Patient Preference and Adherence

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ORIGINAL RESEARCH

Talking About Barriers to Disease-Modifying Anti-Rheumatic Drugs: Content Analysis of Audio-Recorded Routine Clinical Visits of Patients with Rheumatoid Arthritis

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Purpose: Effective healthcare professional-patient communication is essential for medication adherence. Conversations about patient's barriers to medication use, for example, could help to enhance adherence and consequently improve treatment outcomes. However, it is unclear whether and how barriers to medication use are discussed during routine rheumatology consultations. The aims of this study were to examine 1) the barriers and facilitators to medication use raised by patients during real-life rheumatology outpatient consultations, and whether the issue of medication (non)adherence was discussed (communication content); and 2) how rheumatologists responded to the barriers (communication process).

Methods: A total of 134 audio-recordings of real-life outpatient rheumatology consultations were analysed. Barriers and facilitators for the current use of disease-modifying anti-rheumatic drugs were identified and categorized using a previously adapted Theoretical Domains Framework. The way rheumatologists responded to the barriers brought up by the patients was analysed using relevant parts of the Roter Interaction Analysis System.

Results: In 58 of the 134 consultations, at least one barrier or facilitator to current medication use was brought up by the patient; in 31 out of 134 consultations, medication (non)adherence was addressed. Most facilitators were related to the quality of the needles, the use of an injection pen instead of a syringe, dose reduction because of low disease activity and timing of the medication. The majority of barriers were related to experiencing side effects and doubts about efficacy and resistance of (long-term use of) medication. Rheumatologists' responses to barriers related to disease-modifying anti-rheumatic drugs were mostly a combination of instrumental (counselling) and affective (agreement) communication.

Conclusion: Barriers to current disease-modifying anti-rheumatic drugs' use raised by patients and discussed during routine rheumatology consultations were primarily related to side effects and concerns about the efficacy and long-term use. Continuous attention of these barriers and tailored responses to patients' concerns are key to promote better adherence to treatment.

Keywords: barriers and facilitators to medication, adherence, healthcare professional-patient communication, instrumental and affective communication, outpatient visits

Introduction

The cornerstone of the treatment of rheumatoid arthritis (RA) is the use of disease-modifying anti-rheumatic drugs (DMARDs) which decrease symptoms and radiographic progression of joint destruction and improve patient functioning.[1,2] Numerous efficacious synthetic and biologic DMARDs are available to achieve and maintain this goal.[3,4] However, the desired effects can only be achieved when patient's medication-intake behaviour corresponds with the medication regimen agreed upon with the healthcare professional (HCP), called medication adherence.[5] In RA, patients' adherence to DMARDs is often suboptimal,

Received: 10 November 2024
Accepted: 6 February 2025
Published: 27 March 2025

ranging from 25% (underdosing) to 107% (overdosing), depending on the measurement method and population, potentially compromising treatment outcomes.[6–8]

Effective HCP-patient communication has been found to be related to medication adherence.[9] Previous studies among primary care and specialty practices found that better adherence was related to greater information provided by the HCP, while poor physician communication increased the risk of non-adherence by 19%.[10,11] For HCP-patient communication to be effective, HCPs should pay as much attention to instrumental or cognitive needs of patients (their need to understand) by providing information and advice as to affective or socio-emotional needs of patients (their need to be understood) by providing reassurance or empathy.[12–18] Both types of communication (instrumental and affective communication) are equally important for enhancing patients' medication adherence (Figure 1).[11]

In order to enhance patients' medication adherence, it is essential to know which barriers to medication use patients have. Consequently, barriers to medication use should be identified and discussed during consultations. However, limited research has explored whether and which barriers to medication use are discussed between patients and HCPs. The current study aims to observe and describe 1) the barriers and facilitators to current DMARD use raised by patients with RA during real-life outpatient consultations, and whether the issue of medication (non)adherence was addressed; and 2) how rheumatologists responded to the barriers mentioned by patients.

Materials and Methods

Study Design

Data were used from a previous multicentre cohort study.[19] In this study, consultations between HCPs and patients with RA in two Dutch hospitals, were audio-recorded. Audio recordings (n = 176) from this cohort study were used in the current cross-sectional study. Since HCP-patient communication may vary, depending on the discipline of the healthcare professional (eg, a medical specialist or a (rheumatology) nurse), only audio recordings of interactions between rheumatologists and patients were selected for this study (n = 142).[20]

Participants

HCPs, working at two rheumatology centres in the Netherlands (Sint Maartenskliniek in Nijmegen and Reade in Amsterdam), were asked to participate, and informed consent (IC) was signed.[19] Consecutive patients, eligible for participation, were invited by the HCPs between July 2016 and July 2017. Patients were eligible for participation if they were aged 18 years or older, had a confirmed diagnosis of RA according to the American College of Rheumatology (ACR)/European League Against Rheumatism (EULAR) 2010 RA classification criteria, and were treated in one of the rheumatology centres for at least one year with one or more synthetic DMARD(s), whether or not combined with (a) biologic DMARD(s). In case patients agreed to participate, an

