased from 0.68% to 1.70% ($p = 0.05$) and re-prescribing due to patient preferences increased 0.91% to 2.55% ($p = 0.01$)	Pharmacist led multistep order transmittal programs reduced re-prescribing burden
Albright et al.[33]	Retrospective chart review, 68 patients	Centralized specialty medication management service by clinical pharmacists	Recruitment/retention of patients, follow-up appointments, interventions	Enrolled in service: 79.4%, and 95.5% had follow-up Clinical interventions: 161 total: patient education (17.4%), technique corrections (7.5%) administrative assistance (33.5%), medication regimen changes (6.8%)	Centralized medication management services using pharmacists contributed to safe and effective medication use
Tucker[34]	Prospective questionnaire, observational study, 870 pharmacists	Dermatology related medication use reviews (MUR) and confidence	Percent undertaken a dermatology MUR, confidence level of dermatology MURs	MUR experience: 44% of pharmacists conducted a dermatology MUR. Mean confidence rating: 3.5 (SD 1.0)	Pharmacists routinely undertake dermatology MURs with confidence
Masago et al.[35]	Prospective questionnaire observational study, 51 patients	Multimodal rash management team	Rate of toxicity using TKIs, QOL scores	Number of patients with high-grade skin toxicities: Decreased post intervention Total DLQI QOL scores: Increased post-intervention	Pharmacists improve drug safety in rash management teams

Table 2: An overview of a few clinical studies assessing pharmacist interventions for topical treatment

Study	Study type, sample size	Intervention/RPh role	Primary endpoints	Results of interest	Study conclusion(s)
Yamaura et al.[36]	Prospective interventional study, 6 patients	Electronic scale	Total weight change of tube	Change in tube weight through 1 month: 0.05–0.18 g/week. Weekly change in tube weight: 0.30–0.42 g	Pharmacists can measure topical efinaconazole treatment using portable electronic scales
Sato et al.[37]	Interventional study, 146 patients	Pharmaceutical instruction video	Amount of topical preparation used	Topical medication usage: 9.8 g/day post-intervention vs. 4.5 g/day and 5.5 g/day in the two control groups, respectively ($p < 0.001$)	Pharmacist provided visual instructional media improved treatment adherence
Cheong et al.[38]	Prospective questionnaire based observational study, 32 pediatric patients	Pharmacist counseling on caregivers	Impact of counseling service, satisfaction	Caregivers' knowledge score: Higher score post-counseling compared to pre-counseling ($p < 0.001$)	Pharmacist- led eczema counseling can improve medication adherence
Kaneko et al.[39]	Prospective questionnaire based observational study, 548 responses	Pharmacist counseling instructions	Common instructions on topical administration given	Counseling tips: Medication administration (86%) frequency of administration (68%), small application use (45%), AEs (52%), brochures (27%)	Pharmacists that are aware of AD guidelines offer more counseling advice
Lambrechts et al.[40]	Prospective survey study, 441 questionnaires	Assessed corticophobia, thoughts on corticosteroid use	TOPICOP score results	Pharmacists TOPICOP score was 48.5 ± 13.9% Comparison: pharmacists TOPICOP was higher than dermatologists ($p < 0.001$), pediatricians ($p < 0.001$), but not general practitioners ($p = 0.580$)	Pharmacists and GPs had the highest corticophobia, potentially due to insufficient knowledge of topical corticosteroids
Farrugia et al.[41]	Cross-sectional survey, 201 respondents	Assessing pharmacist messages regarding corticosteroids	Beliefs and messages regarding corticosteroids from pharmacists	Approximately 76.6% of respondents consistently received messages regarding corticosteroid risk from GP and/or pharmacists Respondents were told to try alternative therapies before corticosteroids more by pharmacists than GPs ($p = 0.039$)	High rates of topical corticosteroid risk from GPs and pharmacists may lead to medication non-adherence

Research Results

94 distinct studies were found using a PubMed literature search. Eighteen researches were considered in this analysis after studies that did not address dermatological medications or conditions assess an aspect of adherence, or feature a direct pharmacist-led intervention were excluded. Retrospective chart analyses and prospective questionnaire observational studies made up the majority of the included research. The influence of the chemist on enhancing medication adherence and important adherence outcomes was measured by the search results (Tables 1 and 2).

Medication adherence was enhanced by a number of pharmacist-led initiatives. Compared to the pre-intervention group (which lacked a pharmacy resident), pharmacists demonstrated

proficiency in reducing adverse event rates, increasing prescription productivity, and improving time to commencement of drugs (13.5 vs. 21.3 days) through a pharmacist-resident-led service [24].

Furthermore, compared to dermatology office-based clinics, the pharmacy was more effective at handling PA requests and enhancing medication access, reducing the mean time to first fill (6.6 vs. 16.2 days for providers office) and the mean time to PA decisions from 20.9 to 1.9 days ($p<0.001$) [28].

