








How do dermatologists' personal models inform a patient-centred approach to management: a qualitative study using the example of prescribing a new treatment (Apremilast)*

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Abstract

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Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Background The quality of dermatology consultations is partly determined by how clinicians approach patient care. The term 'Personal Models' describes the explanatory frameworks of thoughts, feelings and experiences that drive behaviour. One study found that clinicians' personal models, specifically their beliefs about autonomy and patient self-management, influenced the degree to which clinicians engage patients in shared decision making during consultations. Further research is needed to further explore how clinicians' personal models inform and affect the quality of patient care.

Objectives To explore how clinicians' personal models inform shared decision making and consultation style in managing people living with psoriasis in the context of a new treatment, Apremilast.

Methods A framework analysis of qualitative semi-structured telephone interviews with 13 dermatologists from the UK and Germany who participated in a novel medicine trial for psoriasis called APPRECIATE.

Results Two themes were derived from the data. Theme 1, 'personal working models of patient care', comprised two subthemes: 'patient-centredness: a continuum' and 'stereotypes and assumptions'. Theme 2, 'impact of personal working models on patient care', included three subthemes: 'shared decision making: a continuum', 'consultation skills' and 'impact of concerns about Apremilast on prescribing behaviour'.

Conclusions Although many dermatologists endorsed a patient-centred approach, not all reported working in this way. Clinicians' personal models, their beliefs, stereotypes, personal perceptions and assumptions about patients are likely to affect their prescribing behaviour and shared decision making. Additional specialized training and education could increase patient-centredness and whole-person management.

What is already known about this topic?

- 'Personal models' is the term used to describe the thoughts, feelings and experiences that determine behaviour.
- Research has shown that clinicians' personal models can influence their approach to psoriasis management, although the evidence base is limited.

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What does this study add?

- Some, but not all, clinicians endorse a patient-centred approach. Clinicians' beliefs and attitudes about patients, psoriasis and evidence for psoriasis treatments all potentially influence the degree to which clinicians champion whole-person management.
- Clinicians' personal models impact how clinicians communicate with and behave towards patients during consultations and more specifically, the extent to which they demonstrate techniques to engage patients in joint decisions related to their condition and treatment.

What are the clinical implications of this work?

- Additional specialized training and education could help clinicians to recognize how their beliefs, feelings and experiences influence their clinical practice, extend their skills in shared decision making, and facilitate whole-person management.

Psoriasis is a chronic immune-mediated inflammatory skin condition characterized by red, scaly plaques on the skin surface.¹ Estimates suggest that rates of psoriasis are highest in adults from high-income countries in Australasia, Western and Central Europe, and the USA.² Psoriasis is classified as a systemic condition due to its association with arthritic, cardiovascular (CVD), metabolic and psychological conditions,³ mainly depression and anxiety.⁴ People with psoriasis also often report engaging in health-risk behaviours, including smoking, excess alcohol consumption, being overweight and being inactive, which are associated with increased CVD risk and psoriasis severity.⁵ Thus, psoriasis is recognized as a complex long-term condition that requires a holistic approach to manage the associated physical, emotional and behavioural impact.⁶

Research suggests that while some clinicians offer patients generic lifestyle advice on biologic treatments via checklists,⁷ many clinicians do not use opportunities to discuss health behaviour change during consultations^{7,8} and report needing training to provide basic psychological support including health behaviour change.^{7–11} Clinicians not acknowledging the wider impact of psoriasis on the patients' life can lead to patients feeling dissatisfied with their care.^{12–14}

Shared decision making is a patient-centric approach whereby clinicians provide patients with tailored information about their condition and treatment options in order to inform and empower patients to make joint decisions about their health.¹⁵ This approach can improve the quality of patient care¹⁶ and is preferred by many patients with psoriasis.^{15,17} Shared decision making is crucial for long-term condition management,¹⁵ including the effective self-management of psoriasis,¹⁸ although it is not widely adopted by clinicians in clinical practice.^{16,17} Understanding the factors that influence a patient-centred approach could help to improve the quality of patient care and whole-person management in psoriasis.

