

INVESTIGATIVE REPORT

The Role of Dermatologists, Nurses and Pharmacists in Chronic Dermatological Treatment: Patient and Provider Views and Experiences

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Effectively co-ordinated treatment support from healthcare providers (doctors, nurses and pharmacists) may improve patients' adherence to treatment. The objective of this study was to identify patients' and providers' perceptions of the roles of different healthcare providers in dermatological treatment. Focus groups were used in two types of fora: patients with chronic dermatological diseases ($n = 2 \times 6$) and healthcare providers ($n = 2 \times 6$), including doctors, nurses and pharmacists working in dermatological care. Data were analysed according to the Consensual Qualitative Research approach. The respondents viewed the roles of the providers as complementary, but poorly co-ordinated. Treatment support is provided mainly by the nurse. During the doctor's appointment, diagnosis and treatment decisions are often prioritized, leaving limited time for treatment support. The pharmacist's provision of support is constrained by the lack of privacy and clinical history of individual patients. The most apparent "gap" in the chain of treatment support was between the pharmacist and the other providers. There was a wish for improved interprofessional collaboration to avoid giving conflicting advice. There is a need to improve interprofessional collaboration in dermatology, in order to optimize treatment support in clinical practice. **Key words:** *patient compliance; topical administration; patient care team; patient adherence.*

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Skin disorders constitute a substantial problem in the population. For example, 20.5% of the general public in Sweden report dermatological problems (1). These conditions cause a significant decrease in health-related quality of life (1), by causing physical discomfort and inconvenience, and having a negative impact on social life and daily functioning (2). In addition to the morbidity of the disease itself, many patients are frustrated with the management of their medication (3). Topical treatment

is often time-consuming and interferes with daily living, and there is an apparent risk of irregular dosing and uneven application.

Clearly, skin treatment raises specific problems that may affect patients' adherence to treatment. Overall self-reported adherence to dermatological treatment is approximately 60% (3–5). This means that successful symptom alleviation and quality of life improvement may be jeopardized in some 40% of the patients on treatment.

Different strategies have been used to increase adherence to long-term treatment in general. Most interventions that have proved to be effective are complex and include combinations of more convenient care, information, reminders, self-monitoring, reinforcement, counselling, family therapy and other forms of additional supervision or attention by a healthcare provider (physician, nurse, pharmacists or other). However, the effects of these interventions are generally weak, and further innovations to assist patients to follow medication are warranted (6). The importance of different professionals working together to provide an effective treatment support network for patients has also been put forward. Better teamwork is associated with better patient satisfaction, continuity of care, access of care and control of disease, and may increase job and career satisfaction among the involved professionals (7).

The roles that different providers have with respect to treatment support in dermatology have not been systematically investigated. To understand the roles of, and the collaboration between, different providers it is important to be informed by the professionals, but also to incorporate the patient perspective.

The objectives of this study were to acquire a deeper understanding of the current roles of dermatologists, dermatology nurses and pharmacists in dermatological care and to identify barriers to and opportunities for interprofessional collaboration in the treatment of patients with chronic dermatological conditions.

MATERIALS AND METHODS

The focus group interview method was used in two forums: (i) patients with dermatological diseases, and (ii) providers of

pharmacological treatment including dermatologists, nurses and pharmacists working in dermatological care.

Focus group sessions

Focus group methodology can be defined as group discussions in which people representing the target group discuss different aspects of a topic (8). The discussions are led by a moderator and are aimed at elucidating the participants' framework of understanding by exploring their experiences, wishes, opinions and concerns.

Each focus group session lasted approximately 1.5 h. KK served as moderator using a piloted interview guide, while assistant moderators, ÅKL and LR, observed the discussions, took notes and audio-taped the sessions.

The moderator began each group session by clarifying the purpose of the study, followed by asking members to share their experiences of dermatological diseases. The questions addressed topics such as experiences/perceptions of use of topical preparations, treatment information, adherence to treatment, and interprofessional collaboration in dermatological care.

