An-Najah National University

Faculty of Graduate Studies

COMMUNITY PHARMACISTS' PERCEPTIONS AND ROLE IN THE MANAGEMENT OF COMMON DERMATOLOGICAL PROBLEMS IN PALESTINE: A CROSS-SECTIONAL STUDY

By

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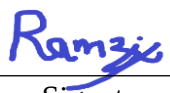
Prof. Ramzi Shawahna	
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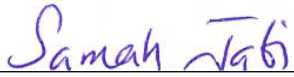
Dr. Samah Al-Jabi	
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Dedication

This thesis is lovingly dedicated to my family and friends, whose unwavering support and encouragement have been a constant source of strength throughout this journey.

To my parents, thank you for your unconditional love, sacrifices, and belief in me, even during the most challenging times. Your guidance and care have shaped who I am today, and for that, I am eternally grateful.

To my siblings, for always cheering me on and reminding me to stay grounded, your companionship has been invaluable.

To my dearest friends, thank you for your patience, understanding, and endless encouragement. Your presence made the difficult moments more bearable, and your belief in my potential pushed me to keep striving.

This work is as much yours as it is mine.

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Lastly, I would like to extend my sincere thanks to my friends and colleagues for their encouragement, patience, and unwavering belief in me. Your companionship and motivation have made this journey more manageable and fulfilling.

Zohdeya Salah

Declaration

I, the undersigned, declare that I submitted the thesis entitled:

COMMUNITY PHARMACISTS' PERCEPTIONS AND ROLE IN THE MANAGEMENT OF COMMON DERMATOLOGICAL PROBLEMS IN PALESTINE: A CROSS-SECTIONAL STUDY

I declare that the work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's Name: **Zohdeya Salah**

Signature: 

Date: **10/09/2024**

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COMMUNITY PHARMACISTS' PERCEPTIONS AND ROLE IN THE MANAGEMENT OF COMMON DERMATOLOGICAL PROBLEMS IN PALESTINE: A CROSS-SECTIONAL STUDY

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Abstract

Background: This study aims to explore the perceptions and role of community pharmacists in the management of common dermatological problems in Palestine.

Methods: A cross-sectional study was conducted in community pharmacies across the West Bank of Palestine, using a questionnaire for data collection.

Results: A total of 385 pharmacists completed the questionnaires. Female pharmacists ($p = 0.043$), those with 10+ years of experience ($p = 0.035$), who took a dermatology course during training ($p = 0.045$), and saw 10+ dermatological cases weekly ($p = 0.017$) made significantly more referrals compared to male pharmacists, those with less than 10 years of experience, who did not take a dermatology course, and saw fewer than 10 dermatological cases weekly.When the community pharmacists were asked to rate their confidence in providing education/counseling to patients with dermatological issues on a scale of 1-5, the median score was 3.0 [IQR = 2.0, 4.0]. Acne (93.2%), dry skin (84.2%), nail problems (80.0%), and fungal infections (73.2%) were the most commonly encountered dermatological problems. combination products containing antibiotics/antifungals/steroids (87.8%), topical antibiotics (70.4%), topical steroids (58.7%), and topical retinoids (53.5%) were the most commonly dispensed dermatological products. The majority of the community pharmacists agreed or strongly agreed that they should be consulted by patients with dermatological conditions (67.2%), they have a valuable role in assisting patients with dermatological conditions (71.4%), they are an important source of advice/counseling/education on medications

use for dermatological conditions (69.6%), and the pharmacy-based dermatology services are helpful for patients with dermatological conditions (53.3%).

Conclusions: The study found that community pharmacists in Palestine provided patient care and frequently referred patients with complex dermatological issues to dermatologists, especially when prescription products were needed.

Keywords: Community pharmacist, Community pharmacy, Dermatology, Skin diseases, Attitude, Perception

Chapter One

Introduction and Theoretical Background

Skin diseases are common health issues that affect (30%) to (70%) of the global population (1, 2). Skin conditions are among the major causes of patients' complaints, with roughly one-third of the world's population suffering from at least one dermatologic disorders (3). Skin problems are the most prevalent cause for contacting general practitioners with a new concern, according to a recent survey, accounting for nearly 13 million general practitioner consultations in the UK each year (4).

Many persons with symptomatic skin disorders do not see a doctor and instead seek self-care. According to a recent survey, pharmacists supplied the first over-the-counter medication for (39%) of persons with dermatological disorders. Patients are frequently happy with pharmacists' dermatological advice, and their efforts have been found to be cost-effective in some contexts. Although skin diseases are common and their effects are clearly visible, the burden caused by these diseases is often underestimated (5). This could be attributed to the fact that most skin diseases are not life-threatening. However, skin diseases are known to cause significant deteriorations of the quality of life of the patients (5, 6). Despite these deteriorations, a considerable proportion of patients either do not seek treatment at all or do not consult dermatologists (7). On the other hand, many patients seek self-care or consult community pharmacists.

Community pharmacies are easily accessible healthcare establishments that are run by community pharmacists who are highly educated and trained healthcare providers (8, 9). In different healthcare systems, community pharmacists are in key position to provide care services to patients including those with dermatologic illnesses (10). For many patients, community pharmacists are the first point of contact for many minor aliments including dermatological health issues (11, 12).

The International Pharmaceutical Federation and the World Health Organization have called for the expansion of the roles of community pharmacists beyond dispensing pharmaceutical products. Today, community pharmacies are considered healthcare establishments in which community pharmacists provide a wide array of pharmaceutical services including direct patient care. These services are primarily designed to improve medication therapy and achieve optimal patient outcomes (13, 14).

Previous studies have shown that community pharmacists can play key roles in providing care to patients with dermatological health issues (11, 15-18). These studies have reported that a considerable proportion of the patients who purchased pharmaceutical products also sought consultations from community pharmacists about their dermatological health conditions (18). Accessibility, trust, familiarity were the most commonly reasons behind consulting the community pharmacists about dermatological health conditions that were cited by the patients (19).

However, there is minimal formal dermatologic education or post-graduate study available in pharmacy schools (10, 20). Furthermore, dermatologists and pharmacists have recognized patient care boundaries, which are mostly owing to a lack of contact between the two professions. Lack of dermatology knowledge, lack of availability of continuing education/training, being unsure of diagnosis, and insufficient time to effectively interact with the patients were the most commonly cited barriers that limited the roles of community pharmacists in caring for patients with dermatological health conditions (19, 21).

For many patients with moderate dermatological problems, pharmacists are often the first source of information when it comes to over-the-counter therapy options. They may decide to take on the task of deciding whether a patient will benefit from over-the-counter medicine or should be sent to a primary care physician or dermatologist. They are, in any case, a crucial part of the health-care team (22, 23).

When pharmacists assisted in a nationwide initiative to enhance pharmaceutical treatment for patients with skin disease in Sweden, the total dermatological health cost burden was reduced by (5–10%) (24).

Many pharmacists have inadequate training in treating patients with dermatologic disease, and many may not feel comfortable participating in dermatologic care, due to vast variations in the depth and breadth of knowledge about skin disease among pharmacists.

According to the conclusions of a research conducted in the United Kingdom, pharmacists' responsibility is to choose the correct course of treatment for the patient.

Nonetheless, a perceived lack of dermatological knowledge and training is a key obstacle to pharmacy-supported self-care of symptomatic skin conditions (25).

Patients in Lebanon consult pharmacists first for drug counseling and guidance on minor health issues, according to (90%) of pharmacists (26). According to several studies, community pharmacists are in a unique position to play a bigger role in the care and education of patients with skin conditions, resulting in better health outcomes (27).

To acquire a better knowledge of community pharmacists' care for patients with skin diseases, it is vital to look at pharmacy staff perceptions of their job as well as their perspectives on the benefits and drawbacks of addressing such issues in community pharmacies altogether with the knowledge of these pharmacists.

1.1 A Brief Literature Review

1.1.1 Related Studies Conducted in Palestine

Acne vulgaris is a prevalent dermatological condition impacting about (85%) of adolescents. Individuals with acne vulgaris typically visit neighborhood pharmacies in the initial phases of their condition. In the West Bank of Palestine, a study was conducted to evaluate the knowledge, attitudes, and practices of community pharmacists about acne vulgaris treatment in the West Bank, Palestine (28). This research was a cross-sectional study utilizing a questionnaire. The questionnaire comprised four sections: 1) demographic information, 2) knowledge assessment, 3) attitude and practice items concerning causes, and 4) therapeutic alternatives and counseling in the management of patients with acne vulgaris. This study employed a convenience sampling strategy. Parametric and non-parametric tests were employed to compare various concerns as deemed acceptable. P values less than 0.05 were deemed significant. A total of 270 community pharmacists were surveyed, with over half (54.1%) identifying as male. The study indicated that community pharmacists possessed insufficient information regarding the management of acne vulgaris; merely (7.7%) exhibited high levels of competence. Pharmacists have a favorable disposition towards acne vulgaris management; yet, their treatment practices reveal insufficient understanding, as only (10%) of participants managed acne vulgaris autonomously without referral. Pharmacists possessing less expertise exhibited fivefold more referrals compared to their knowledgeable counterparts (OR: 5.3; $P < 0.001$), whereas

individuals with a bachelor's degree demonstrated threefold more referrals than those with postgraduate qualifications (OR: 3.3; P < 0.001). There is a necessity to enhance the dermatological expertise of community pharmacists and to motivate their participation in organized training programs on the management of acne vulgaris.

Acne vulgaris is a prevalent dermatological condition globally and induces significant suffering in individuals. Furthermore, the majority of individuals with acne have diminished self-esteem and social isolation. A study was conducted to evaluate the prevalence of acne and its effects on the quality of life of medical students (29). It also assesses the patterns of self-treatment utilization. The study population comprised all medical students from An-Najah National University and the affiliated hospital. The questionnaire comprises three sections, with the initial one containing inquiries about demographic information. The second section comprised inquiries designed to evaluate the severity of acne utilizing the acne severity scale and the Cardiff Disability Index, which measures the impact of acne on the quality of life among medical students. The third section comprised inquiries aimed at examining and evaluating self-treatment for acne. The average age of our study sample was 21.3 ± 1.9 years, with a female majority of (72.3%). Acne prevalence among medical students was (80.9%), with (36.6%) engaging in self-medication. Acne exhibited a significant correlation with female gender ($p < 0.001$) and skin type ($p = 0.024$). Dairy consumption ($p = 0.007$), sweets ($p < 0.001$), chocolate ($p < 0.001$), and greasy food ($p = 0.006$) were all substantially correlated with acne. Skin type exhibited a significant correlation with both the severity of acne ($p < 0.001$) and the Cardiff Acne Disability Index ($p = 0.016$). Gender ($p = 0.039$) was correlated with Cardiff acne disability. A notable association was identified between the severity of acne and diminished quality of life. The predominant topical medication utilized for self-treatment was antibiotics (70.3%). The predominant oral agent utilized was isotretinoin (9.4%). (22.7%) of the students utilized herbal items, whilst (47.7%) employed home remedies. Acne is common among medical students, with a significant proportion experiencing varying levels of disruption in their everyday activities. Consequently, self-medication among individuals with acne is prevalent. Medical students should enhance their awareness on the proper application of self-medication.

Psoriasis is a common inflammatory skin illness that affects millions of individuals worldwide. Patients with psoriasis frequently pursue treatment beyond the allopathic framework to address their healthcare demands. The utilization of medicinal plants has become a prevalent and favored approach within Complementary and Alternative Medicine (CAM). In the West Bank of Palestine, a study was conducted to examine the utilization of therapeutic herbs by psoriasis patients in the West Bank of Palestine (30). This study was a cross-sectional descriptive analysis utilizing a questionnaire to examine the use of medicinal plants by psoriasis patients in the West Bank of Palestine. A cohort of 149 psoriasis patients attending outpatient clinics participated in face-to-face interviews to complete the questionnaire. Medicinal herbs were utilized by 81 individuals, constituting (54.4%) of those with psoriasis. Patients utilized 33 therapeutic herbs from 26 families. The study patients predominantly utilized plants from the Lamiaceae and Leguminosae families. Aloe vera, Trigonella arabica, Catharanthus roseus, and Anthemis cotula were the most commonly utilized medicinal plants for the treatment of psoriasis. The research patients predominantly utilized leaves and fruits. Paste was the predominant method of preparation. The utilization of medicinal plants was notably correlated with the patients' age and monthly household income. The most often self-reported reasons for utilizing medicinal herbs were the enhancement of immunity, the improvement of conventional therapy, and the reduction of side effects. Individuals with psoriasis in Palestine appear to utilize medicinal plants as a complementary and alternative medicine approach for managing their condition. Numerous therapeutic plants were frequently utilized by individuals with psoriasis. Additional randomized clinical trials are required to establish the safety and efficacy of most therapeutic plants utilized by psoriasis sufferers in Palestine.

1.1.2 Patient Counseling and Education

In the city of Maryborough, which is located in the central region of Victoria, a survey was conducted to explore the frequency with which pharmacies and general practitioners are used as sources of guidance for skin concerns (18). An interview was conducted with customers who were purchasing skin, hair, and nail products at pharmacies, either with a prescription or Over The Counter (OTC) items. The interview took place over a period of two weeks. At the same time, all of the General Practitioners (GPs) in the city filled out questionnaires on all of the patients who presented with

diseases affecting their skin, hair, and nails. Seventy percent of the 315 customers who were questioned were purchasing OTC goods, while thirty percent were purchasing prescription items. The pharmacy personnel advised 42 percent of the over-the-counter products, whereas doctors recommended 18 percent of them. A little more than one-third of customers who purchased over-the-counter products explained their symptoms to the personnel at the pharmacy, and in around half of the cases, they did so to the pharmacy assistant. One-third of those who described their symptoms had previously seen a medical professional. Dermatitis, skin dryness, acne, and tinea were the most frequently reported problems at the time of the survey. There were 265 conditions that were reported in patients by general practitioners, of which (54%) were new situations. Solar keratosis was the most prevalent ailment that was treated, and the general practitioner (GP) issued a prescription for 43 percent of the cases and suggested over-the-counter medicines for seven percent of the cases. A range of sources, such as general practitioners, pharmacies, and others, are being consulted by residents of Maryborough in order to receive guidance on their skin disorders (18).