Pharmacies were better prepared to deal with insurance PAs for quicker access to pharmaceuticals, even if there was no difference in the meantime from approval to fill time in pharmacies by provider office-led PA fillings. Furthermore, pharmacy-led, multistep order transmittal systems had significantly lower re-prescribing rates (0.64%) than those that did not (6.25%) as a result of needing to change destination pharmacies ($p<0.01$) [32].

Additionally, re-prescribing rates were much lower in these transmittal pharmacy services (9.56% vs. 12.73%, $p = 0.03$). Initiatives spearheaded by chemists also assisted in identifying areas where provider prescribing might be improved. For example, 34.3% of antibiotics prescribed by dermatologists did not include the indication, although 100% did mention the duration [30].

The impact of medication counselling and better patient education on appropriate drug use, especially with topical treatments, is another component of proper medication adherence. Compared to the control groups that did not view the video, patients who watched a pharmacist-administered instruction video on topical drug usage improved their medication use ($p < 0.001$) [37].

The effectiveness of counselling for cares of children with atopic dermatitis was evaluated in a related intervention. When compared to the scores prior to the counselling session, the knowledge score and confidence level regarding managing their child's symptoms were improved ($p<0.001$) (38). Every week, chemists used computerized scales to weigh the drug container in order to evaluate treatment adherence for topical medications [36].

Prospective questionnaire-style surveys revealed that chemists had advised patients about the application site, frequency, and side effects; however, fewer respondents mentioned counselling regarding the use of supplemental brochures or using small amounts of medications to prevent side effects for topical therapies [39]. Pharmacists have been able to improve topical medication education by teaching patients proper medication application skills and offering administrative support for patient medication access through pharmacist-included medication management services [33].

Corticophobia may make pharmacist topical therapy drug adherence campaigns more difficult. Pharmacists reported greater levels of corticophobia than dermatologists (p0.001), and they were more likely than general practitioners (GPs) to advise patients to consider alternatives to corticosteroids first ($p=0.039$) (40,41).

Furthermore, fewer than half of chemists (44%) had performed a medication use review (MUR) in dermatology and were only moderately confident in their ability to do so [42]. The chemist was occasionally accountable for a drug-related issue (4.4%), but this was far less frequently than the patient (47.16%) or carer (17%) [31]. When it comes to drug adherence and treatment monitoring for systemic pharmacological therapies, chemists may be quite important. Questionnaires administered by chemists to evaluate topical and oral therapy

Similarly, pharmacist-led clinical dashboard projects include medication safety and adherence monitoring. These pharmacist-led initiatives assisted in identifying patients who were past due for laboratory testing (9%) or refills (27% using TNF-et inhibitors) [27].

Tyrosine kinase inhibitor medication-related high-grade skin toxicities were less common when chemists participated in treatment monitoring programs [35]. Pharmacist-led interventions also frequently included pharmacist counselling on dose modifications and adherence to topical and systemic treatments [29].

Despite the fact that pharmacists are easier to reach than doctors, patients valued communication with doctors more than they did with pharmacists, and they said doctors gave them more information than pharmacists [25].

By addressing prior authorization requests, managing medication administration, and guaranteeing medication appropriateness, chemists increase patient access to prescription drugs [24, 28, 29]. Pharmacists addressed any remaining questions and provided patients with effective advice regarding pharmaceutical use and side effects [29, 33, 37, 38, 39]. Additionally, they enhance drug adherence by conducting MURs, identifying patients who are past due for a refill, and monitoring treatment using surveys [26, 33, 42].

Pharmacists' preconceptions about certain drugs, such corticosteroids, may affect care even though they assist in making sure patients receive the appropriate dosage. Pharmacists had greater rates of corticophobia than other medical professionals, which affect how they counsel patients about their medications [40, 41]. Pharmacists continue to improve patient clinical outcomes in spite of these provider biases.

Dermatological conditions are common, and many patients seek pharmacist advice on skin condition management routinely, with many pharmacists making at least one dermatological recommendation per day [42]. Not only do pharmacists assist patients in educating them on taking their medications, but they also recommend over-the-counter (OTC) medications for common conditions, including acne, tinea, mild eczematous dermatitis, and xerosis [43, 44].

Patients also place a greater importance on communication with physicians than pharmacists, which may contribute to a lack of communication between the pharmacist and patient [25]. By taking a more active role in educating patients about their skin disease, pharmacists may close such pharmacist-patient communication gaps.

Pharmacists' reluctance to recommend over-the-counter corticosteroids may be influenced by corticophobia. The high prevalence of corticophobia among chemists may be partly attributed to a lack of information about the exact safety risk profile of topical corticosteroid treatment. Pharmacists may be reluctant to offer over-the-counter corticosteroids due to the serious side effects of high potency and chronic topical corticosteroid use, such as skin infections, folliculitis, and skin irritation.