Setting

The focus group sessions took place at the dermatology clinics at a Swedish University Hospital, and a Swedish County Hospital in south Sweden. In addition to traditional dermatology outpatient clinics, both hospitals have specialist outpatient treatment units that are mainly operated by nurses. In the treatment units, patients can receive, for example, bath and light treatment, and help with the application of topical treatments.

Study population

A dermatologist at the respective involved clinic was asked to nominate experienced dermatologists, dermatology nurses and community pharmacists with special interest in dermatological treatment. The pharmacists were recruited at local pharmacies where patients from the dermatology outpatient clinic are likely to collect their medicines. The dermatologists were also asked to identify patients with various chronic skin diseases. Four focus groups, each with six participants, were established: one group of patients (Pat 1) and one group of providers (Pro 1) at the University Hospital, and another group of patients (Pat 2) and group of providers (Pro 2) at the County Hospital (Table I). At the University Hospital, 3 patients suffered from psoriasis, 1 from palmo-plantar pustulosis and 2 from atopic dermatitis. Among the patients recruited at the County Hospital, 4 suffered from atopic dermatitis and 2 from psoriasis.

This study was approved by the regional ethics committee for human research at Linköping University (study code 02-218).

Analysis

All four audio-taped focus group sessions were transcribed verbatim. We used the Consensual Qualitative Research (CQR) method of Hill et al. (9) to analyse the focus group data, assisted by the software QSR NUD*IST VIVO® (version 1, Qualitative Solutions & Research Pty Ltd, Doncaster, Australia). Three of the authors (KK, ÅKL and LR) independently identified themes (domains) from the transcripts. Disagreements were resolved by discussions, resulting in a consensus version of domains. Two external auditors, MM and JS, checked whether the consensus version was verified by the raw data (Table II).

In this paper we describe issues regarding the roles of different healthcare providers in dermatological treatment and interprofessional collaboration. The data related to adherence to topical treatment are presented elsewhere (10).

Table I. Background data on patients' and healthcare providers' age and experiences of dermatological disease and/or care ($n_{\text{total}} = 24$)

Background data	Age (years)			Having dermatological disease/experiences of dermatological care (years)	
	<i>n</i>	Mean	Range	Mean	Range
<i>Patients</i>					
<i>County hospital</i>					
Females	4	54	41–60	41	9–60
Males	2	28	24–32	18	4–31
<i>University hospital</i>					
Females	5	56	34–72	30	1–61
Males	1	46	46	29	29
<i>Providers</i>					
<i>County hospital</i>					
Females	5	52	48–63	21	4–33
Males	1	34	34	8	8
<i>University hospital</i>					
Females	5	47	32–58	19	7–35
Males	1	56	56	27	27

In the results section, categories and subcategories within each domain are presented. The information in parentheses in the main text, refers to the respective category as presented in Table III, e.g. (Aa) means "subcategory *a* of category *A*". The quotes were selected based on how well they illustrate the content of the category under consideration, and were translated from Swedish into English with the aim of capturing the meaning of the statements, rather than giving a literal translation. Where the dialogues have been shortened, the omitted parts have been indicated by ".../".

RESULTS

The domain "Roles of different providers of pharmacological treatment" is presented in Table III. Three main categories were identified within the domain: "The dermatologist – the 'diagnosis-maker' and prescriber"; "The dermatology nurse – the 'treatment coach'"; and "The pharmacist – the 'initial screener' and 'final checker'".

Table II. Steps used to execute and analyse the focus groups interviews

1. Basic principles for conducting a focus group study: opening, introductory, transition, key and ending questions.
2. Consensual Qualitative Research method was used to analyse the focus group data.
3. The analysis team independently analysed the cases by naive readings of all transcribed interviews. Domains and categories were identified independently and discussed together to reach consensus.
4. Auditors checked that the domains had bearing in raw data and provided feedback.
5. The analysis team identified core ideas related to each domain and discussed to reach consensus.
6. Auditors gave feedback.
7. The analysis team revised domains, categories and core ideas and discussed to reach consensus.