The 'common sense model of self-regulation' stipulates that how people think and feel about illness influences their behavioural response to it.¹⁹ The 'personal models of illness' theory extended this notion and defines the term 'personal models' as

a collection of personal beliefs, emotions, knowledge, attitudes and experiences that drive behavioural responses to illness.²⁰ Clinicians' personal models of psoriasis may influence their approach to management, yet only one study has explored this phenomenon to date. The study by Chisholm and colleagues confirmed that most clinicians (70%) recognized psoriasis as complex condition, but only managed physical symptoms.¹⁸ Some clinicians (17%) saw and treated certain aspects of psoriasis as a complex condition but few clinicians (13%) acknowledged and managed all aspects of psoriasis as a complex condition.¹⁸ This study concluded that many clinicians hold a personal model of psoriasis as an acute condition, which leads them to treat skin complaints episodically rather than adopting a long-term conditions model as used, for example, in diabetes management.¹⁸ These findings represent a missed opportunity to influence patient self-management and research is needed to further explore how clinicians' personal models inform and affect the quality of patient care.

Knowledge of personal models can be used effectively to offer hope, counterbalance possible nocebo effects (unintended adverse experiences from negative treatment expectations),²¹ and potentially influence treatment adherence. However, the way in which dermatologists' personal models of psoriasis and its management inform a patient-centred approach, including shared decision making, is under-researched.

The introduction of a novel treatment for psoriasis offers an opportunity to gain insight into clinicians' personal models of psoriasis and how these may influence their approach to patient and condition management, insights which may not be discovered in the context of similar and established treatment modalities that clinicians have prior experience of.

Therefore, we explored clinicians' personal models (beliefs and emotions) that might inform how they approach patient management (behaviour) with a new treatment, Apremilast, an oral phosphodiesterase 4 inhibitor that was first approved in Europe for treatment of moderate-to-severe psoriasis in 2015.²²

Materials and methods

The present study utilized a qualitative, semi-structured interview design. Ethical approval was obtained from the NHS Health Research Authority in May 2016 (16/WM/0247) and the ethics committee of the Hamburg Medical Chamber in December 2019 (PV7163).

Participants

Participants were dermatologists with expertise in psoriasis management who participated in the quantitative phase IV of APPRECIATE, a multinational, observational, retrospective, cross-sectional study evaluating real-world outcomes of psoriasis treatment with Apremilast.²³ In Germany, 26 clinicians were contacted via email. Follow-up telephone calls were made to clinicians who did not respond. Copies of the participant information sheet and consent form were emailed or sent by fax on request.

We intended to sample a heterogeneous group of clinicians regarding sex, age and 'type' of clinician (level of experience, years in practice, work setting). However, the initial response rate for participation was lower than anticipated ($n = 4$). Clinical colleagues of the research team were invited to participate in the study via email in an attempt to boost recruitment, leading to a further six clinicians participating in the study.

Only six clinicians stated their reasons for nonparticipation, which included a lack of time or interest in the study. Recruitment coincided with the first wave of the SARS-CoV-2 pandemic, a time when clinical activity increased significantly, and this is likely to have resulted in few invitees participating.

Materials

A semi-structured interview schedule was developed based on extant literature, particularly around shared decision making, and findings from the APPRECIATE study²³ by experienced qualitative researchers (C.Bu., R.S., C.E.K., C.Bl.). Topics included expectations of, and experiences with, prescribing Apremilast; patient adherence to treatment; interaction with patients, including shared decision making; perceived mechanisms of action (Table S1; see Supporting Information).