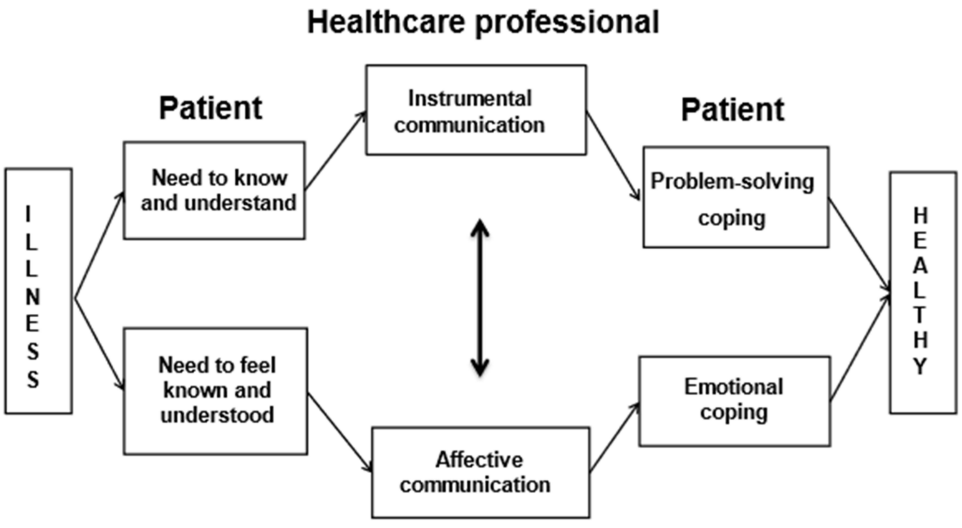

Figure 1 Dual needs of the patient.

informed consent was signed. The informed consent of HCPs and patients included permission to use all data, including publication of anonymized quotes.

Data Collection and Data Analysis

Characteristics of HCP and Patient

HCPs completed a questionnaire on sociodemographic characteristics: rheumatology centre, sex, age, profession and work experience. Patients also completed a questionnaire on sociodemographic characteristics: sex, age and educational level. Medication-taking behaviour was measured by self-report, and patients filled out a validated Compliance Questionnaire on Rheumatology (CQR). Clinical characteristics (disease duration, presence of comorbidities, current DMARDs use), were extracted from patients' medical records. For patients' and HCPs' characteristics, descriptive statistics were conducted. To ensure the patients' privacy, all identifying information was anonymized.

Characteristics of the Consultations

Real-life outpatient rheumatology consultations were audio-recorded. Per patient, one audio recording was made of a single consultation. Audio recordings were checked for sound quality and completeness. Audio recordings of poor sound quality and the ones not containing the full consultation were removed (n = 8).

Content Analysis of the Audio-Recorded Consultations

A total of 134 audio-recorded consultations were used for the analyses. MAXQDA (version 24.0.0), a qualitative analysis software package, was used to facilitate the content analysis.

To explore barriers, facilitators, and adherence issues to current DMARD use, only recordings in which barriers and/or facilitators of current DMARD use were raised by patients, were selected. Subsequently, in these recordings, issues related to medication adherence were explored. An extraction sheet facilitated this process and field notes were made during listening to the audio-recordings. To facilitate the content analysis, these audio recordings were transcribed verbatim.

The content analysis was conducted by two researchers independently (MV & JV).[21] They read all transcripts and extracted excerpts that pertained to discussion about DMARD-related barriers and facilitators. A third researcher (SvD) read 10 transcripts and studied the excerpts, to ensure the trustworthiness of the analysis. The barriers and facilitators identified from the excerpts were coded and categorized using the Identification of Medication Adherence Barriers (IMAB) model, an adjusted model of the Theoretical Domains Framework.[22,23] This model comprises several domains that facilitate the mapping of factors important for medication adherence, such as skills, environmental context and resources and knowledge and was previously used to identify relevant factors with regard to medication use in patients with RA. In addition, the IMAB domains were grouped according to the higher order components: Capability, Opportunity and Motivation of the Behaviour Change Wheel: (COM-B).[24] The coding process was discussed until consensus was reached among the two researchers (MV & JV). In case no consensus could be reached, another researcher (BvdB) made the final decision.