Table III. Categories about the roles of different providers of pharmacological treatment and about the interprofessional collaboration in the provision of pharmacological treatment according to patients, doctors, nurses and pharmacists in dermatological care

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- A. The dermatologist – the “diagnosis-maker” and prescriber
- a. Main task is to diagnose and to prescribe treatments
 - i. Diagnose (Pat = 0; Pro = 4)^a
 - ii. Decide on treatment together with the patient (Pat=1; Pro=12)^a
 - b. Gives limited information about the use of medicines
 - i. diagnosing is prioritized (Pat=0; Pro=1)^a
 - ii. time devoted to the consultation is short (Pat=0; Pro=1)^a
 - iii. patients’ thoughts are often preoccupied by the diagnosis (Pat=0; Pro=1)^a
 - iv. patient seldom ask questions during the consultation (Pat=0; Pro=3)^a
- B. The dermatology nurse – the “coach”
- a. Gives “hands on” treatment instructions (Pat=0; Pro=7)^a
 - b. Is more accessible to the patients (Pat=1; Pro=3)^a
 - c. Has a deeper understanding of the patients’ situation (Pat=1; Pro=1)^a
- C. The pharmacist – the “initial screener” and “final checker”
- a. Provides self-care advice/refer people that has not yet seen a doctor (Pat=0; Pro=6)^a
 - b. Aims at reinforcing treatment information provided by other healthcare personnel (Pat=0; Pro=7)^a
 - c. Gives limited information about medicines
 - i. Lack of information about the clinical history of individual patients (Pat=5; Pro=3)^a
 - ii. Lack of privacy at the pharmacy (Pat=0; Pro=2)^a
- D. Current collaboration between different healthcare providers is limited
- a. Current collaboration between pharmacists and the other healthcare providers is limited to occasional contacts and referrals (Pat=1; Pro=5)^a
 - b. Patients receive contradictory information from different providers, and act as messengers between providers (Pat=0; Pro=6)^a
- E. Wish for better collaboration between providers in care and treatment (Pat=2; Pro=5)^a
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^aThe figures in parentheses after each category refers to the number of quotations, identified in the transcripts, which underpin that category. Pat = focus groups of patients; Pro = focus groups of providers.

The dermatologist – the “diagnosis-maker” and prescriber

According to the providers, the dermatologist’s main task is to “diagnose and to prescribe treatments (Table III Aa)”. The providers believed that patients expect to get a definite diagnosis and to discuss causes for the disease. The doctors’ task is to get an overall picture of the patient, and to decide on a long-term treatment strategy. Both providers and patients stressed that the patient should be involved in these treatment decisions.

According to the providers, “dermatologists give limited information about medicines (Table III Ab)” because diagnosing is prioritized and the time devoted to the consultation is short. They also believed that the patients’ mind is often preoccupied by the diagnosis, especially for new patients, thus not leaving much room for detailed treatment considerations. Some providers even believed that the doctor should not provide too much information during the consultation, given these circumstances.

“What I, as a doctor, feel is most important when you have a skin patient – that’s to diagnose. And that means that issues relating to treatment information become a bit neglected.” (Doctor; Pro 1)

It is difficult for the doctor to demonstrate exactly the method and quantity of application for the topical preparations. Instead, the dermatologist just prescribes the amount that should be sufficient if the patients use the right dosage.

The providers also stated that patients seldom ask questions during the consultation:

“/.../ they might have thought of questions about their experiences [before the appointment], but it is easy to forget something, and they might not dare to ask about other things” (Doctor; Pro 2).

Thus, questions might arise after leaving the doctor’s office. However, due to limited appointment and telephone availability, the doctor is not easy accessible once the treatment has started. The providers suggested that treatment follow-up should be improved, for example, by telephoning the patient at home.

The dermatology nurse – the “treatment coach”

According to the providers, “the nurse’s task is to give detailed ‘hands on’ treatment instructions (Table III Ba)” i.e. hints on the method, quantity and location of the treatment application, and how to combine emollients and corticosteroids. The advice is often individualized, as it is based on an analysis of how each patient actually applies the topical preparation.

“I sometimes see when they [the patients] put on the treatment. /.../ Some use the fingertips, while others use the whole hand. It says something about how they handle both emollients and corticosteroids, I think. If you are afraid of corticosteroids and your parents have told you that: “You should not use too much of this”, then you get the little finger. And here’s a golden opportunity to describe how you should actually do it, and teach the patients to apply it /.../ To us, it’s so obvious, but “to grease” can mean very different things to different people.” (Nurse; Pro 1).