When it comes to the care and education of patients who suffer from dermatological illness, pharmacists play an extremely important role. Nevertheless, there is a limited amount of formal instruction in dermatology that is offered at pharmacy schools or in post-graduate program training. In addition, dermatologists and pharmacists have observed that there are restrictions to patient treatment that are mostly the result of inadequate communication between the two professions. The Dermatology Symposium for Pharmacists was founded with the purpose of enhancing the dermatological knowledge of pharmacists as well as the interprofessional relationships amongst them (27). For the purpose of participating in the symposia on a state level, pharmacists were sought out and recruited. An audience response system was used to deliver survey questions both before and after the exam. These questions assessed the frequency of dermatological interactions in the pharmacy, the attitudes of dermatology held by pharmacists, and case-based questions that were related to each lecture. Attending the conference were a total of 83 pharmacists, the majority of whom are responsible for providing at least one dermatological advice on a daily basis. The paired t-test was utilized to evaluate the disparities in the scores obtained from the pre-test and post-test questions pertaining to dermatological knowledge. The results indicated that the mean scores were 6.36 and 9.89, respectively, before and after the symposium (p of less than

or equal to 0.0001). Eighty-nine percent of attendees reported feeling more at ease with dermatological referrals, and sixty-five percent of those who attended the symposium reported that they were more inclined to prescribe skin care products that are available without a prescription. Throughout the course of the panel talks, many strategies for enhancing interprofessional care were explored. Pharmacy professionals who were present at this conference expressed a strong desire to acquire further knowledge concerning dermatological diseases. Through the utilization of case-based interactive learning, dermatological instructors were able to identify knowledge gaps for an audience with whom they had no prior experience. Additionally, we feel that the symposium was successful in enhancing the interprofessional cooperation that exists between dermatologists and pharmacists in the region (27).

The number of people diagnosed with skin cancer is rising at a startlingly rapid pace. It was the purpose of this study to determine whether or not pharmacists are willing to counsel patients on skin cancer and the characteristics that are predictive of this condition (31). Three hundred pharmacists from San Diego County were randomly selected to receive a survey consisting of thirty items. The survey was designed to evaluate the attitudes and behaviors of skin cancer prevention counseling, as well as personal skin cancer preventive behaviors and readiness to advise on skin cancer prevention. Approximately one-third of the 128 pharmacists who participated in the survey stated that they never advise patients on the subject of skin cancer prevention. The data acquired from these pharmacists suggested that the incidence of skin cancer prevention counseling was extremely low. Among those who did provide counseling, the percentage of patients who received advice on how to prevent skin cancer was less than five percent. In terms of knowledge of skin cancer, attitudes and views on counseling patients, pharmacy setting, services supplied by their pharmacies, and their own personal sun protective behaviors, bivariate analyses revealed that pharmacists who counseled on this issue differed from those who did not advise on this topic. According to the findings of a multivariate analysis, there were two factors that independently predicted skin cancer preventive counseling. These variables were the respondent's attitude toward counseling and whether or not the pharmacy where they worked offered this service specifically. With regard to the prevention of skin cancer and other health-related matters, more than ninety percent of respondents indicated that they would be prepared to offer advice to patients. In the future, research should concentrate on

identifying the obstacles that hinder skin cancer counseling and contextual stimuli that encourage this kind of engagement between pharmacists and patients (31).

The purpose of this study was to investigate the impact that an intervention had on the percentage of pharmacists who get advice on skin cancer prevention (32). A total of fifty-four pharmacies were distributed at random to either the intervention or control conditions. Training, feedback, and prompts were the components that made up the intervention. A comparison of counseling rates before and after the intervention was gathered from individuals who participated in the research. At the time of the pretest, the percentages of control sites and intervention sites that offered counseling at least once were (7.4%) and (0%), respectively (natural selection). As of the posttest, the proportions of these individuals were (3.7%) and (66.7%), respectively (P <.001). As a consequence of the findings, it was determined that the intervention was successful, and that pharmacists had the potential to play a significant role in teaching the general population about methods for preventing skin cancer.

Cancer that affects the skin is the most common kind of cancer in Belgium. Increasing awareness and advocating sun protection are two ways in which community pharmacists may contribute to the prevention of skin cancer. This improved awareness may be connected with greater sun protection and early diagnosis; however, it is not yet known which individuals may be addressed by community pharmacists in Belgium for the purpose of raising awareness about skin cancer (33). Between the months of May and June 2022, the pharmacy database was accessed in order to extract the demographic information of individuals who were approached in community pharmacies in the Flemish region, as well as the content of the skin cancer counseling. Up to one hundred eighty days after receiving skin cancer counseling, the assessment of sunscreen purchases and visits to dermatologists was reviewed. A large number of visitors (n = 822, 69% females, median age of 59 years, Q1-Q3: 44-71 years) were counseled by community pharmacists on different types of skin cancer. A brochure including information on the frequency of skin cancer and the significance of using sunscreen was distributed to 822 visitors throughout the campaign. On top of that, 335 visitors (41%) received additional counseling: skin type sensitivity was checked for 198 visitors (24%), typical characteristics of melanoma were discussed with 100 visitors (12%) and 37 visitors (5%) were referred to a physician for further information or concerns

regarding a skin spot. In all, thirty-three percent of visitors made a purchase of sunscreen on the day of the counseling session, with that percentage rising to thirty-eight percent after one hundred eighty days. This percentage was significantly greater among those who were less than 20 years old (51%). It was shown that further counseling increased the chance of a visit to a dermatologist within 180 days (OR = 1.80; 95% confidence interval: 1.12-2.88). By offering counseling about skin cancer at community pharmacies in Belgium, a wide variety of residents were contacted and encouraged to buy sunscreen, often on the same day that they received the counseling. Especially noteworthy was the fact that younger individuals were more inclined to buy sunscreen. Within the first 180 days, citizens who received extra counseling were more likely to see a dermatologist (33).

1.1.3 Recommending Pharmaceutical Products

A study was conducted to investigate the variety of dermatological medications use reviews that were carried out by pharmacists and to identify the level of confidence that they had in dealing with the giving of advice to patients who had skin concerns (34). A questionnaire for self-completion was sent to a random sample of 3,500 community pharmacies in England and Wales, which is located in the United Kingdom. A response rate of 25% (870/3500) was achieved by the survey, which received responses from a total of 870 pharmacists respectively. Psoriasis and eczema/dermatitis were the most common diseases that were found during the dermatology medications use reviews, which resulted in almost half of the respondents (44%) having had the procedure. When it came to conducting dermatology MURs, the mean confidence score was 3.5 (standard deviation was 1.0), based on a scale of five points. There are a lot of pharmacists that are actively participating in dermatology MURs, and they consider themselves to be confident in this capacity. When it comes to determining whether or whether such evaluations contribute to improvements in disease-specific outcomes, further research is required (34).

Dermatology within the Pharmacy: an Education Programme on Common Skin Conditions for Pharmacists was established to provide assistance to pharmacists in Australia with the diagnosis of common skin illnesses as well as the prescription of suitable non-prescription drugs for the treatment of these diseases (35). A movie that accompanied the book was included in the instructional materials, which included a

book that was 107 pages long and had color images and flow charts for diagnostic purposes. An evaluation was conducted to establish whether or not the program was successful in enhancing the capabilities and self-assurance of pharmacists in the areas of diagnosis and management, as well as the level of contentment that participants had with the resource. The assessment included the participation of two hundred and ten community pharmacists who were recruited over the phone from a list of community pharmacies. The pharmacists were divided into three groups using a randomizing process. The first group was given printed instructional materials, the second group was given printed materials together with a supporting video, and the third group was selected to act as the control. Before the training materials were provided, a mail questionnaire was sent out to measure the level of confidence and expertise that pharmacists have in diagnosing and treating common skin disorders. The questionnaire was also sent out one month and six months following the distribution of the materials. Out of the three assessments, one hundred eighty-three pharmacists participated and completed them. At the end of the four-week period, the analysis revealed that groups 1 and 2 had made substantial progress in their ability to diagnose, but group 3 had received very little improvement. Participants in Group 2 also shown a considerable rise in their self-assurance about the diagnosis and treatment of skin diseases. Six months after the education program was completed, improvements were still being maintained. One hundred eleven pharmacists, which is sixty-seven percent of the total, filled out assessments indicating how satisfied they were with the training. Both the book and the video received extremely good ratings from them for their capacity to assist in the improvement of their abilities to identify and treat skin diseases. The findings of this study indicate that it would be beneficial to implement practical educational programs like the DEP in order to guarantee that customers who suffer from common skin disorders get the proper guidance within the community pharmacy environment (35).

In Victoria, Australia, the purpose of this study is to determine whether or not customers were pleased with the advice they got from community pharmacists about skin problems, as well as to estimate the costs and possible savings that are connected with the management of these disorders in the pharmacy (36). A consumer survey on costs and satisfaction was conducted in Victoria during the years 1997–1998 as part of a statewide education campaign involving community pharmacists. The survey was conducted in Victoria. OTC medications were used in dermatological consultations, and

pharmacists were responsible for recording the contents of these consultations. Additionally, they recruited pharmacy customers for follow-up by a member of the study team. Consultations with customers were documented at 126 different pharmacies. One hundred and five consumers, or 58.0 percent, of the 181 customers who were later questioned said that they were quite pleased with the counsel they had received. Seventy-three percent of the respondents spent up to ten minutes visiting the pharmacist, and seventy-eight percent of the respondents spent between five dollars (£1.95) and ten dollars (A$) on OTC products. On the recommendation of their pharmacist, a total of 37 customers, which accounts for (20.4%) of the total, sought the opinion of a medical practitioner. Despite the fact that the majority of the 37 customers spent less than ten Australian dollars at the pharmacy, more expenses would have been incurred by both the consumer and the government if the cost of medical consultations and the subsidized nature of commodities that were given on medical prescriptions were taken into consideration. It was found that the direct expenses associated with a consultation with a GP were higher than the direct costs that were predicted to be associated with a consultation with a pharmacist for the treatment of skin disorders. Both the advice and treatment that the pharmacist provided to the customers on the management of skin disorders were deemed to be satisfactory by the customers. Both the customer and the government looked to benefit from the advice provided by pharmacists in terms of cost-effectiveness. It would seem that community pharmacists are appropriate main providers of advice and treatment for those who suffer from skin problems that are not severe (36).

A study was conducted to investigate the various types of dermatologic disorders that community pharmacists in Lebanon encounter on a regular basis, as well as the frequency of these disorders, as well as to determine their level of educational preparedness and confidence, the reasons for referrals to dermatologists, and their perspective on the potential role that pharmacists could play in the treatment of dermatological disorders (37). Between the months of June and October of 2017, descriptive research with a cross-sectional design was carried out. It involves the use of a questionnaire that was self-administered and was given out to a sample of 500 community pharmacists who were chosen at random from all of the districts in Lebanon. The questionnaire was filled out by a total of 456 medical professionals. Among the participants, sixty-four percent had completed a dermatological course at the

university level, and thirty-eight-point seven percent had completed some kind of postgraduate study in the field of dermatology. It was considered by pharmacists that the most often seen problems were sunburn (22.6%) and acne (15.6%) during the spring and summer seasons, and skin dryness (18.8%) with head lice (13.1%) coming in second place during the autumn and winter seasons. In addition, more than half of the respondents said that requests for guidance about the skin accounted for between 6 and 15 percent of the overall counsel that was provided to patients. Sixty-four percent of those surveyed had either confidence or strong confidence in their ability to advise patients who had dermatological concerns. It was determined by pharmacists that the most prevalent reason for patients to be sent to dermatologists was because they were unclear about the diagnosis. The self-reported confidence of pharmacists who had undergone postgraduate training in dermatology was much greater when it came to addressing skin problems and the therapies for them ($P < 0.05$). Our research showed that community pharmacists in Lebanon see just a small number of dermatological conditions on a regular basis, and the majority of them think that they are capable of providing patients with advice and managing their conditions with confidence. Despite this, they stated that they had a deficit in their education about dermatology, both at the undergraduate and postgraduate education levels (37).

1.1.4 Referrals and Collaborative Care

Within a healthcare system, specialty pharmacists have the ability to reduce the amount of time it takes for patients to get medicine and to provide clinical assistance to clinicians (38). Over the course of October 2020, the postgraduate year 2 ambulatory care pharmacy resident at the University of Louisville Health. Hospital implemented a new service in the UofL Health dermatology clinic. The purpose of this new service was to provide multidisciplinary care and ultimately to improve patient access to specialty dermatology medications. after the addition of a pharmacist to the health dermatology clinic, the purpose of this study is to describe the clinical impact (time to medication initiation, adherence, adverse events, quality of life, pharmacist interventions, and patient satisfaction) as well as the financial impact (dermatology prescription volume and return on investment for the UofL Hospital Specialty Pharmacy). The dermatology clinic team did not have a pharmacist prior to the introduction of this new service. Between the months of October 2020 and April 2021, a PGY-2 ambulatory care

pharmacy resident worked in the dermatological clinic for 1 half day each week, which is equivalent to four hours. During this time, the resident built a workflow that assisted with drug selection, initiation, access, education, and monitoring patients. Patients who were visited in the dermatological clinic maintained by the University of Louisville Health and who filled a specialty dermatology medicine with the UofL Hospital Specialty Pharmacy between October 15, 2019, and October 14, 2021 were the subjects of the retrospective record review that was used to obtain the data. During the time period after the appointment of the pharmacist, there was a (28.87%) increase in the number of prescriptions for dermatological specialty drugs that were delivered to the UofL Hospital Specialty Pharmacy (P = 0.023). In the group that received the intervention, the average amount of time it took to begin taking medicine was 13.6 days, whereas in the group that received the intervention, it took 21.3 days. A good effect was made on both clinical and financial results as a result of the inclusion of a pharmacist to the dermatological clinic. This was due to the fact that the link between the clinicians and the specialized pharmacy was strengthened. To broaden the scope of pharmacy services available within dermatology, health-system specialty pharmacies might model themselves after this paradigm (38).