Next, the verbal responses of rheumatologists were analysed from the selected audio-recordings, which only contained excerpts of barriers to current use of DMARDs. Therefore, the audio recordings in which only facilitators were discussed were excluded. One researcher (MV) coded the verbal responses. Relevant parts of the Roter Interaction Analysis System (RIAS), a widely used international observation system with proven validity and reliability, were used for the analysis of the conversations between rheumatologist and patient.[25–27] RIAS distinguishes two communication categories: affective or socio-emotional communication and instrumental communication. These categories can be further subdivided into various verbal responses. For affective communication, these include agreement, verbal attentiveness, making jokes, personal remarks, and reassurance. For instrumental communication, these verbal responses include a question (open-ended or closed-ended question), providing information, or an advice for the patient to change behaviour (counselling).

Results

Sample Characteristics

In Table 1, the characteristics of rheumatologists and patients are displayed.

Table 1 Characteristics of the Rheumatologists and Patients with Rheumatoid Arthritis

Rheumatologists (n=20)	
Rheumatology centre, n (%)	
Amsterdam	7 (35)
Nijmegen	13 (65)
Male sex, n (%)	15 (75)
Age in years, mean (SD)	49 (8.6)
Work experience in years, mean (SD)	16 (9.4)
Patients (n=134)	
Rheumatology centre, n (%)	
Amsterdam	47 (35)
Nijmegen	87 (65)
Male sex, n (%)	44 (33)
Age in years, mean (SD)	60.9 (11.7)
Educational level[#]*, n (%)	
Low	32 (23.9)
Moderate	55 (44.1)
High	43 (32.1)
Disease duration in years, median (IQR)	8.5 (3–15)
Comorbidities, n (%)	
No	33 (24.6)
Yes	101 (75.4)
Number of synthetic DMARDs in use, n (%)	
1	108 (80.6)
2	20 (14.9)
3	6 (5)
Use of biologics, n (%)	
No	92 (68.7)
Yes	42 (31.3)
Medication beliefs, necessity subscale, mean (SD)	19.8 (3.5)
Medication beliefs, concerns subscale, mean (SD)	13.8 (3.9)
CQR correct dosing, adherent, n (%)	82 (61.2)

Notes: [#]Educational level: low = up to and including lower technical and vocational training, moderate = up to and including secondary technical and vocational training, high = up to and including higher vocational training and university. *Missing values < 3%.

Abbreviation: DMARDs, Disease-modifying anti-rheumatic drugs.

One hundred and thirty-four eligible routine consultations with unique patients were available (Figure 2). In 43% (n = 58) of the consultations, barriers and/or facilitators to DMARD use were raised by patients.

Barriers, Facilitators, and (Non)adherence Issues for Current DMARD Use

In Tables 2 and 3, facilitators and barriers for current DMARD use are displayed, as well as patients' quotes illustrating these barriers and facilitators.

Facilitators for Current DMARD Use

In a small number of consultations (n = 12), only facilitators were brought up by patients. Facilitators mentioned were for instance related to the (good) quality of the needles, the use of an injection pen instead of a syringe, dose reduction