Both providers and patients claimed that the nurse is “more accessible to the patients (Table III Bb)”, especially by telephone, and tend to spend more time with the patients. All groups also claimed that the nurse has “a deeper understanding of the patients’ situation (Table III Bc)” than the other providers.

The pharmacist – the “initial screener” and “final checker”

The pharmacist seems to act as an “initial screener” of dermatological problems in the population. The providers suggested that “the pharmacist’s task is to give self-care advice (Table III Ca)” on dermatological

conditions to people who have not seen a doctor, based on up-to-date knowledge of available over-the-counter (OTC) products. For example, they recommend that customers with eczema should self-treat using a weak corticosteroids and emollients, and then refer people to a doctor if the eczema is severe or if the treatment does not work.

"We see those who may not have been to the doctor yet. They don't always know what kind of problems they have /.../. And we give them information about how to apply different creams, and that they should contact a doctor if it gets worse and if a weak corticosteroid is not enough. So, to us, it is important to capture patients and give basic information about eczema, but also to push them further so that they will get help" (Pharmacist; Pro 1).

According to the providers, the OTC self-selection department at the pharmacy might represent a barrier to information provision, since it allows patients to choose products themselves, and "end up with the wrong thing, and don't mind about asking [the pharmacist]" (Pharmacist; Pro 2).

Apart from often being the first one that people with skin problems encounter, the pharmacist frequently acts as the "final checker" before the patients have to manage their treatment on their own. According to the providers, the pharmacist "aims at reinforcing the information provided by other healthcare personnel (Table III Cb)" in order to increase adherence. While dispensing prescriptions, the pharmacist ensures that the patients know why they have been prescribed the medicine and how to use it. If knowledge deficiencies are identified, the pharmacist either provides the information or refers the patient to a doctor. For example, the pharmacist provides information about the order in which topical preparations are to be used, and how to adjust the treatment according to the condition.

Although the pharmacist aims to give treatment advice, both on prescribed medicines and OTC products, the "information" that actually is provided is "limited" (Table III Cc). Both providers and patients stated that one barrier is the pharmacist's lack of information about the clinical history of individual patients. The patients had sometimes found that the pharmacists lacked understanding of the individual patient's situation. The providers believed that good communication between the pharmacist and the patient could remedy this situation to some extent.

Patient A: "I feel that they [the pharmacy personnel] think that I keep running there and getting ointments all the time. And I look so healthy, so I don't have anything..."

Patient B: "Yes, that's how it is. Sometimes it feels like that. And I've been thinking that I would like to show them what I look like [on the skin] /.../" (Patients; Pat 2).

The providers also claimed that the lack of privacy that often characterizes pharmacies constitutes a bar-

rier to the provision of information. For these reasons, the pharmacy was not considered to be a place where patients feel comfortable asking questions.

Collaboration between the providers

The domain "Collaboration between the providers" is also presented in Table II. Two categories were identified within the domain: "D: Current collaboration between pharmacists and other healthcare providers is limited" and "E: Wish for better collaboration".

Both patients and providers argued that "current collaboration between pharmacists and other healthcare providers is limited (Table III Da)". The patients had not experienced any collaboration between pharmacists and other healthcare personnel at all, and regretted the general lack of a holistic perspective in modern health-care. According to the providers, current collaboration is restricted to the pharmacist contacting the doctor regarding unclear prescriptions, although there had been occasional pharmacist visits to the dermatology clinic. According to the providers, the desire to improve the collaboration exists, but there is not enough time to realise it. Collaboration between doctors and nurses, on the other hand, was regarded as more obvious.

The providers claimed that the limited collaboration between pharmacists and other healthcare personnel sometimes result in "patients receiving conflicting advice (Table III Db)". After leaving the doctor's office, some patients receive contradictory information at the pharmacy, which may cause the patient unnecessary concern. Sometimes these patients report the pharmacist's information back to the healthcare personnel, thereby "acting as messengers between the providers". The patients also found it frustrating that the doctor sometimes sends them to the pharmacy only to find out that the prescribed medicine is out of stock.