Treatment and diagnosis of malignant melanoma at an early stage are very necessary in order to reduce the risk of death. This research was conducted with the intention of describing the acceptance of a mole scanning service in the community pharmacy setting in the United Kingdom, as well as the profile of users and the consequences of the service (39). Moreover, the expenditures of health care that were saved from the point of view of general practice were taken into consideration. The service made it possible for patients to have skin lesions that were causing them worry scanned using a dermatoscopy equipment. These scanned lesions were then examined remotely by clinical dermatology experts in order to make advice for the patient involved. In order to determine the clinical result, patients were continued to be monitored. A total of 6355 patients and 9881 scans were evaluated, and the data was collected from fifty community pharmacies. In (88.7%) of the cases, the bulk of the scans did not need any more follow-up (n = 8763). One hundred and forty-four percent (n = 757/1118) of the scans in which patients were advised to seek further medical assistance were successful in confirming the diagnosis. Forty-three percent of them were finally determined to be normal (n = 335), whereas six percent were classified as malignant melanoma (n =

47/757). The service resulted in a verified diagnosis of malignant melanoma in about 0.7% of the scans that were performed as part of the program. It has been shown via this assessment of the service that a mole scanning service that is offered inside community pharmacies is helpful in the process of triaging patients and eventually contributes to the identification of diagnoses of malignant melanoma cases (39).

A study was conducted to evaluate the effect that a clinical pharmacy specialist integrated inside a rheumatology clinic at a big academic medical center has on the percentage of prescriptions that are captured by the specialized pharmacy of the health system (40). An integrated clinical pharmacy service was implemented at the main campus rheumatology clinic as a result of the health system specialty pharmacy's initially poor prescription collection rates. As part of the benchmarking process, an evaluation of the previous prescription capture rate was carried out with the assistance of electronic medical record analytics and Loopback Analytics, which is a database of prescription capture for the health-system specialty pharmacy. It was found that the processes that were already in place for the rheumatology clinic and the specialty pharmacy were observed with respect to the ordering and processing of biologic medications. The rheumatology clinic was created with the intention of including an embedded clinical pharmacy specialist, which led to the development of strategies for an updated process for obtaining biologic supplies. The clinical pharmacy specialist, rheumatology providers, clinic personnel, and pharmacy technicians were among the main players who participated in the process of developing this new workflow by working together. Following the establishment of the workflow, all stakeholders involved, including rheumatology doctors, nursing staff, and specialist pharmacy personnel, were taught and kept up to speed. The percentage of prescriptions that were filled was tracked on a monthly basis. After the installation of pharmacists, the percentage of prescriptions that were captured rose from 13.16 percent before the implementation (October to December 2021) to 35.42 percent after the implementation (October to December 2022) ($P = 0.019$). During the same time period, the income earned went from $43,222.89 to $135,198.70 ($P = 0.224$). Additionally, the percentage of prescriptions that were first submitted to the health-system specialty pharmacy as opposed to other specialty pharmacies increased from 37% to 79% ($P < 0.001$) as a result of the deployment of clinical pharmacy specialist. While simultaneously improving the quality of treatment provided to patients, the expansion and deployment

of pharmacy services in a rheumatology ambulatory clinic via the incorporation of a clinical pharmacy specialist led to an increase in prescription capture and income for the pharmacy. In the future, we want to extend clinical pharmacy specialist services of a similar kind to additional clinics within the health system (40).

Certain skin conditions, including psoriasis, hidradenitis suppurativa, acne, and alopecia areata, have been related to a growing number of systemic and mental health comorbidities, including depression. Despite the fact that the detection and treatment of these comorbidities are often included in primary care, there are certain patients who may not have a well-established contact with a primary care physician and may only be visiting their dermatologist (41). The purpose of this study is to investigate the extent to which dermatologists serve as the primary point of contact within a public health system for patients who suffer from chronic skin disorders. Through the use of Optum's deidentified Clinformatics Data Mart Database, we carried out retrospective cohort research. The percentage of patients who established treatment with a dermatologist and did not have any contacts with a primary care provider in the year that followed this dermatological appointment was the main outcome that was measured. Among the skin illnesses that were examined, it was found that between (21.6%) and (31.2%) of males and between (16.9%) and (26.2%) of women did not contact their primary care physician in the year that followed the establishment of their treatment with their dermatologist. It is possible that the dermatologist provides the sole point of contact with the healthcare system for a significant number of patients who suffer from persistent skin conditions. Dermatologists may have the chance to enhance the quality of treatment that they provide to their patients by screening for comorbidities that are related with their conditions (41).

To create research priorities that will assist the creation and implementation of community pharmacy programs for the treatment of skin problems via the establishment of research priorities (42). The consultation of stakeholders is an iterative process that involves many stages, including an online survey, participant workshops, and a meeting to prioritize the issues. All of the data collection was carried out online, with participants filling out a survey (which was distributed using the JISC Online Survey platform between July 2021 and January 2022) and taking part in online workshops and meetings (which were conducted on Microsoft Teams between April and July 2022).

There were 174 community pharmacists and pharmacy staff members that participated in the online survey. Nineteen community pharmacists, four members of the pharmacy staff who were not pharmacists, and thirty members of the general public were among the 53 individuals who took part in the exploratory workshops. The four healthcare professionals who were unable to attend the session took part in a one-on-one interview instead. Out of the 29 people who attended the workshops, there were five pharmacists and pharmacy staff members, one other healthcare professional, and twenty-three members of the general public who took part in the prioritization meeting. Following are the five major areas of prospective research need that were highlighted via the online survey: (1) the identification and diagnosis of skin issues; (2) skin conditions in skin of color; (3) the determination of when to refer skin conditions; (4) concerns that are particular to diseases; and (5) concerns that are specific to products. During the workshops, they were investigated and modified in order to develop ten prospective topics for study that would assist pharmacists in the management of skin disorders. Over the course of the prioritization discussion, they were rated. Among the subjects that were given priority were those that were concerned with the manner in which pharmacists collaborate with other medical experts to diagnose and treat skin diseases. All of the replies to the survey and the workshops that were held with the stakeholders acknowledged the possibility that community pharmacists may play an active role in the treatment of common skin disorders. It is possible that this will be supported by future research in the creation of resources for pharmacists, in the promotion of public use of pharmacy services, and in the evaluation of the most effective provision for the treatment of skin problems (42).

The underrecognized patient group that is affected by psychocutaneous illness is at risk of receiving an incorrect diagnosis and experiencing a decrease in quality of life as a result of information gaps and a lack of awareness (43). The establishment of combination clinics has allowed clinicians all over the globe to play a pioneering role in the provision of specialized medical treatment to patients who have been afflicted. A framework that is required to increase availability and eventually enhance patient outcomes is produced as a result of the findings. The purpose of this paper is to provide major results that were obtained from an in-depth review of the available literature, to emphasize the necessity and advantages of providing multidisciplinary treatment, and to give structural evidence of current liaison clinics for the purpose of more broad future

application. A search was carried out in PubMed and Google Scholar using the following search technique in order to locate data from the beginning of the project until November 12, 2019. psychodermatology clinic, psychodermatology liaison, psychodermatology combined, psychocutaneous clinic, psychocutaneous liaison, psychocutaneous combined, psychiatry dermatology combined, or psychiatry dermatology clinic are all examples of different types of clinics that specialize in psychodermatology. Studies were not considered for inclusion if they were case reports of a single patient, if there was a lack of information on the number of patients, clinic setting, and presenting diseases, and if the reports were published in a language other than English. Following the elimination of duplicates and the implementation of inclusion criteria, a total of 932 studies were reviewed, and 23 of them were chosen for further consideration. Collective data from 1677 patients from 12 different nations throughout the globe was collected from the combined clinics, which varied in terms of their organization, design, and site.

According to the findings, patients face obstacles when attempting to acquire access to care, and doctors tend to lack the expertise and resources necessary to make an accurate diagnosis and provide appropriate therapy. When it comes to the therapy of dermatologic illness and psychological comorbidity, the installation of integrated clinics offers a cost-saving alternative. This is accomplished by minimizing the number of erroneous diagnoses, ineffective treatments, wasteful referrals, and "doctor shopping." Seventy-seven percent of the studies that were included in the analysis revealed that the use of holistic therapy with both pharmacologic and nonpharmacologic treatments resulted in either increased patient satisfaction or better patient outcomes. An analysis of the data collected from the clinics that were included sheds light on the growing demand and need for specialized training.

The capacity to deliver integrative patient care of a high quality, the possibility of value in medical education, and the results of decreased health care expenses all show the need for leaders in the health care industry to increase specialized care as a critical component for going ahead. The practical clinic models include a dermatologist who is well-informed for the purpose of identifying psychocutaneous diseases, providing referrals when necessary, and providing therapy depending on the individual comfort level of the physician receiving the treatment. It is strongly advised that consultations

and discussions pertaining to management include the participation of several professionals, such as psychiatrists, psychologists, and residents, and that these specialists ideally work inside educational institutions (43).

There is a high incidence of incorrect labeling of penicillin allergies, which may lead to the use of other antibiotics that are less favored (44). Examining the relationship between the usage of antimicrobials and clinical outcomes in relation to an allergy assessment program that is led by a pharmacist. Two stages of an allergy evaluation program supervised by pharmacists were introduced at a single-center tertiary referral hospital. The first phase began on June 1, 2015, and the second phase began on November 2, 2016. Every adult admission that occurred during the research period was included in the longitudinal cross-sectional analysis, and segmented regression was used to evaluate the outcomes across the whole hospital.

Individual outcomes were evaluated within the context of an embedded propensity score–matched case-control study of inpatients who had self-reported having an allergy to penicillin and were receiving full allergy screening. Between the dates of March 1, 2020 and February 29, 2020, analysis was carried out. In the longitudinal trial, the results at the hospital level were assessed over the course of three phases: preintervention (15 months), phase 1 (structured allergy history alone, 16 months), and phase 2 (complete evaluation including penicillin skin testing, 52 months). Within the context of the case-control research, cases were classified as patients who were receiving complete allergy consultations. These outcomes were measured at the hospital level and included the number of antibiotic days administered per 1000 patient days as well as the incidence of hospital-acquired Clostridium Difficile Infection (CDI) per 10,000 patient days.

The selection of antibiotics, overall survival, and survival without CDI were the individual outcomes that were considered. The longitudinal study included the years 2014 through 2020, with the median number of admissions being 46 416 per year and the Interquartile Range (IQR) being 46 001 to 50 091 each year. There was a temporal association between allergy histories and a reduction in the use of nonpenicillin alternative antibiotics (rate ratio, 0.87; 95% confidence interval, 0.79-0.97) and high-CDI-risk antibiotics (rate ratio, 0.91; 95% confidence interval, 0.85-0.98) throughout the whole institutional setting. Dermatological testing with penicillin was shown to be

temporally linked with decreased incidence of hospital-acquired CDI (rate ratio, 0.61; 95% confidence interval, 0.43-0.86). There were a total of 819 controls and 272 cases included in the embedded case-control research. 553 patients, or (50.7%), were female, and 229 patients, or (21.0%), were of African descent. The median age of the patients was 63 years, with an interquartile range of 51-73 years. Patients who had been evaluated for allergies had a lower probability of receiving high-CDI-risk antibiotics at the time of discharge (odds ratio, 0.66; 95% confidence interval, 0.44-0.98).

There was no statistically significant difference between the estimated decreases in mortality (hazard ratio, 0.77; 95% confidence interval, 0.55-1.07) and the risk of hospital-acquired CDI (hazard ratio, 0.53; 95% confidence interval, 0.18-1.55). At both the individual and the hospitalwide level, allergy evaluations that are guided by pharmacists may be related with a reduction in the usage of antibiotics that pose a high risk of CDI. Despite the fact that individual reductions in death and CDI risk did not reach statistical significance, divergence of survival curves suggests that allergy delabeling may have longer-term advantages that require more investigation that should be conducted (44).

It is possible that self-reported penicillin allergies are erroneous or out of date, which might result in the use of other antimicrobials that may be less effective, more hazardous, and/or more costly (45). Despite the fact that penicillin skin tests are capable of providing reliable evaluations of penicillin allergies, these procedures are not practical at all institutions. An additional alternative is to carry out a comprehensive drug-penicillin allergy interview (DPAI), which has the potential to result in the optimization of antimicrobial treatment.

This research was conducted with the intention of determining the effects of a DPAI protocol that was led by pharmacists. The major purpose of this study was to determine the number of individuals who required a modification to their allergy profile as a result of DPAI. Among the secondary goals, there was the characterization of allergy profile updates, as well as the measurement of the number of recommendations to transition to a β-lactam drug, the acceptance rate of providers, and the tolerance that patients had. DPAIs that were led by pharmacists and were standardized were carried out prospectively on adult patients who had been hospitalized and had a proven penicillin allergy. An update was made to the allergy profile that was included within the

electronic health record (EHR), and a suggestion was given to switch to noncarbapenem β-lactam medication where it was suggested by a decision algorithm. A total of 175 patients, or 37.5% of the total, were given a DPAI. Seventy-six percent of these individuals needed a modification to their allergy profile. Furthermore, it is worth noting that out of the total number of patients questioned, 135 (77.1%) were currently undergoing antimicrobial medication. Of these patients, 42 (31.1%) met the criteria necessary to transition to noncarbapenem β-lactam therapy. Among these patients, 31 (73.8%) were successfully transferred, without exhibiting any indications or symptoms of intolerance. The use of pharmacist-driven DPAIs has the potential to offer allergy information that has been updated and rectified inside the electronic health record (EHR), which enables the de-escalation and/or optimization of antimicrobial treatment (45).