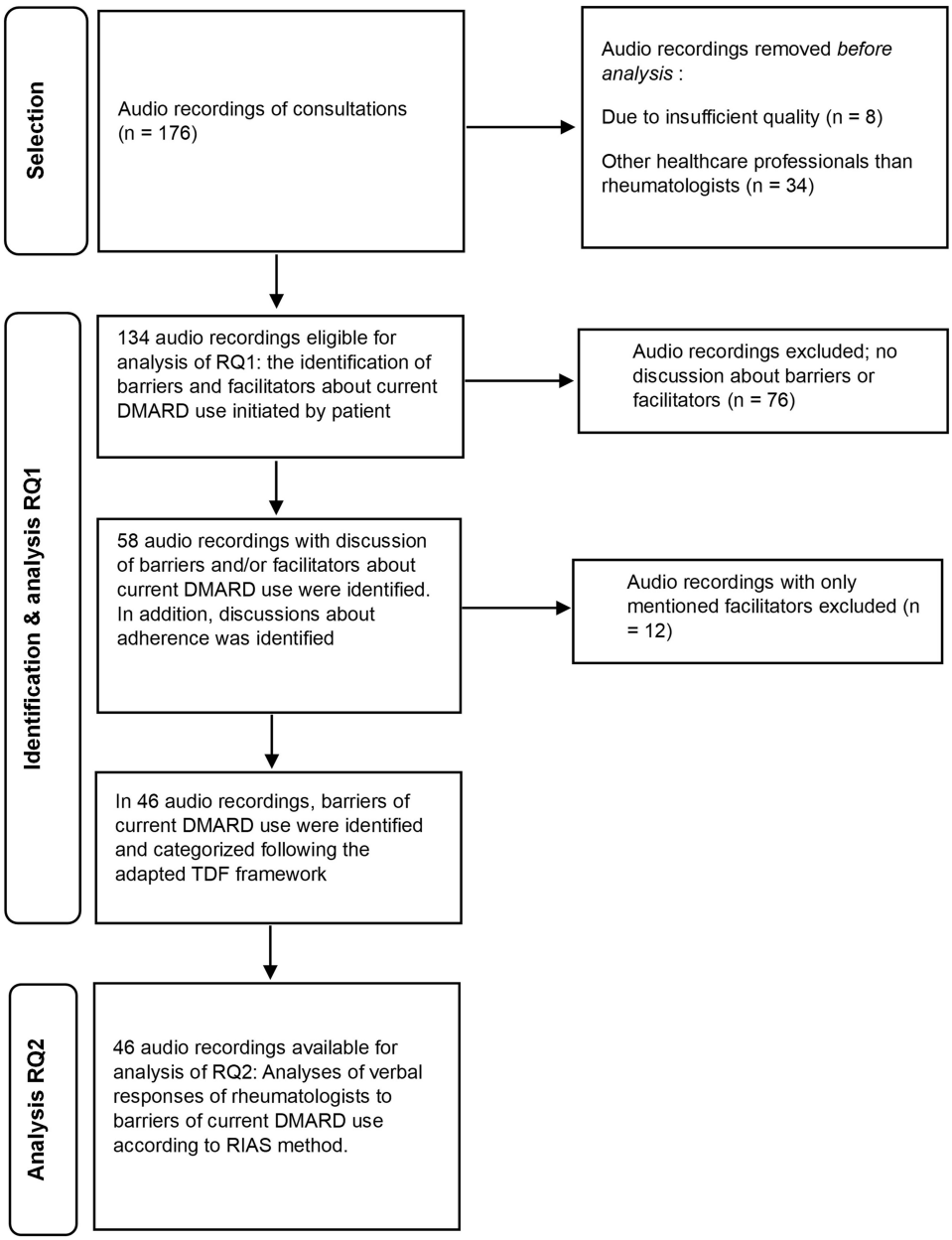

Figure 2 Flowchart of selection and analysis of audio recordings.

https://doi.org/10.2147/PPA.S503083

Table 2 Facilitators About Current DMARD Use Categorized According to the COM-B Model and IMAB Domains

COM-B	IMAB Domain	Facilitators	Quote
CAPABILITY	Memory and Attention	Treatment effect Aids (to remember) Embedded in daily routine/timing medication use	"Yes, look, I'll take them just before going to bed, than [the nausea] vanishes by itself."
	Decision-making process	Self-management (patient proposes/decides)	"My question is; just an option: that we go back from 25 gr MTX to 20?…Is that a nice idea?" [proposing a different dose]
OPPORTUNITY	Environmental context and resources	Good quality of needles/pens instead of injections	"With the other syringe, I needed the help of my husband…But, this one, I can administer myself"
	Social influences	Health professionals (rheumatologist, pharmacist, nurse, general practitioner): capabilities, trust, and empathy	"It was a really good advice from the pharmacist taking my medication in the evening…I used to take them in the morning and then I got nauseous…"
MOTIVATION	Beliefs about capabilities	Self-efficacy (adjusting dose/using GCs/timing medication use)	"I have adjusted my dose by raising it with one pill"
	Beliefs about consequences	Belief of treatment effect/need for medication	"I have not taken my medication for two weeks….and since then I started again, because the disadvantages do not outweigh the advantages"

Abbreviations: COM-B model, Capability, Opportunity and Motivation-Behaviour model; IMAB domains, Domains according to the Identification of Medication Adherence Barriers model.

Table 3 Barriers About Current DMARD Use Categorized According to the COM-B Model and IMAB Domains

COM-B	IMAB Domain	Barriers	Quote
CAPABILITY	Memory and Attention	Forgetting to take medication Lack of treatment effect/Resistance	"Yes, difficult to do so. To remind oneself that it must…and then to actually do [take medication]…"
OPPORTUNITY	Environmental context and resources	Quality of product (needle) Logistics (medication storage temperature, pharmacy has no stock) Change of name/appearance of medication/ change pharmaceutical (biosimilar)	"All the issues with the different pharmaceutical prescribers, I do not like it. In the future, the physician can better prescribe a blank recipe…"
	Social influences	Lack of support from colleagues (incomprehension, negative reactions/advise from third parties)	"…My alternative therapist said: "That is not allowed. When you are with me, you can't increase or change your medication."
MOTIVATION	Beliefs about capabilities	Difficulty in adherence because of procrastination Lack of daily routine	"[instead of daily use] to taking the medication every other day, yes, for me, that is more complex to remember"
	Beliefs about consequences	Belief/Fear of experiencing (long- and short-term) side effects/comorbidity because of long life use of medication Belief that medication will be harmful: higher disease activity Lack of belief/Doubts in/about efficacy Dependency on medication Less acceptance of (long-term and many) medications Non-acceptance of diagnosis	"doubts about the efficacy of the [medication], yes, I have the feeling that it does not…Yes, not sufficient, it is not working. The symptoms have not improved"
	Emotions	Anxiety/Fear Anger Dependency on medication Insecurity/Loss of trust in medication	"Well, I have two [pills] left…so I could stop [taking the medication], Or do I have the chance that [symptoms] it will flare up? Because, that would frighten me…"
	Motivation and Goals	Worse health status/wellbeing Side effects Long time before effectiveness shows Comorbidity Negative effect lower dose	"Because, I have accidently been taken 17.5 mg, and I experienced some [negative] effect. So, this [25 mg] appears to be the right dose!"
	Goal conflict	Experiencing side effects Restrictions due to using medication (eg, no alcohol) Not able to participate (social, work)	"And now, I always feel nauseous the following Sunday, and then I think: Well, I really can't have that, while on a trip…"