Interviews

Semi-structured one-on-one telephone interviews were conducted by E.C. (UK) and C.Bl. (Germany). The interviewers documented clinician characteristics including age, sex, current main work setting (public hospital, private, other), healthcare profession (generalist dermatologist, psoriasis specialist), years in practice, years of experience with psoriasis and research status (active/inactive). All interviews were audio-recorded and transcribed verbatim. German transcriptions were translated into English by A.-L.N. and checked by C.Bl. For confidentiality purposes participant names were replaced with pseudonyms.

Table 1 Sample characteristics

Parameter	n (%)		
Location			
UK	3 (23)		
Germany	10 (77)		
Work setting			
Public hospital	3 (23)		
Private practice	6 (46)		
District general hospital	1 (8)		
University hospital	3 (23)		
Profession			
Dermatologist	3 (23)		
Psoriasis specialist	9 (69)		
Dermatosis specialist	1 (8)		
Research active			
Yes	8 (61.5)		
No	5 (38.5)		
Sex			
Male	7 (54)		
Female	6 (46)		
		Years (SD)	Range
Age		49.5 (9.4)	37–65
In practice		21.1 (10.1)	8–36
Experience in psoriasis		19.0 (9.8)	3–36

Data analysis

Data were analysed deductively using framework analysis. Our analyses were guided by different concepts and theories, including 'message framing' (framing information in a positive or negative way in order to achieve a specific effect),²⁴ and the 'necessity-concerns framework', which posits that personal beliefs about treatment need and concerns about treatment side-effects influence adherence.²⁵ Relevant data that did not align to the theoretical framework were coded inductively. Table S2 presents some worked examples of data that were coded deductively against theoretical concepts, or inductively, and the associated themes and subthemes.

Coding was performed in an iterative process; previous interviews were revisited as the codebook was developed and revised. One interview transcript was double-coded to ensure coding consistency, and coding was compared and discussed across the research team. Themes were derived from the codebook independently and formalized during subsequent team discussions based on consensus.

Results

Thirteen semi-structured interviews were conducted. Each interview lasted between 20 and 50 min. Sample characteristics are presented in Table 1.

Two main themes were derived from the data: 'personal working models of patient care', and 'impact of personal working models on patient care'. The first theme was divided into two subthemes: 'patient-centredness: a continuum' and

'stereotypes and assumptions'. The second theme comprised three subthemes: 'shared decision making: a continuum', 'consultation skills' and 'impact of concerns about Apremilast on prescribing behaviour'.

Personal working models of patient care

This theme offers a representation of clinicians' personal working models of psoriasis management, including key beliefs and feelings about the role of clinicians and patients within consultations, which drive different approaches to patient care.

Patient-centredness: a continuum

The importance of patient-centredness was recognized, although the extent to which clinicians in our sample reported that they prioritize this approach varied. Most clinicians were clearly patient focused as they championed a holistic approach to patient care, seeing psoriasis as more than just a skin condition and managing the 'whole' patient. These clinicians seemed to view patients more as partners in a consultation and valued the patient's perspectives and experiences when making decisions:

'So it does go down to what the individual patient's experience is.'
(C1, UK)

This was not the case for all clinicians. Some clinicians tended to focus on treating physical manifestations of psoriasis only and took an episodic and directive approach to patient care, meaning that they treated psoriasis as an acute, rather than chronic, condition without a long-term management plan. These clinicians reported instructing patients without considering their personal circumstances:

'Well, my patients, they actually do what I tell them to do (laughs) [...] In this regard, I am conservative (laughs) and if you don't like that, you should find someone else.' (C3, Germany)

Interestingly, a few of these clinicians reflected on the power dynamic with patients and believed that some patients viewed them as more expert, not just in terms of knowledge of psoriasis, but its management and the wider impact on the patient. These individuals expressed a tendency towards deciding on and prescribing treatments without input from patients. Some of these clinicians also alluded to the idea of themselves as 'hope givers' in the eyes of patients, which does not align with a patient-centric approach and instead could exacerbate a power imbalance between the clinician and the patient:

'... there are patients sitting in front of you and they really have tears in their eyes and they say "Doctor, I'm so grateful to you, you've given me a new life" [...] And these are moments where you really say, "Gosh". As I said, I'm embarrassed because I don't do anything else but prescribe drugs [...] I'm not the great guy who invented these drugs. That's what the pharmaceutical companies do,

but still the patients associate you as a doctor with these drugs in a way that is unbelievable.' (C2, Germany)

The different approaches described by participants indicate that patient-centredness exists on a continuum that is based on clinicians' personal beliefs about condition management.