The United States of America (US) has a complicated healthcare system that includes a variety of insurers, healthcare institutions and organizations, and providers (46). These insurers include public, private, nonprofit, and for-profit companies. In contrast to other industrialized nations, the United States does not have a healthcare system that is based on a single payer or a national pharmaceutical benefits program or plan. The United States of America is among the poorest performers in comparison to other industrialized nations in terms of outcomes such as life expectancy at birth, infant mortality, safety during delivery, and untreated chronic illnesses (such as asthma and diabetes). This is despite the fact that every individual in the United States spends more than ten thousand dollars on healthcare.

In a variety of settings, such as large health systems, federally qualified health centers or free clinics that provide care to the underserved, or specific facilities for veterans or American Indian and Alaska native peoples, primary care is provided by physicians and advanced practice providers (i.e., nurse practitioners and physician assistants). Primary care is also provided by medical professionals. Since 2010, the delivery of primary care has changed toward offering patient-centered, coordinated, and comprehensive care with an emphasis on providing proactive, rather than reactive, community health management and on the quality of treatment rather than the quantity of care. Independently operated pharmacies, chain pharmacies, supermarket pharmacies, and mass merchant pharmacies are all included in the community pharmacy. As well as

immunizations, medication therapy management, medication packaging, medication synchronization, point-of-care testing, and, in certain states where legislation has been passed, hormonal contraception, opioid reversal agents, and smoking cessation services, community pharmacies offer a variety of services to their customers. There has been criticism over the absence of standard nomenclature for services such as medication synchronization and medication treatment management, as well as their components and the manner in which they should be offered. This lack of vocabulary hinders the ability to compare different research on the same topic.

The absence of a provider status at the federal level is one of the most significant obstacles that pharmacists in the United States must overcome. This indicates that pharmacists are not permitted to utilize the fee-for-service health insurance billing codes that are already in place in order to get compensation for services that do not include dispensing medications. Furthermore, despite the fact that regulatory infrastructure exists in a number of states, the level to which services are implemented is either limited or unclear. According to the findings of the research, pharmacists have a great deal of difficulty while offering some of these services. Additional obstacles include the fragmentation of states, the absence of a unified pharmaceutical association, and the absence of a unifying vision for the profession (46).

A study was conducted to determine the incidence of non-melanoma skin cancer, precursors, and melanoma using a store-and-forward dermatological paradigm, with the pharmacist serving as the patient's point of contact (47). The second aim was to identify changes in lesions and symptoms that patients experienced (clinical prediction criteria by non-expert observers) that have the potential to indicate the presence of malignancy. There was research conducted on teledermatology consultations that was cross-sectional in nature. All of the patients who had a consultation with a teledermatologist between September 2018 and March 2020 were included in the study. More than one lesion might be present in a patient during a single visit. A dermatological lesion that was well identified served as the focus of the investigation. A univariate model that was based on the chi-square test for independent qualitative variables and the Fisher exact test in situations where the anticipated values in any of the cells of a contingency table were less than 5 was used in order to assess the differences that existed between the variables. Statistical significance was established at a level of ($P < 0.05$), with two-tailed. A total

of 225 lesions from 218 individuals were taken into consideration for this research. Of the lesions, (53.8%) (n = 121) were deemed to be benign, 16.4% (n = 37) were deemed to be questionable, (23.1%) (n = 52) were deemed to be precursors to NMSC, (5.8%) (n = 13) were deemed to be NMSC, and (0.9%) (n = 2) were deemed to be melanomas. Among the clinical lesion changes that were reported, spontaneous pain, pruritus, surface texture changes, color changes, or form changes did not have a statistically significant relationship with the diagnostic group. On the other hand, the presence of spontaneous bleeding (P = 0.015) and size changes (P = 0.026) were more frequently observed in the groups that were classified as having a "dubious lesion" and a "of oncological relevance lesion." This "direct-to-consumer," store-and-forward teledermatology with dermoscopy paradigm, which features the pharmacist as the patient's point-of-contact, is helpful for the diagnosis of melanoma, non-melanoma skin cancer, and precursors when it is supported by a comprehensive dermatological service (47).

Our planet is facing a grave danger in the form of environmental degradation, climate change, and the outbreak of illnesses in the form of pandemics, all of which are associated with these factors (48). As a result of the disastrous effects of the relatively recent COVID-19, as well as the significant rise in the number of instances of cancer, pulmonary failure, and heart health, doubts have been raised about the prospects for the sustainable growth of pharmaceutical and medical sciences. Improvised approaches and alternative green chemical, bio-based precursors are being developed by scientists all over the world in an effort to satisfy the demand of today.

This attempt is being made in the pursuit of strategies that are both inclusive and effective. Within the scope of this comprehensive analysis, we have discussed the prospective and real-time uses of synthetic and bio-based surfactants in the disciplines of biomedicine and pharmaceuticals. Surfactants are one of the most potential candidates for use in biomedical fields such as dermatology, drug delivery, anticancer treatment, surfactant therapy, vaccine formulation, personal hygiene care, and many other areas. This is due to the fact that surfactants possess an excellent and unique amphoteric nature, and they are also able to dissolve in both organic and inorganic drugs. Surfactants have the potential to self-assemble, which is a highly significant capability for drug delivery systems.

This function boosts the bio-availability of medicinal compounds that are poorly soluble in water by changing the solubility of the products. Many studies have documented the antibacterial, anti-adhesive, antibiofilm, anti-inflammatory, and antioxidant actions of surfactants over the course of many decades. These activities pertain to the applicability of surfactants in treatment for medical conditions. It has been discovered that surfactants also possess laxative and spermicidal properties, according to some publications. The purpose of this extensive paper is to shed light on the many uses of surfactants, including but not limited to the following: drug delivery, vaccine development, cancer treatment, therapeutic and cosmetic pharmaceutical sciences, and the prevention of respiratory failure caused by COVID-19 (48).

There is a lack of appropriate characterization of the link between the knowledge and practice of pharmacists and the information that is offered to patients concerning dermatoses and the treatment for them (49). In addition, the contributions that pharmacists provide in the areas of counseling and increasing adherence to topical therapy are not well understood. This research aims to accomplish three primary goals. It seeks to identify the knowledge and practices of pharmacists regarding dermatoses and their treatment, as well as to compare the perspective of patients with that of pharmacists regarding treatment information.

The ultimate objective is to establish guidelines for the communication of dosage regimen instructions to dermatological patients and to promote adherence to treatment, thereby filling a gap in the existing literature. The research that was carried out was of the exploratory, descriptive, and cross-sectional kind. Two different questionnaire procedures were developed, one for pharmacists and another for patients, based on the past expertise of specialists and the substantial material that was gathered from the previously published literature. Validation of the instrument was accomplished via the use of Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) in connection to the questionnaire that was administered to the pharmacists. According to the findings, the level of knowledge that pharmacists possess about dermatoses and the treatment of these conditions is regarded to be satisfactory.

It was stated that the majority of the pharmacists were providing patients with valuable information. On the other hand, several patients complained that they had not received it. Due to the fact that pharmacists play a key role in the care of a number of illnesses,

this is an essential problem. Due to the fact that a lack of comprehension of the dosage instructions might be the impetus for non-adherence, the communication techniques of pharmacists play a significant part in overcoming this obstacle. As a result of the findings of this research, communication gaps between pharmacists and patients were observed. As a result, the formulation of recommendations to enhance the transfer of clear dose regimen instructions and information about the patient's ailment is of the utmost significance. It is recommended that training programs for the ongoing education of pharmacists be created in order to address the communication issues that were discovered in this research which were highlighted (49).

Dermatology patients often engage in the practice of self-medication. However, there are not many research that have been conducted on this phenomenon (50). There is a lack of clarity on the pattern and purposes of self-medication. This research aimed to record the incidence of self-medication among dermatological patients, as well as the pattern of self-medication, various sources of pharmacological knowledge, and the reasons for self-medication. A total of 468 adult dermatological patients participated in this investigation, which was a prospective cross-sectional study that lasted for nine months. Every new patient who came to the dermatology outpatient clinic was given a questionnaire that they were responsible for filling out on their own. Questions were included in the questionnaire that inquired about sociodemographic information, self-medication, the particular medications that were used by the patients, the sources of information, and the reasons for self-medication. An analysis of the data was performed using SPSS 22.0. This section presents statistical information such as means, medians, and frequencies, as well as the t test and the chi-square test.

The average age of the patients was 37.9 years, with a standard deviation of 16.3. There were (63.7%) of those who self-medicated their conditions. Self-medication consisted of herbal solely in (11.7%) of cases, western medicine exclusively in (45.6%) of cases, and a combination of western and herbal practice in (42.6%) of cases. For (54%) of people, the reason for self-medication was simple accessibility, whereas for (16.8%) of people, it was difficult to visit a doctor, and for (13.8%) of people, it was difficult to receive medical treatment. In (46.3%) of cases, the source of medication knowledge was a pharmacist, whereas by (26.5%), it was a friend. Males and those with inflammatory disorders were much more likely to engage in self-medication behavior. This was owing

to the easy availability of pharmaceuticals and the limited availability of medical professionals, which led to the prevalence of self-medication. The practice of self-medication was prevalent among men and among those who suffered from inflammatory disorders. Both the age of the individual and their degree of education had a role in the pattern of self-medication. Pharmacists, friends, and family members were the sources of knowledge on medications (50).

Due to the fact that psoriasis is a chronic inflammatory illness that needs long-term care, patients tend to become non-adherent to the treatment they are experiencing (51). In light of this, the purpose of this research is to evaluate the effectiveness of clinical pharmacists in enhancing medication adherence among patients who suffer from psoriasis. A total of 68 individuals participated in this investigation, which was a randomized controlled trial that was carried out in the dermatology department of a teaching hospital that provides tertiary care. Participants who were diagnosed with psoriasis illness and were receiving therapy were recruited from the outpatient department and ranged in age from 18 to 65 years old. Patients who suffer from various co-morbidities, such as HIV and hepatitis B/C, as well as sensitive groups, such as women who are breastfeeding or pregnant, are not allowed to participate in the research. Following the completion of the informed consent form, patients who have enrolled are then randomly assigned.

In addition to receiving conventional treatment, the interventional groups of patients were given a patient information booklet, as well as education and counseling from the pharmacist. At the beginning of the study, the patients' adherence to their medication was tested, and then it was once again after one month had passed. There was a total of 68 people who signed up for the study, and 63 of them succeeded in completing it. When the pre-test was administered to both groups, there was no discernible difference seen. On the post-test, there was a statistically significant difference between the experimental group and the control group after the intervention ($U = 200.00$, $p = 0.0001$). The experimental group showed an increase in their level of adherence. It is necessary for clinical pharmacists to be able to provide patients with information on the treatment of long-term diseases such as psoriasis. The use of specialized pharmacists in the treatment of dermatological problems is a fantastic solution for addressing the demands of the patient that have not been adequately addressed (51).

The application of Low-Dose Oral Minoxidil (LDOM) has arisen as a relatively recent therapeutic option for hair loss, and it is gaining attention among dermatologists all over the globe (52). The purpose of this study is to evaluate the level of knowledge, attitudes, and practices that dermatologists in Saudi Arabia have on the use of LDOM in the treatment of hair loss treatment.

A study that was conducted online and sent out via email and mobile texts to dermatologists who are currently working in Saudi Arabia. In order to study the elements that may be related with improved knowledge and practice patterns regarding the employment of LDOM for the treatment of hair loss, investigations were carried out using both univariate and bivariate analyses. This research was conducted with a total of 84 dermatologists, with fifty of them (or sixty percent) being male. It was discovered that 83 of the participants, which is (99%), recognized patterned hair loss as the most prevalent indication for the use of LDOM. Furthermore, hypertrichosis was acknowledged as a well-known adverse effect by 77 individuals, which is 95 percent. Because it was not available in the local pharmacies, forty-eight percent of the dermatologists had never prescribed LDOM to their patients. The use of LDOM for the treatment of hair issues is growing. On the other hand, a significant number of dermatologists choose not to prescribe this drug because of the restricted availability of it in the local pharmacies (52).

In individuals who suffer from Alopecia Areata (AA), the use of trustworthy and sensitive tools to evaluate their health-related quality of life may become more prevalent as a result of the introduction of new treatment options (53). The objective of this study is to provide an overview of the most recent information about the evaluation of quality of life in AA. When it comes to health-related quality of life instruments, the Dermatology Life Quality Index (DLQI), which is dedicated to dermatology, was the one that received the most reports from AA participants.

There are three instruments that are specific to alopecia areata (Alopecia Areata Symptom Impact Scale, Alopecia Areata Quality of Life Index, and Alopecia Areata Patients' Quality of Life) and three instruments that are specific to hair disease (Hairdex, Scalpdex, and 'hair-specific Skindex-29'). These instruments have a variety of content and validation characteristics; however, there is a lack of evidence regarding the actual use of these measures in alopecia areata (AA). Among the hair disease-specific

instruments, Scalpdex has the highest level of validation. It is necessary to conduct further rigorous validation for each and every one of the AA-specific instruments. Although there is limited experience with the use of these instruments, the European Academy of Dermatology and Venereology Task Force on Quality of Life and Patient Oriented Outcomes recommends the use of the DLQI questionnaire, which is specific to dermatology, the Scalpdex, which is specific to hair disease, and the Alopecia Areata Symptom Impact Scale or the Alopecia Areata Quality of Life Index, which are specific to alopecia areata. We have high hopes that novel treatment strategies may be able to enhance overall health-related quality of life as well as clinical symptoms in people who have Alzheimer's disease. It would be good to perform additional development and validation of AA-specific instruments in order to evaluate the results of clinical trials on these novel treatment modalities. This would be done in conjunction with encouraging the development of these instruments (53).