Abbreviations: COM-B model: Capability, Opportunity and Motivation-Behaviour model, IMAB domains: Domains according to the Identification of Medication Adherence Barriers model.

because of low disease activity, timing of the medication, a medication box in which the pills are organized per day, and the helpful advice of the pharmacist about the timing of medication use.

Barriers for Current DMARD Use

In one-third of the consultations (n = 46), various barriers were raised by patients with regard to the use of their DMARDs. Sporadically, barriers were mentioned by a family member who accompanied the patient to the hospital. Most barriers were related to side effects (predominantly nausea and not feeling – physically and/or mentally – well, but also headaches, stomach complains and infections), timing of medication use, alcohol consumption, doubts about efficacy of medication, and resistance of medication use and dependency. All barriers were categorized into the IMAB domains: "Beliefs about consequences" and "Motivation and goals". These domains were subsequently categorized under the higher order component "Motivation", of the COM-B model, indicating that "Motivation" was the most mentioned component in experiencing barriers to medication use.

Some barriers were categorized into two IMAB domains, because the barrier was accompanied with a strong emotion. For example, one barrier was about an injection, of which the patient expressed anger (emotions/motivation) and explained that the needle was painful to use (quality of needle, environmental context and resources/Opportunity): "Well, it is horrible nasty injection. That I can tell you!!"

Adherence

In the conversations about barriers and facilitators to medication use (n = 58), (non)adherent behaviour was discussed in 19 consultations. These conversations were mostly initiated by the rheumatologists by using (closed-ended) questions, such as:

> It is going well, the intake of medication?
>
> The medication that you use, do you forget this sometimes?
>
> How are you doing, taking the methotrexate?
>
> Are you able to take your medications every day?
>
> You stopped taking the methotrexate because you felt that it wasn't really helping you very much, right?
>
> You skipped it [taking medication] twice during the vacation, right?

Non-adherent behaviour was mainly related to forgetfulness, experiencing side effects and lack of routine (such as holidays).

Rheumatologists' Verbal Responses to Barriers for Current DMARD Use

In Table 4 and Table 5, the rheumatologists' responses to the barriers raised by patients are displayed. Table 4 shows that the verbal responses of rheumatologists on the various barriers were mainly a combination of instrumental and affective communication. Rheumatologists provided in may cases several instrumental responses combined with a single affective response per barrier.

Specifically, the responses were often combinations of counselling, a closed-ended question with agreement, and confirmation (Table 5). An example of such a combined rheumatologist's response to a raised barrier was:

> Patient: No, but it is a…it is really a complex daily routine (barrier)
>
> HCP: Yes, I think so too. (affective response, agree)
>
> Patient: You need to take something when you get up [medication] and [medication] with meals and…
>
> HCP: I have to say that the time of intake of [medication x and y] is less relevant and it won't hurt when those times vary a little… (instrumental response, information)

Table 4 Barriers to DMARD Use Mentioned in 58 Consultations by Patients and Rheumatologists' Responses Categorized in Main Communication Categories: Instrumental, Affective, Combination or No Response

COM-B	IMAB DOMAINS	BARRIERS	RESPONSE			
			Instrumental	Affective	Combination Instrumental and Affective	No Response
C	Memory and attention	Forgetting to take medication		x		
		Mistake in dosing medication		x		
C	Skills	Insufficient cognitive, communicative, or physical skills to understand and/or administer medication			x	
O	Social Influences	Lack of support from others (wrong advice)				x
O	Environmental context and resources	Quality of product (needle) 2* *(also scored under emotions anger)*			xx	
		Change of name or appearance 3*	x		x	x
		Logistics 2*	x	x		
M	Goal Conflict	Restrictions due to using medication (no alcohol) 2*			xx	
		Not able to participate (socially/work) 2*	x	x		
		Worse well-being (limits holidays)			x	
M	Emotions	Fear 3*			xxx	
		Anger			x	
		Despair			x	
		Dependency of medication		x		
M	Belief about consequences	Experience of (long- and short term) side effects 5*	xx	xx	x	
		Lack of belief in efficacy 5* *(1 also scored under emotions despair)*	xx	x	x	x
		Less acceptance of (long-term) medication 5*	xxxx		x	
		Belief that medication will be harmful 2*	x		x	
		Lack of belief in necessity (more) medication 2*	x		x	
		Negative expectations for tapering *(also scored under emotions fear 3*)*			x	
M	Motivation and goals	Side effects 36*	13x	7x	14x	2x
		Tapering failure	x			
		Time to treatment effect	x			
		Difficulty administration medication			x	
M	Beliefs about capabilities	Lack of daily routine 2*		x	x	
		Postponement intake due to struggle necessity			x	