Stereotypes and assumptions

Approaches to patient care were also influenced by clinicians' stereotypes of patient characteristics. Some clinicians made assumptions about treatment preferences based on age:

'The older people usually take medication anyway, and they say "it is not a problem at all. I am taking pills already anyway." And younger ones who say, "well, I'm already forgetting to take my pill", I really wouldn't recommend it to them, unless they really have one big reason for it.' (C4, Germany)

... and made assumptions about the patient's level of interest and previous knowledge about psoriasis and treatment options:

'The patient has no idea how this [Apremilast] works. And why it works. The patient also has no idea why aspirin works [...] That doesn't interest the patient either.' (C5, Germany)

Several clinicians made assumptions about reasons for treatment nonadherence, which was a common issue for them:

'They won't let it disappear in the cupboard and I hope also not they sell it on the darknet, although you hear this kind of thing every now and again, although I am quite confident that they will do it reasonably well, but I'm not under any illusions. Almost nobody takes the full dose.' (C6, Germany)

'Err my, my, my guess is they're worried if they don't [adhere] as prescribed, they might get more side-effects, that's just my guess, but err from my experience they generally take as prescribed.' (C7, UK)

Impact of personal working models on patient care

This theme conveys that the degree to which clinicians engaged patients in decisions about their care and treatment were likely to be driven by the personal working models and feelings of clinicians, as were the communication skills they reported demonstrating in consultations with patients.

Shared decision making: a continuum

The practice of shared decision making varied between clinicians. Many, especially female clinicians, considered the patient's goals for therapy and involved them in treatment decisions:

'It seems to be more of a conversation and more of a debate, now of course you give people the evidence of you know, these are the drugs

for your immune system, these are the side-effects of each drug and the information sheet and we give them the choices, and we talk through any concerns.' (C1, UK)

One male clinician specifically described employing a treat-to-target approach to psoriasis management, in which he predominantly formulated the treatment plans and judged treatment success. Patient goals were considered, but only after the goals of the clinician:

'I had a patient just yesterday, who has had it [psoriasis] for 3 months, um, as I said, the therapy goal is delta PASI 90, we have not reached that by far, it is 40 perhaps or something, um, but the patient is satisfied [...] I said we try, give it for another 3 months, and if my goal is not reached, then we have to discuss if their goal is reached. And if a patient is satisfied, I am usually satisfied.' (C2, Germany)

Other clinicians used persuasion to encourage patients to adopt the goals of the clinician:

'Well, of course what is a bit of a concern with anxious patients is this warning about the depression. It takes a little bit work of convincing sometimes, but often, some of them you can't convince.' (C11, Germany)

Some clinicians did not endorse shared decision making. One clinician, for example, seemed to misunderstand the concept of shared decision making, labelling it a patient-led process rather than a collaboration between clinicians and patients. This individual openly dismissed the idea of engaging patients in decisions about treatment based on an assumption about the patient's level of knowledge:

'... I don't put the patient in front of the decision to take a pill or an injection, to be honest [...] I decide that beforehand for them. And so far I've never had a case of someone saying, "No, I don't want that, I'd like something different." Apparently they [patients] are not that well informed after all (laughs).' (C6, Germany)