1.2 Statement of the problem and rationale of the study

Community pharmacists are important sources of knowledge to patients. Dermatological diseases differ abundantly in symptoms and severity (54). Most common skin conditions do have symptoms that are similar, hence, it is important to understand the differences between them in order to avoid misconceptions (55). Patients with any kind of dermatological disease can experience levels of social, psychological and emotional distress owing to poor quality of life (54). People should work closely with a dermatologist and pharmacists to diagnose and treat their skin condition properly. In practical management of dermatological diseases some patients consult the pharmacists or dermatologists while others self-manage themselves.

Therefore, patient education regarding to how to behave when they do suffer from any kind of dermatological disease carries a huge importance. In this sense, easy access to the pharmacists needs to be linked with the proper knowledge of these conditions.

Patients with dermatological disorders mostly consult the community pharmacists to manage their conditions, hence, it is important to learn and investigate the perceptions and role of community pharmacists in the management of common dermatological problems in Palestine. In addition, the role of pharmacists in counseling and increasing

topical therapy adherence is critical. As a result, it is critical to understand the gaps between pharmacists and patients in this regard.

Understanding pharmacists' perceptions of skin disorders they confront, resources of professional dermatological training, and perspectives on their role in the care of patients with skin problems is also critical in determining the need for pharmacist training programs and continuing education.

1.3 Research Questions

- What are the types and frequency of dermatologic disorders that community pharmacists in Palestine encounter on a regular basis?
- To what extent the community pharmacists are educated and confident to manage common dermatological problems?
- What are the reasons that makes a community pharmacist refer a patient to a dermatologist?
- How does the community pharmacists behave toward the potential role in the treatment of dermatologic disorders?

1.4 Objectives of the study

1.4.1 General Objectives

This study aims to explore the perceptions and role of community pharmacists in the management of common dermatological problems in Palestine.

1.4.2 Specific Objectives

- To investigate the types and frequency of dermatologic disorders that community pharmacists in Palestine encounter on a regular basis
- To assess the confidence of community pharmacists to manage common dermatological problems.
- To determine the reasons for dermatologist referrals by a community pharmacist.
- To explore the attitudes toward the potential pharmacist role in the treatment of dermatologic disorders.

Chapter Two
Methods

2.1 Study design

This study was implemented in a cross-sectional design. Cross-sectional design is classified as a type of observational designs. In this design, the data are collected and analyzed from a population or a subset that is representative of the larger population. This is usually conducted at a specific point in time. In the cross-sectional design, data are captured in a snapshot at a single moment.

2.2 Study Settings

The study was conducted in different community pharmacies that were distributed all over the different governorates of the West Bank of Palestine.

2.3 Study Population

The study population was the community pharmacists who practiced in community pharmacies that were distributed all over the different governorates of the West Bank of Palestine.

2.4 Inclusion and Exclusion Criteria

Male or female community pharmacists were included when they met the following inclusion criteria:

- Having at least a basic degree in pharmacy
- Registered as a practicing pharmacist in the Palestinian Pharmacists Association
- Practicing community pharmacy for at least 6 months
- Practicing community pharmacy in one of the community pharmacies in the West Bank of Palestine

The community pharmacists were excluded when they met any of the following exclusion criteria:

- Being an intern in pharmacy
- Being a pharmacy assistant
- Practicing community pharmacy for less than 6 months
- Practicing other disciplines of pharmacy

2.5 Sample Size and Sampling Procedure

The sample size was calculated by using Raosoft® sample size calculator by accepting a margin of error of (5%) and a confidence interval (CI) of (95%). The sample size was calculated for a population of community pharmacists of 5,000. The sample size was 357 pharmacists.

A list of all community pharmacies in the West Bank of Palestine was obtained from the Palestinian Pharmacists Association. The community pharmacists were approached by the field researcher in their places of work. The aims and objectives of the study were explained to the potential participants who were invited to participate in the study.

2.6 Data Collection Instrument

The data collection instrument was a questionnaire that was developed after a search of the literature and as informed by previous related studies.

The questionnaire was in 5 sections. The 1st section collected the demographic, academic, and practice variables of the community pharmacists including gender, age, the governorate in which the community pharmacist practiced, academic degrees of the community pharmacist, the place from where the pharmacy degree was obtained, the time since graduation with the basic pharmacy degree, the number of years in practice, the number of practice hours per week, and the place of work. The 2nd section of the questionnaire collected the referral practices of the community pharmacists including if they ever refer patients to consult dermatologists, reasons for referrals, the patient groups referred, and percentage of cases referred to dermatologists. The pharmacists were also asked to indicate the sources of information about dermatological issues and products. In the 3rd section, the pharmacists were asked to rate their confidence in providing education/counseling to patients with dermatological issues. In the 4th section, the community pharmacists were asked to mention the commonly encountered dermatological problems in their practice, the commonly dispensed dermatological products, and their counseling/education practices regarding dermatological products. The 5th section collected the attitudes of the community pharmacists regarding their role in providing care for patients with dermatological issues. The community pharmacists were asked to state if they have received a dedicated course on dermatology during pharmacy training, and the number of with dermatological issues seen per week.

The community pharmacists were asked about their referral practices of the patients to consult dermatologists, the reasons for referring patients to dermatologists, the patient groups often referred to consult dermatologists, and the percentage of dermatological cases referred to dermatologists.

The community pharmacists were asked to self-rate their confidence in providing education/counseling to patients with dermatological issues on a scale of 1-5 (1 = not confident at all, 5 = very confident).

The community pharmacists were asked to declare the source of information about dermatological issues and products. Moreover, the community pharmacists were asked to mention the commonly encountered dermatological problems in their practice. In addition, the community pharmacists were asked to mention the commonly dispensed dermatological products. Furthermore, the community pharmacists were asked to report their counseling/education practices regarding dermatological products. The community pharmacists were surveyed about their role in providing care for patients with dermatological issues.

2.7 Validity and Reliability

The internal consistency of the questionnaire was assessed using Cronbach's alpha statistics. The Cronbach's alpha of the items in the questionnaire was 0.82 which indicated acceptable internal consistency. The test re-test reliability of the questionnaire was assessed in a pilot study among 30 community pharmacists. In the pilot, the community pharmacists answered the questionnaire twice. Answers of the community pharmacists in 2 rounds were correlated. The Pearson's correlations coefficient was 0.91 which indicated excellent test-retest reliability.

2.8 Ethical Approval, Confidentiality, and Privacy

This study was conducted in adherence to the local and international ethical principles followed in scientific research including those in the Declaration of Helsinki. All aspects of the study protocol were approved by the Institutional Review Board of An-Najah National University. Before they could participate in this study, the community pharmacists were asked to sign an informed consent. The data were collected for

research purposes only. The confidentiality and privacy of the data were maintained throughout the study.

2.9 Statistical Analysis

The data were handled using Microsoft Excel Sheets. The data were entered into IBM Statistical Package for Social Sciences (SPSS) version 21.0. Categorical data were expressed as numbers (n) and percentages (%). Continuous data were expressed using medians with their corresponding interquartile range [IQR = lower quartile “Q1”, upper quartile “Q3”]. Differences in the distribution of data in the different categories were assessed using Chi-square or Fisher’s exact tests, as appropriate. Differences in the continuous data were assessed using Mann-Whitney U or Kruskal Wallis tests, as appropriate. A p-value < 0.05 was considered statistically significant.

Chapter Three

Results

3.1 Characteristics of the participants

In this study, a total of 385 community pharmacists returned complete questionnaires. The detailed characteristics of the community pharmacists are shown in Table 1.

Of the community pharmacists, 237 (61.6%) were female and 215 (55.8%) were younger than 30 years. More than half (53.5%) of the community pharmacists had a BSc in pharmacy and 112 (29.1%) had a PharmD. Of the community pharmacists, 245 (63.6%) obtained their pharmacy degree from a Palestinian university, 218 (56.6%) graduated with the basic pharmacy degree less than 10 years ago, and 156 (40.5%) have been in practice for 10 or more years. Of the community pharmacists, 235 (61.0%) practiced less than 40 hours/week, 195 (50.6%) practiced in community pharmacies in cities, and 232 (60.3%) have seen 10 or more cases with dermatological issues per week. Only 99 (25.7%) of the community pharmacists stated that they have received a dedicated course on dermatology during pharmacy training. These details are shown in Table 1.

Table 1

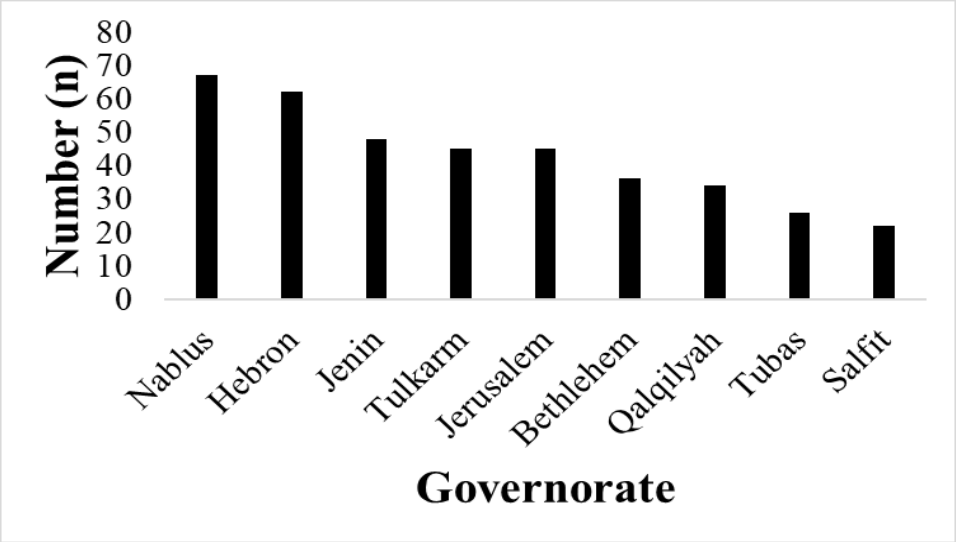
Characteristics of the community pharmacists (n = 385)

Variable	n	%
Gender		
Male	148	38.4
Female	237	61.6
Age (years)		
< 30	215	55.8
≥ 30	170	44.2
Academic degree		
BSc pharmacy	206	53.5
PharmD	112	29.1
MSc	45	11.7
PhD	22	5.7
Place from where the pharmacy degree was obtained		
Palestine	245	63.6
Abroad	140	36.4
Time since graduation with the basic pharmacy degree (years)		
< 10	218	56.6
≥ 10	167	43.4
Number of years in practice		
< 10	229	59.5
≥ 10	156	40.5
Practice hours/week		
< 40	235	61.0
≥ 40	150	39.0
Place of work		
Refugee camp	39	10.1
Village	151	39.2
City	195	50.6
Received a dedicated course on dermatology during pharmacy training?		
No	286	74.3
Yes	99	25.7
Number of cases with dermatological issues seen per week		
< 10	153	39.7
≥ 10	232	60.3

The community pharmacists were from the different regions/governorates of the West Bank of Palestine, including Nablus (17.4%), Hebron (16.1%), Jenin (12.5%), and Tulkarm (11.7%). The governorates in which the study was conducted are shown in Figure 1.

Figure 1

Governorates in which the study was conducted



3.2 Referring patients to consult a dermatologist

Of the community pharmacists, 367 (95.3%) stated that they refer patients to consult a dermatologist. The common reasons for referrals to dermatologists included being unsure of diagnosis, when a dermatologist supervision was needed, and when a prescription product was needed. These details are shown in Table 2.

The community pharmacists stated that they often referred pregnant women, breastfeeding women, pediatric patients, those with chronic diseases, and those with hormonal abnormalities. These details are shown in Table 2.

Of the community pharmacists, 35 (9.5%) referred less than 5% of their patients to a dermatologist and 51 (13.9%) referred more than 50% of their patients to a dermatologist. These details are shown in Table 2.

Table 2

Referrals to a dermatologist

Item	n	%
Referring patients to consult a dermatologist		
No	18	4.7
Yes	367	95.3
Reason for referral		
Unsure of diagnosis	354	96.5
Dermatologist supervision was needed	346	94.3
A prescription product was needed	341	92.9
Patient groups often referred to consult a dermatologist		
Pregnant women	261	71.1
Breastfeeding women	241	65.7
Pediatric patients	245	66.8
Chronic diseases	117	31.9
Hormonal disorders	111	30.2
Percentage of dermatological cases referred to a dermatologist		
< 5%	35	9.5
5-15%	186	50.7
16-50%	95	25.9
> 50%	51	13.9

3.2.1 Association between referral practices and the variables of the community pharmacists

The associations between referral practices and the variables of the community pharmacists using Chi-square/Fisher's exact tests. The community pharmacists who were female ($p = 0.043$), were in practice for 10 or more years ($p = 0.035$), received a dedicated course on dermatology during pharmacy training ($p = 0.045$), and have seen 10 or more dermatological cases seen per week ($p = 0.017$) practiced significantly more referrals compared to the community pharmacists who were male, practice for less than 10 years, did not receive a course on dermatology, and have seen less than 10 dermatological cases per week. These associations are shown in Table 3.