Notes: * Number of times mentioned as barrier X Number of times mentioned as response *Italic*: barrier mentioned under several domains.
Abbreviations: DMARD: Disease-modifying anti-rheumatic drug, COM-B model: Capability, Opportunity and Motivation-Behaviour model, IMAB domains: Domains according to the Identification of Medication Adherence Barriers model.

Table 5 shows that when rheumatologists responded in an instrumental manner, they most often applied counselling, followed by information provision. Most of the questions asked by rheumatologists were closed-ended. An example of a counselling advice was:

> Some people are scared and some people experience pain, because of injections. However, these injections are easier to use. But if you feel insecure using these injections, you have to discuss this with the pharmacist. You can always go there and inject with the help of the pharmacist. Or, you can inject here, with the help of a nurse. Because, you need to be sure that it goes well. *(Counselling)*

Affective responses were typically expressed as agreement followed by verbal attentiveness when patients discussed barriers. A few times, rheumatologists responded with reassurance, a joke, or a personal remark. An example of a rheumatologist's response was:

Table 5 Barriers to DMARD Use Mentioned in 58 Consultations by Patients and Rheumatologists' Instrumental and Affective Responses Specified According to RIAS Coding

COM-B	IMAB DOMAINS	BARRIERS	Instrumental Response				Affective Response			
			Open-ended Question	Closed-ended Question	Information	Counselling	Agree	Reassurance	Verbal Attentiveness	Personal Remark
C	Memory and attention	Forgetting to take medication							x	
		Mistake in dosing medication					x			
C	Skills	Insufficient cognitive, communicative, or physical skills to understand and/or administer medication				x		x		
O	Social Influences	Lack of support from others (wrong advice)								
O	Environmental context and resources	Quality of product (needle) 2* *(also scored under emotions anger)*		x	x	x	x	x		
		Change of name or appearance 3*		x	x	x	x			
		Logistics 2*			x				x	
M	Goal Conflict	Restrictions due to using medication (no alcohol) 2*		xx		x	x		x	x
		Not able to participate (socially/work) 2*		x		x	x			
		Worse well-being (limits holidays)		x		x	x			
M	Emotions	Fear 3*			x	xx	xx	x	x	
		Anger			x			x		
		Despair				x	x			
		Dependency of medication							x	
M	Belief about consequences	Experience of (long- and short term) side effects 5*		xx		xx	xxx			
		Lack of belief in efficacy 5* *(also scored under emotions despair)*			xx	xxx	x		x	
		Less acceptance of (long-term) medication 5*		xx		xxx	x			
		Belief that medication will be harmful 2*			xx	x	x			
		Lack of belief in necessity (more) medication 2*				xx			x	
		Negative expectations for tapering *(also scored under emotions fear)*	x		x		x			
		Concerns about long term use of medication								
M	Motivation and goals	Tapering failure				x				
		Side effects 36* ^ not specified, see footnote								
		Time to treatment effect		x						
		Difficulty administration medication			x		x			
M	Beliefs about capabilities	Lack of daily routine 2*				x	xx			
		Postponement intake due to struggle necessity				x		x		

Notes: Number of times mentioned as barrier X Number of times mentioned as response *Italic*: barrier mentioned under several domains ^Side effects: most instrumental responses were "asking closed questions" and "providing counselling"; the affective response was predominantly "verbal attentiveness"; when the HCP offered (in most cases) a combined instrumental and affective response, the HCPs responded with "open questions" and occasionally with a joke.

Abbreviations: DMARD: Disease-modifying anti-rheumatic drug, RIAS: Roter interaction analysis system COM-B model: Capability, Opportunity and Motivation-Behaviour model, IMAB domains: Domains according to the Identification of Medication Adherence Barriers model.

https://doi.org/10.2147/PPA.S503083

> Look, they say sometimes, never change a winning team. So, if it is really acceptable, well, if you say: 'I am a satisfied person', then I would not change anything. But, if you say specifically: 'I have often, while taking the methotrexate, a heavy feeling in my stomach on that day'…well, the dose can be reduced, right? That is possible (instrumental response, counselling). Because I do not have any shares in that stuff, do I? *(affective response, laughs, joke)*

In a few cases, the rheumatologists did not provide a response; the patients gave long monologues with various questions and the rheumatologists responded to one of the more urgent topics in those monologues.