Interviewer: Are there times when you, the different groups [of providers], talk about what you inform [the patients] about? Do you ever meet?

Respondent: "No, we get it fed back from the patients, because the last [place] they go to is the pharmacy. /.../ Often they have been to a doctor's appointment and got their prescription, and next they collect it. And then, that [the information from the pharmacist] is the information that's remembered. And you meet that [information] on the telephone, or when the patient comes back for a visit "At the pharmacy, they said that this is a very strong ointment..." (Nurse; Pro 1).

There was also a lack of agreement between the outpatient dermatology clinics and primary care, in the way that dermatology patients were treated. The providers believed that patients with dermatological conditions seldom get correctly diagnosed in primary care, and that they are prescribed topical preparations in a routine fashion. Some of these patients approach

the dermatology clinic because they want to gain access to the clinic's competence. At the dermatology clinic, they get accurate information, and are more likely to get an effective treatment.

All groups expressed a "wish for better collaboration between providers in care and treatment (Table III E)". The patients also asked for a more holistic perspective in healthcare at large. Among the providers, one motive for improved collaboration was to increase agreement between the different providers and reduce the amount of conflicting advice, resulting in better adherence. If agreement would be achieved, provision of information from different sources, representing partially diverse perspectives, was believed to be an asset.

Several strategies to increase collaboration were suggested. The providers thought that agreement might be achieved if all providers would meet regularly and establish common guidelines for the information on medicines. Other suggestions included pharmacists and nurses working together regarding patient self-care. Another strategy was to let pharmacists visit the clinic to gain insights that would inform the advice given at the pharmacy.

DISCUSSION

The roles of the different professions involved in dermatological treatment were viewed as complementary, but poorly co-ordinated. The most apparent deficit was the "gap" between the pharmacist, and the other healthcare professions. True treatment support was delivered mainly by the nurse, while the other providers were constrained from doing this by lack of time (the doctor), or information on the clinical history of the patient (the pharmacist). The pharmacist was also limited by the poor environment for information provision at the pharmacy. There also appeared to be a "gap" between the doctors and nurses at the outpatient dermatology clinic, and their colleagues in primary care.

Methodological considerations

Since the aim of the focus groups was to capture the variation in perceptions of dermatological care, heterogeneity was sought with respect to the age and gender of the patients, and with respect to the professions of the providers. Combining people who differ in background, position and experience may stimulate the discussions, and help the group members to look at the topic in a different light. However, it is not possible to rule out that power imbalance, and the will to be courteous to the other professions, may have suppressed some less socially desirable opinions in the focus groups of professions.

As is evident from the results, the patients' contribution of ideas to the different categories pertaining to the roles of the different healthcare providers was

limited, although they were asked the same questions as the provider groups. How the providers organize their way of working does not seem to be of great interest, or concern, to their patients. The only issue that was elaborated by the patients was the lack of, and wish for, better collaboration between the professions, and a more holistic approach to healthcare. They also acknowledged the good contact with the nurse, and indirectly pointed out the pharmacist's lack of access to medical background information on the individual patient.

Collaboration between the professions

In order to achieve continuity in care, all providers involved should understand the "patient journey", how all aspects of this fit together and how "the journey" is experienced by the patient (11). Still, as exemplified by our results, true collaboration between different providers is relatively uncommon. In today's highly specialized healthcare system, care is often fragmented from the perspective of the patient (11). Each part of the system delivers its own part of the "patient journey", often without reference to the providers who delivered the step before and who will deliver the next step. In this study, this was illustrated by patients receiving contradictory information from different providers, and patients acting as messengers between providers. Conflicting information from different healthcare providers may confuse patients, with potential adverse consequences for taking medicines (12).

There are several reasons for the lack of collaboration. In this study, the providers claimed that lack of time constituted a barrier. Other barriers such as contradictory interests, differences in professional and organizational cultures, power relations, and mistrust between and within sectors may also have an impact on integrated care development and delivery (13). These barriers are more delicate to address, however, and less likely to be brought up in interprofessional focus groups. In the following extract, Masterson (14) reflects on the lack of collaboration between health and social care professions, which is probably applicable to the differences between any professions within healthcare: "High quality health and social care depend on that health and social care professions work well together. Yet arguably in many ways the professions involved remain curiously apart. They train separately, keep separate patient records, report to different hierarchies, read different journals and use different terminology. They have different interests, priorities, perspectives and even languages."