Table 3

Associations between referral practices and the variables of the community pharmacists

	Referring patients to a dermatologist				
	No		Yes		
Variable	n	%	n	%	p
Sex					
Male	11	2.9	137	35.6	0.043
Female	7	1.8	230	59.7	
Age (years)					
< 30	10	2.6	205	53.2	0.980
≥ 30	8	2.1	162	42.1	
Academic degree					
BSc pharmacy	10	2.6	196	50.9	0.497
PharmD	3	0.8	109	28.3	
MSc	3	0.8	42	10.9	
PhD	2	0.5	20	5.2	
Place from where the pharmacy degree was obtained					
Palestine	15	3.9	230	59.7	0.075
Abroad	3	0.8	137	35.6	
Time since graduation with the basic pharmacy degree (years)					
< 10	12	3.1	206	53.5	0.379
≥ 10	6	1.6	161	41.8	
Number of years in practice					
< 10	15	3.9	214	55.6	0.035
≥ 10	3	0.8	153	39.7	
Practice hours/week					
< 40	14	3.6	221	57.4	0.136
≥ 40	4	1.0	146	37.9	
Place of work					
Refugee camp	3	0.8	36	9.4	0.625
Village	7	1.8	144	37.4	
City	8	2.1	187	48.6	
Received a dedicated course on dermatology during pharmacy training					
No	17	4.4	269	69.9	0.045
Yes	1	0.3	98	25.5	
Number of dermatological cases seen per week					
< 10	12	3.1	141	36.6	0.017
≥ 10	6	1.6	226	58.7	

3.3 Confidence of the community pharmacists in providing education/counseling to patients with dermatological issues

When the community pharmacists were asked to rate their confidence in providing education/counseling to patients with dermatological issues on a scale of 1-5, the median score was 3.0 [IQR = 2.0, 4.0]. This indicated that the community pharmacists had moderate confidence in their ability to provide education/counseling to patients with dermatological issues.

The sources of knowledge from where the community pharmacists obtained information about dermatological issues and products included reference books and formal education, online databases/journals, pharmaceutical/medical representatives/delegates, social media, and mobile applications. The detailed answers of the community pharmacists are shown in Table 4.

Table 4

Sources of information about dermatological issues and products

Source	n	%
Reference books and formal education	185	48.1
Online databases/journals	243	63.1
Pharmaceutical/medical representatives/delegates	232	60.3
Social media	115	29.9
Mobile applications	89	23.1

3.3.1 Association between confidence ratings and the variables of the community pharmacists

The differences in the confidence ratings were investigated as the community pharmacists were categorized based on the demographic and practice characteristics. Mann-Whitney U and Kruskal Wallis tests shows that the community pharmacists who were female ($p = 0.036$), had a PharmD degree ($p < 0.001$), were in practice for 10 or more years ($p = 0.047$), received a dedicated course on dermatology during pharmacy training ($p < 0.001$), and have seen 10 or more dermatological cases seen per week ($p < 0.001$) rated their confidence in providing education/counseling to patients with dermatological issues significantly higher that the community pharmacists who were male, had BSc in pharmacy, practice for less than 10 years, did not receive a course on dermatology, and have seen less than 10 dermatological cases per week. These differences are shown in Table 5.

Table 5

Differences in confidence ratings of the community pharmacists as categorized based on the demographic and practice characteristics

	Confidence rating			
Variable	Q1	Median	Q3	p
Sex				
Male	2.0	3.0	4.0	0.036
Female	3.0	3.0	4.0	
Age (years)				
< 30	2.0	3.0	4.0	0.381
≥ 30	2.0	3.0	4.0	
Academic degree				
BSc pharmacy	2.0	3.0	3.0	< 0.001
PharmD	4.0	4.0	4.0	
MSc	1.0	3.0	4.0	
PhD	1.0	3.0	5.0	
Place from where the pharmacy degree was obtained				
Palestine	2.0	3.0	3.0	0.293
Abroad	1.0	4.0	4.0	
Time since graduation with the basic pharmacy degree (years)				
< 10	2.0	3.0	3.0	0.085
≥ 10	1.0	4.0	4.0	
Number of years in practice				
< 10	2.0	3.0	3.0	0.047
≥ 10	1.0	4.0	4.0	
Practice hours/week				
< 40	2.0	3.0	3.0	0.105
≥ 40	1.0	4.0	4.0	
Place of work				
Refugee camp	3.0	3.0	3.0	0.196
Village	1.0	3.0	4.0	
City	3.0	3.0	4.0	
Received a dedicated course on dermatology during pharmacy training				
No	2.0	3.0	3.0	< 0.001
Yes	4.0	5.0	5.0	
Number of dermatological cases seen per week				
< 10	2.0	2.0	4.0	< 0.001
≥ 10	3.0	3.0	4.0	

3.4 Commonly encountered dermatological problems

When the community pharmacists were asked to mention the commonly encountered dermatological problems in their practice, acne (93.2%), dry skin (84.2%), nail problems (80.0%), and fungal infections (73.2%) were mentioned. The frequencies of reporting these issues are shown in Table 6.

Table 6

Commonly encountered dermatological problems

Dermatological problems	n	%
Acne	359	93.2
Dry skin	324	84.2
Nail problems	308	80.0
Fungal infections	282	73.2
Skin rash	264	68.6
Skin blisters	234	60.8
Scalp problems	211	54.8
Lip problems	194	50.4
Sunburn	185	48.1
Eczema/Dermatitis	162	42.1
Candidiasis	141	36.6
Insect bites	125	32.5
Head lice	106	27.5
Psoriasis	98	25.5
Alopecia	94	24.4

3.5 Commonly dispensed dermatological products

When the community pharmacists were asked to mention the commonly dispensed dermatological products, combination products containing antibiotics/ antifungals/ steroids (87.8%), topical antibiotics (70.4%), topical steroids (58.7%), and topical retinoids (53.5%) were mentioned. The frequencies of reporting these dispensed products are shown in Table 7.

Table 7

Commonly dispensed dermatological products

Dermatological products	n	%
Combination products containing antibiotics/antifungals/steroids	338	87.8
Topical antibiotics	271	70.4
Topical steroids	226	58.7
Topical retinoids	206	53.5
Vitamins/vitamin derivatives/pantothenic acid	195	50.6
Topical antihistamines/anticholinergics	192	49.9
Others products	40	10.4

3.5.1 Counseling/education for the patients about the dermatological products

When the community pharmacists were asked to report their counseling/education practices regarding dermatological products, the right topical application techniques, right amount of the dermatological product to be applied, and frequency of topical application were reported. The frequencies of reporting these counseling/education practices are shown in Table 8.

Table 8

Counseling/education for the patients about the dermatological products

Counseling/education	n	%
Right topical application technique	236	61.3
Right amount of the dermatological product to be applied	198	51.4
Frequency of topical application	192	49.9

3.6 Attitudes of the community pharmacists regarding their role in providing care for patients with dermatological issues

When the community pharmacists were surveyed about their role in providing care for patients with dermatological issues, the majority of the community pharmacists agreed or strongly agreed that they should be consulted by patients with dermatological conditions, they have a valuable role in assisting patients with dermatological conditions, they are an important source of advice/counseling/education on medications use for dermatological conditions, and the pharmacy-based dermatology services are helpful for patients with dermatological conditions. The answers of the community pharmacists on the attitude items are shown in Table 9.

Table 9

Answers of the community pharmacists on the attitude items

#	Attitudes	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
		n	%	n	%	n	%	n	%	n	%
1	Pharmacist should be the first healthcare provider to be consulted by patients with dermatological conditions	7	1.8	21	5.5	98	25.5	143	37.1	116	30.1
2	Pharmacists have a valuable role in assisting patients with dermatological conditions	6	1.6	19	4.9	85	22.1	151	39.2	124	32.2
3	Pharmacists are an important source of advice/counseling/education on medications use for dermatological conditions	8	2.1	15	3.9	94	24.4	164	42.6	104	27.0
4	Pharmacy-based dermatology services are helpful for patients with dermatological conditions	9	2.3	29	7.5	142	36.9	110	28.6	95	24.7

3.6.1 Association between attitudes of the community pharmacists regarding their role in providing care for patients with dermatological issues and their variables

The differences in the attitude scores were investigated as the community pharmacists were categorized based on the demographic and practice characteristics. Mann-Whitney U and Kruskal Wallis tests shows that the community pharmacists who were female ($p < 0.001$), had a PharmD degree ($p < 0.001$), received their basic pharmacy degree 10 or more years ago ($p = 0.004$), were in practice for 10 or more years ($p = 0.003$), practiced for 40 or more hours/week ($p = 0.001$), received a dedicated course on dermatology during pharmacy training ($p < 0.001$), and have seen 10 or more dermatological cases seen per week ($p < 0.001$) had significantly higher attitude scores than the community pharmacists who were male, had BSc in pharmacy, received their basic pharmacy degree less than 10 years ago, were in practice for less than 10 years, practiced less than 40 hours/week, did not receive a course on dermatology, and have seen less than 10 dermatological cases per week. These differences are shown in Table 10.

Table 10

Differences in attitude scores of the community pharmacists as categorized based on the demographic and practice characteristics

Variable	Q1	Median	Q3	p
Sex				
Male	12.0	14.0	17.0	< 0.001
Female	15.0	16.0	20.0	
Age (years)				
< 30	12.0	16.0	16.0	0.083
≥ 30	12.0	15.5	20.0	
Academic degree				
BSc pharmacy	12.0	14.5	16.0	< 0.001
PharmD	16.0	19.0	20.0	
MSc	8.0	16.0	20.0	
PhD	8.0	15.0	20.0	
Place from where the pharmacy degree was obtained				
Palestine	13.0	15.0	16.0	0.117
Abroad	11.0	17.0	20.0	
Time since graduation with the basic pharmacy degree (years)				
< 10	12.0	15.0	16.0	0.004
≥ 10	12.0	16.0	20.0	
Number of years in practice				
< 10	12.0	15.0	16.0	0.003
≥ 10	12.0	16.5	20.0	
Practice hours/week				
< 40	12.0	15.0	16.0	0.001
≥ 40	12.0	17.0	20.0	
Place of work				
Refugee camp	15.0	15.0	16.0	0.200
Village	12.0	15.0	20.0	
City	14.0	16.0	17.0	
Received a dedicated course on dermatological during pharmacy training				
No	12.0	15.0	16.0	< 0.001
Yes	20.0	20.0	20.0	
Number of dermatological cases seen per week				
< 10	12.0	12.0	20.0	< 0.001
≥ 10	15.0	16.0	19.0	

Chapter Four

Discussion

Community pharmacies can serve as the first patient point-of-contact for many common aliments including some dermatological health issues (56-58). This is notably true when pharmacists in community pharmacies can make referrals, recommend products, counsel, and educate patients about the available therapeutic options and the best ways to use them. This is the first study that was conducted to assess the perceptions and the roles of the community pharmacists in the management of common dermatological problems in Palestine. The findings of this study could be informative to the practicing community pharmacists, dermatologists, and other decision-makers in pharmacy education and healthcare authorities.

4.1 Referral practices

In this study, the vast majority of the community pharmacists referred their patients to consult dermatologists. The common reasons for referrals including being unsure of the diagnosis, when supervision by a dermatologist was needed, and when a prescription product was needed. Moreover, the community pharmacists stated that the community pharmacists often referred pregnant women, breastfeeding women, pediatric patients, patients with chronic diseases, and patients who received hormonal therapies. These findings indicated adequate referral practices by the community pharmacists in Palestine. These findings were consistent with those that were reported among community pharmacists elsewhere (11, 57, 59).

Although many of the dermatological products are over-the-counter, it is important to note that dermatologists are in the best position to diagnose and recommend treatments for the dermatological health issues. Therefore, community pharmacists often need to refer their patients to consult dermatologists when there is a need. Community pharmacists can play a key role in making referrals to dermatologists. It is well-established that dermatologists have extensive knowledge and training that enable them to diagnose and manage different dermatological health conditions. When patients are referred to specialized dermatological care, community pharmacists can ensure that their patients would receive the most appropriate and specialized care. It is also important to note that skin health conditions can be complex and might need specialized

and precise diagnostic tests/procedures. Dermatologists are in key position to use their expertise and decide on the most appropriate tools to be used to diagnose and treat these skin health conditions. Therefore, using the services of dermatologists can improve the outcomes of the patients. Similarly, dermatologists can provide consistent follow up care for the patients with dermatological health conditions. This can also ensure the provision of comprehensive care, including adjustments of the treatments in case needed. However, many minor dermatological issues and skin aliments can be managed using over-the-counter dermatological products. Moreover, community pharmacists are experts in medications and are in key position to recommend dermatological products, counsel, and educate the patients on the best ways to use these products. Probably, fostering a collaborative relationship between the community pharmacists and dermatologists could improve the care and outcomes of patients with dermatological health conditions (56, 57, 60). Through this collaborative approach to healthcare, patients are better informed about the best approaches to care for their skin, use preventive measures to reduce recurrence of skin health issues, and lifestyle changes that might be needed to improve skin health conditions.

In this study, referral practices were associated with female sex, longer practice years, receiving a dedicated course on dermatology during pharmacy training, and seeing more patients with dermatological health issues. These findings could be explained by increased clinical experience as the pharmacists who practiced for longer years could have developed enhanced clinical judgement and confidence in recognizing complex dermatological health issues that need to be referred to dermatologists (37). Those pharmacists could have improved knowledge and experience with the limitations of the over-the-counter products that can be used to alleviate such dermatological health conditions. Moreover, the community pharmacists who received a dedicated course on dermatology during their pharmacy training could have been more equipped with adequate awareness of the different dermatological health conditions compared to the community pharmacists who did not receive adequate dermatological education and training (16). Therefore, better awareness could be associated with more referrals. Additionally, the community pharmacists who regularly encountered more patients with dermatological health issues could have developed better awareness and understanding of the challenges dermatological health issues could cause. The better awareness and understanding could have increased the comfort level of the community pharmacists to

make referrals to the dermatologists. The findings of this study were consistent with those previously reported that female healthcare professionals including pharmacists are more engaged in providing patient-centered care. Therefore, female patients were more proactive and made more referrals to the dermatologists. Moreover, the community pharmacists who have reported encountering a larger volume of patients with dermatological health conditions were more likely to make more referrals to the dermatologists. Those community pharmacists could have been more likely to encounter more complex dermatological cases that need consultations with dermatologists for further assessment, diagnosis, and treatment.