Discussion

This is the first study in which communication about barriers to DMARD use is analysed through audio recordings. In the current study, 134 audio recordings of real-life outpatient rheumatology consultations were assessed to gain insight into whether patients with RA and rheumatologists discussed barriers, facilitators, and adherence issues to current DMARD use, and how rheumatologists responded to the issues raised. In about one out of three consultations, barriers to DMARD use were brought up by patients. Most barriers discussed were related to experiencing side effects and doubts about efficacy and resistance of (long-term use of) medication. Rheumatologists' responses to barriers of DMARD use were mostly a combination of instrumental (counselling) and affective (agreement) communication.

The barriers of DMARD use raised by patients in the current study are in line with preceding papers.[28–32] Although insufficient cognitive, communicative or physical skills to understand and/or administer medication have been reported in a previous study, these were not identified in this recent study.[33] The different study designs may account for these discrepancies. In a focus group discussion with patients, for instance, patients have sufficient time to think of, discuss, and report potential barriers to medication use, for themselves or for patients in general, which may not be the case in real-life outpatient rheumatology consultations. Another possibility is that patients do not want to mention their barriers for medication use to avoid burden for the rheumatologist or when medication-related problems were related to emotional or sensitive topics.[30,31] This reflects a dependable, sensitive and unequal relationship, in which understanding, trust, empathy, respect and time are proven barriers or facilitators in conversations.[34–36]

In line with other studies, we found that rheumatologists do not always explore and discuss problems with regard to medication.[32,37,38] Oton et al (2022) showed that HCPs almost exclusively focus on physical symptoms and pay less or no attention to other issues of relevance to patients.[28] Adherence to DMARD use is critical for disease management and potential barriers to medication use are widely acknowledged, but addressing (non)adherence issues remains suboptimal. Tools to facilitate this process in future consultations would be recommendable.[39]

The current study also shows that the way rheumatologists responded to patients' barriers for DMARD use, was predominantly a combination of an instrumental (ie, counselling) style and an affective (ie, agreement) style. This is in line with Bensing et al, reporting that in medical consultations which have often a problem-solving approach, a therapeutic approach in which affective behaviour is necessary to create a warm and trusting atmosphere, is a purpose in itself. Addressing patients' dual needs is shown to be important in medical consultations.[12]

Although the terms instrumental or affective communication are not always applied, it is evident that many descriptions reflect those communication styles in consultations, such as empathic responses (affective) by the HCP, eliciting the patient's perspective that makes the patient feel understood (affective). The instrumental style is reflected by asking questions by the HCP, providing an appropriate follow-up by providing solutions.[40] Possible solutions to overcome barriers were discussed in the current study, such as to build a daily routine around medication use, to use medication twice a day instead of once a day to avoid side effects, to change dosing, to place medication in sight to avoid forgetfulness, a different way of administering, or the rheumatologist provided more detailed information about the medication. When different communication styles are applied in consultations, it will enhance patients' satisfaction, even if the actual time spent with the patient is short.[41]

Instrumental communication plays a crucial role in ensuring that the need of patients with RA to receive full disclosure of all available treatment options (eg, changes in medication treatment), and their associated risks and benefits are met, as previous studies have demonstrated.[37,42,43] Moreover, it has been shown that HCPs often underestimate or undervalue patients' information needs.[38] In the current study, patients did not mention that, eg, information on the

inserted leaflet in medication boxes was not clear to them, nor that relevant information was omitted. This may suggest that the patients were well informed, which could have influenced the findings in the current study.

A scoping review indicated that affective communication, characterized by emotional engagement from healthcare providers (HCPs), has the potential to empower, enable, and motivate patients to take an active role in managing their disease.[44] Additionally, recognizing and appreciating the patient's individuality, behaviours, and fears are identified as critical factors in supporting patients. These findings underscore the importance of integrating both instrumental and affective communication approaches to effectively address the barriers reported by patients, with the aim of mitigating non-adherent behavior.[45]

HCPs most often responded to an affective utterance by the patient with agreement. Since patients' characteristics and needs can differ because of, eg, personalities, disease duration or disease severity, one might assume that not all patients prefer the same style of communication, and a potential need for additional support to overcome problems with regard to medication use is therefore patient-specific.[31,46,47] Sometimes the emphasis on providing information or discussing practical solutions can be sufficient to enhance adherence, while in other situations, an affective response can have the same positive effect on adherent behaviour. This asks for patient-centred communication by the HCP which departs from inquiring about patient's momentary informational and emotional needs, to actively engage patients in the conversation, encourage them to express their needs and ask questions, and to involve patients in treatment decision-making.[9,34]