Consultation skills

The way in which health information is presented can influence behaviour, a concept known as 'message framing'.²⁶ Gain-frame messages highlight the benefits of performing a behaviour, whereas loss-framed messages emphasize the cost of not performing the desired behaviour.²⁶ Within our sample, the role of message framing in consultations was acknowledged as important, but clinicians' knowledge of techniques was limited. Few clinicians demonstrated an awareness of the impact of framing treatment information in terms of gains, rather than losses, on patients. For example:

'I think it's really important as a clinician that you, if you're going to drill down to a couple of options and give them to the patient you know, that you present them in a positive, rather than a negative way. [...] if something is explained negatively, people are more likely to view it negatively and have a, have a negative experience.' (C1, UK)

One clinician downplayed treatment benefits as a technique to increase patient satisfaction:

'So my, my strategy is I always paint a lower expectation. [...] Because anything that is better people are happy. [...] So I mean that, that's me, that's how I do it, I don't sell it as a miracle drug or whatever, I will always say give them low expectation and then people tend to be happier if they, if they get a bit more, that, that's me.' (C7, UK)

It was unclear whether other clinicians did not know about message framing, or if they did not feel confident in their ability to frame information differently for patients.

Just one clinician referred to placebo vs. nocebo effects on patients, although her level of understanding was basic and her definitions were confused:

'but depending on how sensitive someone is and how worried, there are also a lot of placebo effects [...] So not placebo, what do you say?' (Interviewer: 'Err, nocebo.') 'People think you expect side-effects and then they appear?' (C6, Germany)

Some, but not all clinicians, recognized the importance of goal setting and action planning with patients:

'uhm that you simply ask, what are you not satisfied with and what can we do even better? What are your (Interviewer: Yes) goals, so to speak, your therapy goals (Interviewer: Mhm)? Um, that also plays a role in the therapy decision.' (C2, Germany)

Impact of concerns about Apremilast on prescribing behaviour

There was some concern expressed about the lack of robust long-term evidence to support the use of Apremilast compared with other existing treatments for psoriasis:

'But of course the patients asked. And I answered honestly, there are no long-term studies. [...] It's not like Methotrexate, that I know, it has been there for 30 years now and with that this and this and this happened.' (C8, Germany)

Some clinicians questioned the accuracy of existing guidance and regulations on prescribing Apremilast:

'I think the problem we have in this country, and I guess in a lot of other countries, is that NICE have mandated that we use it as an equal first line with biologic therapies. [...] it [Apremilast] could be used in disease that is less severe and that, you know, I think it's setting the bar too high to be using it after say, all the other systemics when actually it might be a good treatment to use instead of the other systemics.' (C9, UK)

Concerns about the side-effects of Apremilast were also reported:

'First, of course, if the side-effects are too unpleasant [...] err, also the question of depression and suicidal tendencies [...]. I had a case of this where we had to stop it for this reason. [...] And of course if the effect is still not there after 4 months.' (C3, Germany)

Such worries gave rise to prescribing behaviour in the form of a trial-and-error approach to treating psoriasis:

'Especially in the beginning, when there is diarrhoea, I say, "Look, take it for two more weeks, then it will be actually done with." Even if it is off-label, you play around with the dose to adapt the patient more to the therapy.' (C10, Germany)

And several clinicians explained that they were more likely to trust their own personal experiences, and those of colleagues, than existing research evidence:

'... generally speaking, I don't really rely much on study data, if I'm honest [...] I want to gather my own experience, or exchange information with colleagues in that regard.' (C2, Germany)

Discussion

Although most dermatologists in our sample acknowledged the importance of patient-centred care and viewed patients as partners in a consultation, their expressed support for this approach did not always translate into their clinical practice. Many of the clinicians' personal models were informed by stereotypes and assumptions about patients' interest in, understanding of, and capability of, psoriasis management. Clinicians' personal models, particularly their beliefs about psoriasis and their patients, seemed to influence the degree to which they actively engaged patients in shared decision making during consultations, and used key skills, such as message framing, to support adherence.