4.2 Confidence in providing patient counseling/education

In this study, the community pharmacists expressed modest confidence in their ability to provide education/counseling to patients with dermatological issues. Confidence was associated with female sex, having a PharmD, longer years in practice, seeing a large volume of patients with dermatological issues, and having received a dedicated course on dermatology during pharmacy training. Female healthcare providers were more likely to practice patient-centered care (37, 61).

Therefore, they could be more likely to express higher confidence in providing counseling and education to patients who present with dermatological health issues. These findings were consistent with those that were previously reported on the tendency of excelling in interprofessional skills and expression of empathy among female healthcare providers. It is well-established that these skills are essential for providing adequate counseling and education to patients (62). Moreover, the pharmacists who had a PharmD degree have received more advanced clinical training compared to those who have received a Bachelor of pharmacy degree (63).

This clinical training could have contributed to enhancing the confidence of those pharmacists in providing adequate counseling and education to patients, including those with dermatological health issues (64). Similarly, the community pharmacists who accumulated longer practice experience could have encountered a larger volume of patients and complex cases of patients with dermatological health issues. The patients who encountered larger volumes of patients also reported higher confidence in providing counseling and education to patients who present with dermatological health

issues. These findings could indicate that encountering a diversity of patient cases with dermatological health issues could boost confidence in providing counseling and education to patients who present with dermatological health issues. Moreover, receiving a dedicated course on dermatology during pharmacy training was also shown to boost confidence in providing counseling and education to patients who present with dermatological health issues.

4.3 Commonly encountered dermatological health issues

In this study, acne, dry skin, nail problems, fungal infections, skin rash, skin blisters, scalp problems, lip problems, sunburn, eczema/dermatitis, candidiasis, insect bites, head lice, psoriasis, and alopecia were dermatological health issues encountered in community pharmacy practice. These findings indicate that community pharmacists often encounter a wide range of dermatological health issues (37). Many of these dermatological health issues can be managed using a variety of over-the-counter products that are available in community pharmacies (65). However, some of these dermatological health issues could be considered complex and require referral to a dermatologist for further assessment, diagnosis, treatment, and follow-up (37, 38). Although assessment of the prevalence of these dermatological health issues was beyond the scope of this study, the reported conditions encountered in community pharmacy practice indicate that these conditions could negatively impact the quality of life of the affected patients. Community pharmacists are experts in the different pharmaceutical and cosmeceutical products available to manage these conditions. Moreover, the community pharmacists can provide counseling and education to patients about the best ways to use these pharmaceutical and cosmeceutical products. However, it is important to note that some conditions like severe cases of acne, eczema, candidiasis, psoriasis, and alopecia require referral to dermatologists. Therefore, fostering a more collaborative approach to care in which community pharmacists and dermatologists collaborate can improve the outcomes of the patients who present with dermatological health issues. Given the dermatological health issues reported, community pharmacists need to be continuously updated on the latest treatment guidelines of common dermatological health issues.

4.4 Commonly dispensed dermatological products

Combination products that contain antibiotics, antifungals, and corticosteroids are commonly used to manage various dermatological health conditions including bacterial and fungal infections in addition to inflammatory conditions. These products offer the convenience of managing various conditions that involve infections and inflammation (66). Moreover, dermatological products containing topical antibiotics including fusidic acid and/or mupirocin are also commonly used to treat localized skin dermatological infections. In addition, topical corticosteroids are also commonly used to manage a variety of inflammatory skin conditions including psoriasis, eczema, and contact dermatitis. These products are known to reduce inflammation, redness, and itching that are common in many dermatological health conditions (66).

Furthermore, topical retinoids are also commonly used to manage dermatological conditions including acne. These agents are known to promote skin cell turnover and prevent clogging skin pores. Moreover, these agents are helpful in other dermatological conditions including hyperpigmentation and photoaging. Derivatives of vitamins and vitamin analogues are antioxidants, moisturizing agents, and skin-regenerative promoters (67). These active ingredients are commonly used in various dermatological formulations and are promoted to improve the appearance and health of the human skin. Topical antihistamines and anticholinergics are commonly used to relief discomfort and itching in different allergic conditions, insect bites, and other dermatological conditions including hives (68).

Topical agents are known to relief local symptoms while minimizing systemic exposure. The dermatological products reported to be commonly dispensed by the community pharmacists in this study reflected the variety of dermatological health conditions reported to be commonly encountered by the community pharmacists in their daily practice. Pharmacy schools, educators, and decision-makers in the pharmacy professional bodies need to consider these results to improve knowledge of the practicing and future community pharmacists in order to provide counseling and education to patients on the best ways to use these dermatological products. Promoting safe and effective use of medications, optimizing the outcomes of pharmacotherapy, and ensuring patient satisfaction and outcomes are core responsibilities in community pharmacy practice.

4.5 Counseling/education practices

The community pharmacists reported that they commonly counseled/educated the patients on the right topical application of the dermatological products, right amounts to be applied, and the frequency of application. Counseling/educating the patients on the appropriate application of the dermatological products to maximize their efficacy is a core responsibility of community pharmacists who dispense these products (69). Community pharmacists are required to provide clear instructions to patients who how to apply the dermatological products to empower the patients to take active role in caring for their health conditions and adhere to the recommended treatment plan (69, 70). Similarly, counseling/educating the patients on the right amount of the dermatological products to be applied and the frequency of application could be crucial for achieving the optimal outcomes of the treatment. It is well-established that applying too little amount of a dermatological product could lead to treatment failure and applying too much of a dermatological product could be associated with adverse effects (71). The community pharmacists need to counsel/educate their patients and make sure that the patients understood the provided instructions. It has been argued that appropriate patient counseling/education can decrease the risk of misuse of dermatological products. Moreover, this can be associated with less adverse effects and irritations. Moreover, some dermatological products need specific application techniques and frequencies. Therefore, community pharmacists might need to tailor their counseling/education sessions to the specific patient/product as needed.

4.6 Attitudes toward their roles in providing care for the patients

The community pharmacists expressed positive attitudes toward being consulted by the patients with dermatological health conditions. Moreover, the community pharmacists expressed positive attitude toward their roles in assisting patients with dermatological conditions. In addition, the community pharmacists viewed themselves as an important source of advice/counseling/education on medications use for dermatological conditions. Furthermore, the community pharmacists expressed positive attitude toward the value of pharmacy-based dermatology services for patients with dermatological conditions. These findings reflected a growing recognition of the expertise of community pharmacists in providing patient-centered care beyond the traditional dispensing roles of the community pharmacists. Community pharmacists are commonly

regarded as accessible highly trained healthcare providers with expertise in medications, including dermatological products (37). Community pharmacists can offer advice, counseling/education, recommendations, and make referrals to improve the outcomes of the patients with various dermatological health conditions.

Positive attitudes were associated with female sex, having a PharmD, longer practice years, longer practice shift hours, and seeing larger volumes of patients. These findings could be explained by the likelihood of expressing empathy toward patients, exposure to more complex dermatological cases, and receiving more specialized clinical training.

4.7 Implications of the findings on the future practice

The findings of this study could have the following implications on future practice:

- Improving training: Practices of community pharmacists could be improved through the integration of dermatology dedicated courses into the pharmacy curricula. These courses should be specifically designed to improve knowledge and skill of the community pharmacists.
- Development of referral guidelines: Professional bodies should develop standardized referral guidelines that could be used by community pharmacists to ensure timely and appropriate referrals of patients to dermatologists, notably, for complex cases and when the community pharmacists are unsure of the diagnosis.
- Fostering interprofessional collaborations: Efforts should be made to foster effective communication and interprofessional collaborations between the community pharmacists and dermatologists to enable and facilitate seamless and more patient-centered care, including collaborative decision-making and exchange of complimentary expertise.
- Continuing education: Continuing education opportunities to improve knowledge of dermatological health issues, provision of patient counseling and education, and keeping community pharmacists updated with latest discoveries and advancements in the field of dermatology.
- Provision of patient-centered care: More efforts should be made to emphasis on the provision of patient-centered care through the active involvement of patients into their therapeutic decisions, addressing their concerns, and provision of tailored patient counseling and education on dermatological products and treatment plans.

– Implementation of quality assurance measures: Quality assurance measures can be implemented to ensure accurate and appropriate dispensing of dermatological products in adherence to the prescribing guidelines. The quality assurance measures might also ensure adherence to the appropriate patient counseling and education protocols. These might improve patient satisfaction and outcomes.
– Engagement of the community: Community pharmacists might engage the local community through educational outreach programs, awareness campaigns, and workshops to promote knowledge and early diagnosis/detecting of dermatological health issues.
– Integration of technology into practice: Community pharmacists might use smartphone applications and other online resources to provide information and counseling or educational materials to support managing dermatological health issues.
– Development and implementation of standard documentation: Community pharmacists might develop standard documentation procedures/protocols to maintain comprehensive records of the consultations with the patients and dermatologists, referrals, and follow up care services. These documentations might facilitate the continuity of care and interdisciplinary communications.
– Implementation of monitoring outcomes programs: Community pharmacists might develop and implement systems to monitor the outcomes of the patients and their satisfaction with the pharmacy-based dermatological care services. These programs might also help improve the continuity of care and patient outcomes.

4.8 Implications of the findings on patient counseling and education

The findings of this study could have the following implications on patient counseling and education:

– Empowerment of the patients: Community pharmacists might impower patients by providing them with comprehensive counseling and education on their dermatological health conditions, the available therapeutic options, strategies to self-care, and to actively participate in decision-making relevant to their healthcare.
– Lifestyle changes: Community pharmacists can counsel and educate patients on the lifestyle changes to make in order to maintain skin health, hasten recover, and prevent recurrence. Counseling might include skin care routine, protection from sun

light, and appropriate dietary practices to improve the outcomes of the patients and prevent recurrence of the disease.

- Promoting adherence to the treatment: Community pharmacists might counsel and educate the patients on the importance of adhering to the treatment plan and following up with the treatment. Given the fact that community pharmacists are easily accessible to patients including those with dermatological health issues.
- Management of the adverse effects: Community pharmacists might counsel and educate the patients on the potential adverse effects of the dermatological products and the measures that can be followed to avoid/minimize them. This can foster informed decision-making and tolerance of the treatment outcomes.
- Selection of the products: Community pharmacists might counsel and educate the patients on the appropriate dermatological products based on the preferences and needs of the patients and their skin type. This might help promote satisfaction of the patients and optimal therapeutic outcomes.
- Monitoring parameters: Community pharmacists might counsel and educate the patients on the main parameters that the patients need to monitor while at home. These parameters might include progression of the symptoms, adverse effects, and efficacy of the treatment. This might enable early detection of treatment-related complications or treatment failures.
- Awareness of risks: Community pharmacists might counsel and educate the patients on the risks of making self-diagnosis and self-treatment decisions using dermatological products. This might also include stressing on the importance of seeking professional help and guidance for accurate assessment and management of the dermatological health issues.
- Cultural sensitivity: Community pharmacists might tailor their counseling and education sessions/materials to accommodate cultural preferences, norms, and health literacy levels. This might ensure effective mutual communication and understanding.
- Accessibility of the resources: Community pharmacists might counsel and educate the patients on the reliable and accessible educational resources, including online resources, pamphlets, videos, and other resources to reinforce learning and education.

– Supporting follow up: Community pharmacists might offer supportive efforts to address the concerns of the patients and answer their questions and inquires. This might improve and reinforce adherence to the treatment plan.

4.9 Implications of the findings on future research

The findings of this study could have the following implications on patient future research:

– Investigation of the long-term outcomes: Community pharmacists and researchers might design projects to investigate the patient-reported outcomes and the long-term clinical outcomes of the provided pharmacy-based dermatological services. This might include assessing their impact on disease management and quality of life of the patients.
– Cost-effectiveness: Community pharmacists and researchers might design projects to assess and compare the cost-effectiveness and economic implications of integrating pharmacists into dermatological care team. This might also include assessing the potential savings in the healthcare system.
– Interventional studies: Community pharmacists and researchers might design projects to evaluate the community pharmacist-led interventions to improve the outcomes of the patients and reduce utilization of the healthcare system by patients with dermatological health issues.
– Integration of technology: Community pharmacists and researchers might design projects to assess the impact of integrating technology like smartphone health applications and other forms of technology in expanding the access to dermatological care services. This might include assessing the satisfaction and outcomes of the patients.
– Perspectives of the patients: Community pharmacists and researchers might design projects to incorporate the perspectives and preferences of the patients to ensure the provision of optimal and patient-centered pharmacy-based dermatological services.
– Educational interventions: Community pharmacists and researchers might design projects to assess the effectiveness of different educational and counseling interventions including counseling sessions, workshops, and smartphone applications in empowering the patients to effectively manage their dermatological health conditions.

– Disparities in healthcare: Community pharmacists and researchers might design projects to assess the disparities in accessing dermatological care services and the outcomes in resource-limited settings and among underserved patients. These might include rural areas, refugee camps, and patients who belong to the low-income groups.
– Training of the community pharmacists: Community pharmacists and researchers might design projects to assess the impact of training and educating community pharmacists in dermatology on the knowledge, confidence, and practice with regard to patients with dermatological health issues.
– Quality improvement projects: Community pharmacists and researchers might design projects to develop and validate key quality/performance indicators for the community pharmacy-based dermatological services. These might be used to benchmark and improve quality and performance, monitor the delivery of services, and ensure continuous quality improvement initiatives.
– Using interdisciplinary models: Community pharmacists and researchers might design projects to assess the effectiveness of integrating community pharmacists, dermatologists, and primary healthcare providers to foster collaborative care for dermatological conditions.