Strengths and Limitations

There are several strengths and limitations of this study worth mentioning. Strengths were the large number of audio-recorded consultations (n = 134) and the use of an observer-based measure (ie, RIAS) to explore in-depth the discussions about barriers of DMARD use and the way the rheumatologists responded to these. However, several limitations should also be acknowledged. First, audio-recording the consultations may have affected the behaviour of both rheumatologists and patients. Nevertheless, at the time of these consultations neither rheumatologists nor patients were aware that the audio recordings would be used for the current study. Second, only a single consultation per patient was audio-recorded, and the consultations were snapshots of daily practice. The possibility that barriers to DMARD use had already been discussed in a previous consultation or would be discussed in a future one cannot be ruled out. Still, barriers that may have emerged in a previous consultation need attention in each follow-up consultation. A longitudinal study assessing verbal and nonverbal behaviour of patients and rheumatologists during consultations is needed to strengthen the ecological validity of our findings.[48] Third, only barriers and facilitators related to *current* DMARD use by patients were analysed. It should be pointed out that experienced barriers in the past and barriers related to future use of DMARDs may have an impact on (non)adherent behaviour in the future as well and should be acknowledged when discussing medication use, specifically when new medication treatment is prescribed.[32] Fourth, the external validity of the results might be compromised due to the high proportion of adherent participants. The latter might indicate selection bias, since it is well known that predominantly highly motivated patients participate in adherence studies.[49,50] Lastly, due to the qualitative study design, it was not possible to draw conclusions about a relationship between the barriers to DMARD use raised by patients and their potential non-adherent behaviour. Factors such as medication adherence, HCP-patient familiarity, and patient' health literacy may have influenced the conversations and could therefore be of interest in future research.

Implications

These findings present a list of barriers and facilitators of DMARD use raised by patients with RA. Considering that nonadherence to DMARDs is relatively high in patients with RA, having a negative impact on health and societal costs, it would be beneficial that patients and rheumatologists discuss potential reasons for non-adherent behavior.[51] Therefore, HCPs working in rheumatology (eg, rheumatologists, nurses, pharmacists) could be educated to ask specifically for barriers to DMARD use in an egalitarian setting and tailor their communication to patient's needs. Patients could be educated as well to initiate a discussion about barriers with their HCPs.

Conclusions

In nearly one-third of the real-life outpatient rheumatology consultations, various barriers and facilitators to current medication use were discussed. Most mentioned barriers were experiencing side effects and doubts about efficacy and resistance to (long-term use of) medication. Rheumatologists responded in most cases with a combination of instrumental and affective communication style. These findings may support rheumatologists to become aware of the most common barriers patients may perceive regarding their DMARD use and tailor their communication style to meet patients' needs.

Abbreviations

HCP, Healthcare professional; ACR, American College of Rheumatology; DMARDs, Disease-modifying antirheumatic drugs; EULAR, European League Against Rheumatism; IC, Informed consent; MAXQDA, MAXQDA is a qualitative software to analyze qualitative findings; COM-B, Capability, Opportunity and Motivation-Behaviour model; IMAB, Identification of Medication Adherence Barriers model; RIAS, Roter Interaction Analysis System; METC, Medical research ethics committee; in Dutch: medisch-ethische toetsingscommissie; RA. Rheumatoid arthritis; Wbp, Dutch personal data protection act; in Dutch: wet bescherming persoonsgegevens; WMO, Medical research involving human subjects act; in Dutch: wet medisch-wetenschappelijk onderzoek met mensen.

Data Sharing Statement

All data collected for the purposes of this study are handled and stored in accordance with the Dutch Data Protection Act (in Dutch: wet bescherming persoonsgegevens, Wbp). Identifying information about the participants were removed from the data. Each participant received a unique study code and this code was used on all data. A separate document that links the study codes to the identifying information has been digitally stored and protected. Only the research team had access to this document.

Ethical Review

This study does not fall within the remit of the Medical Research Involving Human Subjects Act (in Dutch: wet medisch-wetenschappelijk onderzoek met mensen, WMO). Nevertheless, an amendment to the previous multicenter cohort study was offered to the Dutch Medical Research Ethics Committee of East Netherland for this current study. They waived ethical approval because this study was not subject to the medical research involving the human subjects act (file number 2022-13465).

Regulation Statement

This study was conducted according to the principles of the declaration of Helsinki.

Patient and Public Involvement

There was no patient and public involvement in this study.

Consent for Publication

HCPs and patients filled out an informed consent that included permission to use all data, including publication of anonymized quotes.

Acknowledgments

The authors would like to thank all the patients and healthcare professionals who contributed to this research.

Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work. All authors read and approved the final manuscript.

Funding

An unrestricted educational fund was received from Pfizer.

Disclosure

The authors declare that they have no competing interests in this work.

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