Uncertainty around the use of a new drug (Apremilast) also affected how clinicians approached psoriasis management. Concerns about insufficient data on the long-term side-effects of Apremilast seemed to drive clinicians to base treatment decisions on their own, or peers' experiences, and prescribe medication on a trial-and-error basis instead of using a strategic approach based on robust evidence.

Our findings demonstrate that while almost all clinicians in the present sample recognized psoriasis as a complex long-term condition, several clinicians described treating physical symptoms only and did not address the broader life impact of psoriasis. This finding is consistent with previous findings,^{16,17} including a study by Chisholm and colleagues,¹⁸ who found that 70% of healthcare professionals involved in psoriasis management had a 'sophisticated-linear' model of psoriasis, meaning clinicians were aware of the complexities of psoriasis but did not consider the cognitive, emotional, behavioural, social or economic consequences of psoriasis within consultations.

Our study also extends the previous findings. We show that several clinicians stereotyped patients based on age and formed assumptions about their capabilities to self-manage and adhere to treatment. These elements of clinicians' personal models appeared to influence prescribing behaviour and shared decision making.

The issue of treatment nonadherence in psoriasis is not a new finding; research consistently shows that up to 40% of patients with psoriasis do not adhere to treatment,²⁷ although estimates range from 27% to 90%.²⁸ However, our

findings do suggest that clinicians' beliefs about the likelihood of patients being nonadherent, and limited skills to support adherence, might be factors that prevent clinicians from raising the subject with patients. Furthermore, our findings denote that some dermatologists did not fully understand the principles and practices involved in shared decision making.

These novel findings collectively highlight several opportunities for clinicians to improve their consultation skills and learn techniques to frame health information appropriately to increase adherence, and, in turn, improve health outcomes and the quality of patient care overall.

In terms of strengths and limitations, this study is one of two that explores the influence of individual processes on shared decision making in dermatology practice and is the first to consider practices across two countries. Questioning clinicians about their experiences of Apremilast specifically is likely to have reduced the number of hypothetical responses. The use of established theoretical frameworks in material development and data analysis, and the Consolidated Criteria for Reporting Qualitative Research (COREQ)²⁹ to report the findings, provides a strong evidence-based foundation to our findings. The transferability of the present findings is potentially limited by the small sample size and the fact that several dermatologists in this study were colleagues of M.A. and were actively involved in psoriasis research. These individuals may have been more motivated to participate than dermatologists who refused, as the reasons for nonparticipation suggest.

This theory-led approach provides a basis for hypothesis testing and can inform education in consultation management. Improving clinicians' awareness of how their personal models impact on psoriasis management and their relationships with patients may improve patient outcomes, such as increased adherence. PsoWell™ (psoriasis and wellbeing) is an evidence-based training programme that specifically aims to teach health professionals who are involved in psoriasis management motivational interviewing³⁰ techniques to promote better patient self-management and increase shared decision making within a consultation.^{11,31} Attending the PsoWell™ training programme could help clinicians to become more aware of their personal models of psoriasis and improve their consultation skills. Our findings also suggest that as female clinicians are more likely to involve patients in treatment decisions, the PsoWell™ training programme may be an ideal professional development activity for male clinicians, in particular, who are interested in facilitating shared decision making in their practice.

Studies examining ways to increase shared decision making, such as trials of skills training techniques, are needed. How shared decision making impacts on treatment adherence and patient self-management in the context of psoriasis similarly needs to be underpinned by high-quality research.

In conclusion, dermatologists' implicit or personal models of psoriasis influence the extent to which they adopt a

patient-centred approach to managing psoriasis. While some dermatologists appear to be practising in a way that is consistent with this approach, further skills training to extend this practice, and research to determine whether it impacts on patient outcomes in psoriasis treatment, is needed.

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Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's website:

Table S1 Worked examples of deductive and inductive coding plus associated themes.

Table S2 PsoExpect clinician interview topic guide (English).

Video S1 Author video.