Additionally, rather than suggesting a topical over-the-counter corticosteroid, chemists may direct the patient to a doctor for a more comprehensive evaluation of their health due to these possible risks and probable overuse of corticosteroids. It is possible to reduce unfavourable attitudes and worries about topical corticosteroid use by educating providers.

Pharmacists are now better equipped to advise patients and make more sensible recommendations thanks to initiatives to educate them about the use of topical corticosteroids [45]. Through patient education, it may be possible to increase patient adherence by reiterating

medication counselling points and drug information and motivating chemists to actively participate in patients' skin condition management.

Dermatology does not currently have any advanced certifications, despite the fact that there are over ten distinct pharmaceutical board subspeciality licenses [46]. This could limit chemists' access to further training in dermatological-related domains and have an impact on their understanding of dermatology drugs.

Costs related to adverse drug reactions and adverse drug events are also decreased by the chemist's influence on prescription errors, improper prescribing, and adverse event prevention. Preventable adverse medication responses cost $2000–$2500 per individual and account for 6.5% of admissions, with a median bed stay of 8 days [47, 48]. Medication mistakes are decreased through prescriber education, pharmacist cooperation, and pharmacist-led medication reconciliation [49]. Through pharmacist-led training activities, which successfully lower medication mistake rates, pharmacists also enhance the education of other healthcare professionals [50, 51].

Improving patient outcomes and communication can be achieved by combining the pharmacist-physician connection. Multifaceted issues like medication adherence and collaboration may be best addressed by raising awareness of and emphasizing the value of inter-professional collaboration.

Since many patients find that administering topical medications is more challenging than taking oral medications, topical therapy medication adherence rates are lower than systemic therapy [52]. Furthermore, a patient's topical treatment may be complicated by corticophobia, or anxiety

when using corticosteroids, which may also impair the percentage of topical medication adherence [53].

Poor drug adherence rates are also caused by other variables, including topical therapy costs, medication features and side effects (such as skin irritation), application complexity, frequency and duration, and other factors [54]. By offering counselling programs and seeing cost-cutting options, chemists can increase topical drug adherence [36, 37, 39, 44]. Future educational initiatives will assist pharmacists in reducing corticophobia in patients as well, given the high prevalence of corticophobia among pharmacists.

To measure and standardise drug adherence, more objective criteria are required. Recently, dermatology patients have begun using the Morisky Medication Adherence Scale-8, which was created to assess medication adherence for a variety of conditions, such as diabetes and hypertension [53].

This survey gathers information on demographics, drug type (topical or oral), adherence rates, adverse events, and hospital visits. According to the adherence scale's preliminary findings, adherence to topical and oral medications is correlated with age, the frequency of hospitalisations, individual experiences with the efficacy of drugs, and general treatment satisfaction. According to one study, adherence to topical formulations is lower than that of systemic drugs [53].

Future treatment monitoring and adherence assessments will be more accurate if a standardized medication adherence assessment method is developed. These measures can be used to monitor improvements in dermatological treatment rates over time and evaluate the effects of chemist and other provider-led initiatives. Factors influencing topical adherence may also be evaluated

by other instruments, such as the Patient Preference Questionnaire and the Topical Therapy Adherence Questionnaire [54]. To determine the efficacy of these instruments and compare studies of such questionnaire-based metrics, more research evaluating validated adherence assessment metrics across a range of dermatological illnesses is required.

This study has certain drawbacks. A PubMed search was used to find pharmacist-led interventions in the treatment of dermatological conditions for this review. Many of the research found were prospective surveys or retrospective chart reviews with few interventional studies and no clinical trials, despite the fact that the search yielded helpful information about the role of the chemist in dermatological patient care.

Some of these interventions—such as clinical dashboards, electronic balances, and pharmacy residents—have not undergone extensive evaluation and might not be financially viable in all healthcare facilities.

Furthermore, few studies assessing the role of chemists in lowering healthcare costs in dermatology-specific domains were found. This reduces the risks associated with the cost-benefit analysis of adding a specialist to a patient's regular dermatological care.

Conclusion

Pharmacists are vital, approachable medical professionals who can greatly enhance patients with dermatological disorders' adherence to their prescription regimens. They guarantee patient education, facilitate pharmaceutical availability, and oversee treatment therapy. They aggressively recommend over-the-counter medications and frequently respond to enquiries from patients about managing their conditions.

Although chemists are well-equipped to improve dermatological treatment, future educational initiatives can be implemented to eliminate corticophobia, guarantee proper medication education, and boost trust in dermatological medication monitoring. Pharmacists' expertise and confidence in managing dermatological conditions may be further enhanced by future advanced certification training in dermatology, such as that offered by the Board of Pharmacy Specialists.

MTM Pharmacist and Teamwork Practice When possible, agreement programs can minimize pharmaceutical errors and enhance patient dermatological outcomes. Pharmacists can significantly reduce medication non-adherence and medical expenses associated with patients' dermatological care.

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