The nurse

Clearly, nurses are an asset in treatment support, at least in clinics where the nurses run outpatient treatment

wards. When dermatology nurses provide effective patient education, treatment results are likely to improve (15). The nurse appears to have qualities that are crucial in treatment support, e.g. the ability to provide "hands on" instructions on how to apply topical preparations, and give individualized feedback. Tailored information on the application of topical treatments, based on the assessment of the patients' own application technique, is likely to stimulate greater cognitive activity than generic information (16). The nurse is also perceived as understanding and accessible, which may increase satisfaction with care, which in turn improves adherence (4).

The dermatologist

Although information on prescribed medicines and treatment follow-up form integral parts of any doctor's professional conduct, it is evident that the dermatologist appointment is constrained by the lack of time. Additionally, even if comprehensive information is given at the appointment, the majority of chronically ill patients fail to recall elements of potentially important medical advice given by their doctor (17). Since adherence to treatment recommendations tends to increase with reinforcement, and additional attention by healthcare providers (6), the other providers should complement the doctor's provision of information on medication and treatment follow-up. If the nurse takes on an extended role in treatment follow-up, the dermatologists' time might even be freed up, and he/she might see more new patients (18).

The pharmacist

The pharmacist's role in treatment support appears to be unclear, and possibly underutilized. This study suggests that the pharmacist is often the first and the last provider that the patient meets in the process from developing the skin condition to collecting the prescribed medication. In addition to the nurse, pharmacists might be more active in treatment follow-up, in collaboration with other healthcare personnel. More drug therapy problems tend to be identified and solved when a patients' medication is reviewed by a pharmacist, as compared with patients who have only had regular contact with their doctor (19). This way, direct costs for medicines, and other healthcare utilization may be reduced (20). Practical problems in relation to the administration of topical preparations, deficiencies in motivation and adherence, potential side-effects and poor effectiveness constitute problems that might be detected by the pharmacist.

However, to increase the pharmacist's ability to make appropriate interventions, solutions to the problems of lack of privacy in the pharmacy, and the pharmacist's lack of information about the clinical history are re-

quired. The lack of background information may be remedied to some extent by establishing systems for shared information between the providers, e.g. individual patient medication records that are also available to the pharmacist.

Primary care

The role of primary care in the management of dermatological conditions was unsatisfying according to the providers in this study. They referred to their patient's bad experiences from primary care, e.g. lack of proper diagnosis, and adequate treatment support. An American study confirms that dermatologists outperform primary care practitioners regarding their diagnostic abilities, and concludes that primary care doctors should receive more training in the diagnosis of skin disease (21). Also the patients have less confidence in, and satisfaction with, their primary care provider, and would prefer direct access to dermatologists (22). Although the Swedish healthcare system does not require that a primary care practitioner authorizes referrals to a dermatologist, most skin patients initially seek primary care. Given the key role of the primary care practitioner, future studies of the co-ordination of dermatological treatment support should also include this category.

Future collaboration

The providers expressed a will to increase interprofessional collaboration, by, for example, regular local meetings and joint guidelines on information provision about medicines. This was especially emphasized by the pharmacists, but the vision was shared by all providers. An Australian study also concluded that patients, doctors and pharmacists want common guidelines for medication information to reduce conflicting advice (23).

Successful interprofessional collaboration depends on whether goals and aims are agreed upon, and whether team members have clearly defined roles. The competence of the individuals is also important for a team's success (24). Other healthcare professionals' trust in pharmacists tends to increase if the pharmacists have specialist knowledge (25); in this case in dermatology. Doubts about teamwork may also be eliminated if the team members get to know each other better on a personal level (24).

Future research

It would be of interest to develop ways of improving the integration of dermatological care across the whole of the healthcare system, taking the findings from this and other studies into account. In evaluating such efforts, clinical, humanistic and economic outcomes have to be considered.

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