4.10 Recommendations

Based on the findings of this study, the following recommendations can be made:

– Standardization: There is a need to develop and standardize referral protocols and educational resources that can be used to ensure consistent and quality across community pharmacy practice settings.
– Collaborations: There is a need to foster interdisciplinary collaborations through formal partnership and interdisciplinary care models that allow sharing expertise and decision-making between the healthcare providers while caring for patients with dermatological health issues.
– Adopting a patient-centered approach to care: There is a need prioritize and adopt a more patient-centered care to actively involve patients in the decisions related to their healthcare. Moreover, patient-centered and tailored counseling and education sessions that address the concerns, needs, and preferences of the individual patients are needed.

- Continuous training: There is a need to foster and support professional development of the community pharmacists through scheduled and pre-planned training, workshops, and access to the latest evidence-based resources in dermatology.
- Local community engagement: There is a need to engage the stakeholders in the local community including patients, their caregivers, local health authorities, and others to increase the awareness about the potential roles of the community pharmacists in caring for patients with dermatological heath conditions.
- Measurement of outcomes: There is a need to implement systems to collect and analyze data relevant to the outcomes and evaluate the effectiveness of the community pharmacy-based dermatological services.
- Policy advocacy: There is a need to advocate for changes in policies that would promote recognizing and supporting the roles of community pharmacists in providing comprehensive dermatological care services.
- Integration of technology: There is a need to embrace the advancements in technology to improve counseling and education and support of patients with dermatological health issues through smartphone applications and other forms of technological support and remote consultations.
- Cultural competencies: There is a need to provide training and access of the community pharmacists to different resources to enhance their cultural competencies and address their diverse needs of patients.
- Research funding: There is a need to allocate more resources to fund research initiatives to assess the impact of community pharmacist-led interventions on the outcomes and satisfaction of patients with dermatological health issues.

4.11Conclusion

In conclusion, the findings of this study showed that community pharmacists in Palestine provided care services to patients with dermatological health issues. The findings of this study also showed that community pharmacists often referred patients with complex dermatological health issues to consult dermatologists, notably, when prescription dermatological products were required. This might suggest that community pharmacists need to be integrated with the multidisciplinary team to care for patients with dermatological health issues. The study showed that female community pharmacists, those with longer years of practice, and those who have interacted with

more complex dermatological cases were more likely to make more referrals, express confidence in providing counseling and education to patients with dermatological health issues, and express positive attitudes toward providing dermatological care to patients. Future studies are need to assess the impact of community pharmacist-led interventions on the outcomes and satisfaction of patients with dermatological health issues.

List of Abbreviations

Abbreviation	Meaning
AA	Alopecia areata
CDI	Clostridium difficile infection
CFA	Confirmatory factor analysis
CI	Confidence interval
DLQI	Dermatology Life Quality Index
DPAI	Drug-penicillin allergy interview
EFA	Exploratory factor analysis
EHR	Electronic health record
GP	General practitioner
IQR	Interquartile range
IRB	Institutional Review Board
LDOM	Low-dose oral minoxidil
OR	Odds ratio
OTC	Over the counter
SPSS	Statistical Package for Social Sciences
SPSS	Statistical Package for Social Sciences
US	United States

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Appendices

Appendix A

The Arabic questionnaire

منظور صيادلة المجتمع ودورهم في معالجة المشاكل الجلدية الشائعة في فلسطين: دراسة مقطعية (1)معلومات عن الصيدلي في صيدلية المجتمع	
☐ذكر ☐ أنثى	الجنس
	العمر
☐نابلس ☐رام الله ☐طولكرم ☐جنين ☐الخليل ☐بيت لحم ☐قلقيلية ☐سلفيت ☐ غزة	المحافظة
☐دبلوم صيدلة (مساعد صيدلي) ☐بكالوريوس صيدلة ☐دكتور صيدلة ☐ماجستير . ☐دكتوراة ☐ أخرى: _____	الدرجة العلمية
	المؤسسة التعليمية التي تخرجت منها (جامعة، كلية)
	المدة منذ التخرج (سنوات، أشهر)
	عدد سنوات الممارسة كصيدلي في صيدليات المجتمع
	ساعات العمل في الصيدلية
☐مدينة ☐ قرية	منطقة العمل
☐نعم ☐ لا في حال الإجابة نعم، يرجى تحديد اسم المساق:	هل حصلت على أي كورس (مساق) عن علاج الأمراض الجلدية خلال فترة دراستك؟
(2) تصرفات الصيادلة نحو الأمراض الجلدية في الصيدلة المجتمعية	
☐غير متأكد من التشخيص ☐غير متأكد من العلاج (التشخيص معروف) ☐يحتاج المرض إلى إشراف طبيب جلدية ☐المرض يتطلب دواء بوصفة طبية	متى تحيل المريض لطبيب الأمراض الجلدية؟

	□أخرى:				
ما مجموعة المرضى التي من المرجح أن تحيلها إلى الطبيب؟ (يمكنك اختيار عدة اختيارات)	□حامل □الأمهات المرضعات. □أطفال □المرضى الذين تعرضوا لسوء المعاملة سابقًا. □المرضى المزمنون. □ مرضى الاضطرابات الهرمونية. □ أخرى: _____				
ما مدى ثقتك في التعامل مع طلبات المشورة من المرضى الذين يعانون من مشكلة جلدية؟	□ 1 أقل ثقة	□ 2	□ 3	□ 4	□ 5 أعلى ثقة
بشكل تقريبي ، ما هي نسبة الحالات المتعلقة بمشاكل الجلد التي تحيلها إلى الطبيب؟	□ <5%	□ 6-15%	□ 15-50%	□>50%	
ما هو مصدر المعلومات الخاص بك لعلاج مرضى الأمراض الجلدية؟	□ مندوب طبي □ الإنترنت (Google و Wikipedia ومواقع المعلومات الطبية العامة) □ تطبيقات الهاتف المحمول (Medscape، Lexicomp، ...) □ التعليم الرسمي (بكالوريوس ، دكتور صيدلة ، ماجستير ، ...) □ أخرى:				
(3) ممارسات الصيادلة في الصيدلية مع المرضى الذين يعانون من مشاكل جلدية شائعة					
في المتوسط ، كم عدد حالات الأمراض الجلدية التي تواجهها خلال دوامك؟	_____حالة مرضية في دوام اليوم الواحد				
ما هي المشكلات التي تواجهك مع المرضى فيما يتعلق بالالتزام بالعلاج؟	□ مشاكل عصبية □ التقدم في السن □ علاج معقدة □ تناول كمية جرعة خاطئة □استعمال موضعي خاطئ □استعمال الدواء عدد مرات خاطئة				
كم مرة تصف الأدوية التالية للاضطرابات الجلدية؟	غالبا (معظم الأيام)	كثير من الأحيان (أكثر من 3 مرات بالاسبوع)	من حين لآخر (1-3 مرات بالأسبوع)	نادرا (أقل من مرة بالشهر)	أبداً
Decomb, Dermacombin, …					

(Gramicidin 0.25 mg Neomycin (as sulphate) 2.50 mg Nystatin 100,000 I.U. Triamcinolone acetonide 1.00 mg)					
Fusidic acid (Fusidin, Fusidin H, Fusicort, .. etc)					
Topical steroid (Clobetasol, betamethasone, …)					
Topical retinoid					
مستحضرات عشبية جلدية (Mebo, Megane, Avomeb, …)					
مضادات حساسية موضعية (Demistil, Fenistil, medhist, …)					
Dexpanthenol products					
مضادات فطريات موضعية (Terbinafine, Miconazole, …)					
أي من المشاكل الجلدية التالية تصادفها في الصيدلية بشكل منتظم؟	غالبا (معظم الأيام)	كثير من الأحيان (أكثر من 3 مرات بالاسبوع)	من حين لآخر (1-3 مرات بالأسبوع)	نادرا (أقل من مرة بالشهر)	أبداً
جفاف بالجلد					
قمل					
ضربة الشمس					
لدغات الحشرات					
طفح جلدي – للكبار					
اكزيما					

التهاب جلدي					
الصدفية					
الثعلبة (تساقط الشعر)					
مشاكل في الشفة					
حب الشباب					
عدوى فطرية (مثل القدم الرياض)					
مشاكل في الرأس وفروة الرأس					
مشاكل في الأظافر					
عدوى فطر كانديدا (المهبل أو الفم)					
بثور					
طفح جلدي – الأطفال					

(4) مسؤولية الصيادلة المتصورة فيما يتعلق بأمراض الجلد					
ما مدى توافقك مع العبارات التالية فيما يتعلق بممارسة الصيدلي تجاه الأمراض الجلدية الشائعة؟	لا أوافق بشدة	لا أوافق	لا أوافق ولا أعارض	أوافق	أوافقً
يجب على المرضى الذين يعانون من مشاكل جلدية طلب المشورة من الصيدلي أولاً.					
يلعب الصيادلة دورًا مهمًا في علاج مرضى الأمراض الجلدية.					
الصيادلة مصدر ممتاز للمعلومات حول كيفية استخدام الأدوية لمشاكل الجلد.					
يستفيد المرضى الذين يعانون من مشاكل جلدية من رعاية الأمراض الجلدية في					

الصيدليات.					
يميل المرضى إلى البحث عن الصيدلي أولاً لتوفير التكلفة وليس بسبب خبرة الصيدلي					

جـامعـــة النجاح الوطنية

كليـــة الدراســـات العليـــا

تصورات صيادلة المجتمع ودورهم في معالجة المشاكل الجلدية الشائعة في فلسطين: دراسة مقطعية

إعداد

زهدية صالح

إشراف

د. رمزي شواهنه

قدمت هذه الرسالة استكمالا لمتطلبات الحصول على درجة الماجستير في الصيدلة السريرية، من كلية الدراسات العليا، في جامعة النجاح الوطنية، نابلس– فلسطين.

2024

تصورات صيادلة المجتمع ودورهم في إدارة المشاكل الجلدية الشائعة في فلسطين: دراسة مقطعية

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الملخص

خلفية الدراسة: الأمراض الجلدية من المشاكل الصحية الشائعة . تهدف الدراسة إلى استكشاف تصورات ودور صيادلة المجتمع في إدارة المشاكل الجلدية الشائعة في فلسطين.

منهجية الدراسة: تم تنفيذ الدراسة بتصميم مقطعي. أجريت الدراسة في صيدليات مجتمعية موزعة في محافظات الضفة الغربية. وكانت أداة جمع البيانات عبارة عن استبيان خاص .

نتائج الدراسة: شارك 385 صيدلي. ومن بينهم ، ذكر 367 (95.3%) يقومون بإحالة المرضى لاستشارة طبيب مختص وذلك عند عدم التأكد من التشخيص، ومتى تكون هناك حاجة إلى إشراف طبيب وإلى منتج موصوف طبيًا. صيادلة المجتمع من الإناث (ع = 0.043)، كانوا يمارسون المهنة لمدة 10 سنوات أو أكثر (ع = 0.035)، تلقوا دورة مخصصة عن الأمراض الجلدية أثناء التدريب (ع = 0.045)، وشاهدوا 10 حالات جلدية أو أكثر. في الأسبوع (ع = 0.017) مارسوا إحالات أكثر مقارنة بصيادلة المجتمع الذكور، ومارسوا المهنة لمدة أقل من 10 سنوات، ولم يتلقوا دورة في الأمراض الجلدية، وشهدوا أقل من 10 حالات جلدية في الأسبوع. عندما طُلب من صيادلة المجتمع تقييم ثقتهم في توفير التعليم/المشورة للمرضى الذين يعانون من مشاكل جلدية على مقياس من 1 إلى 5، كانت النتيجة المتوسطة 3.0 [معدل الذكاء = 2.0، 4.0]. حب الشباب، جفاف الجلد، مشاكل الأظافر، الالتهابات الفطرية، الطفح الجلدي، البثور الجلدية، مشاكل فروة الرأس، مشاكل الشفاه، حروق الشمس، الأكزيما / التهاب الجلد، داء

المبيضات، لدغات الحشرات، قمل الرأس، الصدفية، والثعلبة هي المشاكل الجلدية الشائعة. كانت المنتجات التي تحتوي على المضادات الحيوية / مضادات الفطريات ، والمضادات الحيوية الموضعية، والمنشطات الموضعية، والريتينويدات الموضعية، والفيتامينات / مشتقات الفيتامينات / حمض البانتوثينيك، ومضادات الهيستامين الموضعية / مضادات الكولين هي المنتجات الأكثر شيوعًا. وافق غالبية صيادلة المجتمع أو وافقوا بشدة على ضرورة استشارتهم من قبل المرضى الذين يعانون من أمراض جلدية، فلهم دور قيم في مساعدتهم وهم مصدر مهم للاستشارة والتثقيف حول الأمراض الجلدية واستخدام الأدوية المخصصة لها .

استنتاجات الدراسة: أظهرت النتائج أن صيادلة المجتمع في فلسطين يقدمون الرعاية لمرضى الأمراض الجلدية . وأنهم غالبًا ما يقومون بإحالة الذين يعانون من مشكلات صحية جلدية معقدة لاستشارة أطباء الجلد، لا سيما عندما تكون هناك حاجة إلى منتجات جلدية تستلزم وصفة طبية. قد يشيرهذا إلى ضرورة دمج صيادلة المجتمع مع فريق متعدد التخصصات لرعاية المرضى .

الكلمات المفتاحية: صيدلي المجتمع، صيدلية المجتمع، الأمراض الجلدية، الأمراض الجلدية، التوجه، الإدراك