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Published in:
Patient Education and Counseling

DOI:
[10.1016/j.pec.2023.107803](https://doi.org/10.1016/j.pec.2023.107803)

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Document Version
Publisher's PDF, also known as Version of record

Publication date:
2023

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Schackmann, L., Copinga, M., Vervloet, M., Crutzen, S., van Loon, E., Sterkenburg, P. S., Taxis, K., & van Dijk, L. (2023). Exploration of the effects of an innovative mentalization-based training on patient-centered communication skills of pharmacy staff: A video-observation study. *Patient Education and Counseling*, 114, Article 9. <https://doi.org/10.1016/j.pec.2023.107803>

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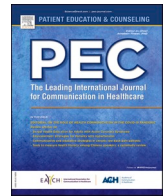
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Exploration of the effects of an innovative mentalization-based training on patient-centered communication skills of pharmacy staff: A video-observation study

Laura Schackmann^{a,b,*}, Minke Copinga^b, Marcia Vervloet^a, Stijn Crutzen^b, Ellen van Loon^{b,c,d}, Paula S. Sterkenburg^e, Katja Taxis^b, Liset van Dijk^{a,b}

^a Netherlands Institute for Health Services Research, Nivel, the Netherlands

^b Groningen Research Institute of Pharmacy, Unit of Pharmacotherapy, Epidemiology & Economics, University of Groningen, the Netherlands

^c Pharmacy De Drie Stellingen, Oosterwolde, the Netherlands

^d Wolk Academy, Oosterwolde, the Netherlands

^e Vrije Universiteit Amsterdam & Bartiméus Doorn, the Netherlands

ARTICLE INFO

Keywords:

Patient-centered communication
Pharmacy practice
Perceptual barriers
Mentalizing
Skill-based communication training
Community pharmacy

ABSTRACT

Objective: To explore whether a mentalization-based communication training for pharmacy staff impacts their ability to elicit and recognize patients' implicit and explicit medication related needs and concerns.

Methods: A single-arm intervention pilot study was conducted, in which pre-post video-recordings of pharmacy counter-conversations on dispensed-medication (N = 50 and N = 34, respectively; pharmacy staff: N = 22) were coded. Outcome measures included: detecting needs and concerns, and implicitly and explicitly eliciting and recognizing them. Descriptive statistics and a multi-level logistic regression were conducted. Excerpts of videos with needs or concerns were analyzed thematically on mentalizing attitude aspects.

Results: Indications show that patients more often express their concerns in an explicit way post-measurement, just as pharmacy staffs' explicit recognition and elicitation of needs and concerns. This was not seen for patients' needs. No statistically significant differences were found for determinants for detecting needs or concerns (i.e., measurement-, professional-type, or interaction). Differences in mentalizing attitude were observed between pre-post-measurements, e.g., more attention for patients.

Conclusion: This mentalizing training shows the potential of mentalizing to improve pharmacy staff members' explicit elicitation and recognition of patients' medication-related needs and concerns.

Practice Implications: The training seems promising for improving patient-oriented communication skills in pharmacy staff. Future studies should confirm this result.

1. Introduction

Pharmacy staff members have important tasks in counselling and educating patients. For example, providing support and advice to patients about potential medication use hinderances [1]. These may include misunderstanding of essential medication use information (practical barriers) or the hesitancy patients may have to take their medication due to certain needs and concerns (perceptual barriers), e.g., fear of side effects [2–4]. Talking about perceptual barriers is difficult when patients are stressed or have negative emotions, as these can disrupt effective communication. It is important to deal with the emotions and stress patients experience, so that there is room to have a

conversation about possible barriers. Pharmacy staff mainly gives technical instruction and often retreats as soon as patients show emotions [5]. As described in previous studies about how patient-centeredness is experienced in Danish [6] and Dutch pharmacy encounters [7,8], patients were rarely given the opportunity to provide their own perspectives. This strengthens our case about needing to support pharmacy staff with communication tools and training to detect and address patient perceptual barriers, in a manner whereby the emotions and reactions of the patient are dealt with in a sensitive manner. By adopting a more patient-centered approach to medication use, this will increase patient involvement in shared decision-making and actively soliciting their input throughout the medication use

* Correspondence to: Netherlands Institute For Health Services Research, Nivel, P.O. Box 1568, Utrecht 3500 BN, The Netherlands.

E-mail address: L.Schackmann@nivel.nl (L. Schackmann).

<https://doi.org/10.1016/j.pec.2023.107803>

Received 4 October 2022; Received in revised form 20 April 2023; Accepted 17 May 2023

Available online 19 May 2023

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process[6].

Pharmacy staff can react, by eliciting or recognizing a perceptual barrier, by using instrumental and affective communication. Instrumental communication is goal-oriented and sender focused, such as information provision about a concern or need [9,10]. Affective communication is process-oriented and listener focused, dealing with empathy and emotions [9,10]. Both types are needed for effective communication. A promising method to improve recognition of perceptual barriers, whereby both instrumental and affective communication are present, is by training mentalizing skills of pharmacy staff. Mentalizing is established as a human-specific capacity to be able to recognize and engage curiously with one's own feelings, thoughts, desires and emotions and that of others in order to facilitate effective cooperation and communication in social environments [11–13]. Mentalizing goes beyond mindfulness, which is focused on the self and involves controlled, internally focused affective communication. Previous research shows positive influence of mindfulness in physician-patient communication. For example, when a clinician engages in a mindful manner, this contributes to more patient-centered communication and more satisfied patients [14,15]. In the case of mentalization, when one takes the mental states of both oneself and others into account, this can potentially enhance the communication even more. In this study, we focus on the interaction between pharmacy staff members and patients, so the scope goes past being aware of one's own state to also being aware of the patient's mental state.

To mentalize effectively, basic aspects of a mentalizing attitude should be used, including being flexible, tolerant, judgement-free, honest, open, curious, asking (open) questions, mirroring the reactions of the other, and being aware of imbalances between the self and other [16]. Stress and arousal are common disruptors for effective mentalization as the brain switches to the fight-or-flight response [11–13]. In fact, automatic mentalizing instead of controlled makes someone more prone to biased views on themselves and others [11–13]. Hence, it is essential to recognize the emotions, feelings and thoughts, which affect the self and the other. By doing so, a person who is mentalizing, regains attention to openly focus on the other. In the case of pharmacy staff and patient interaction, the pharmacy staff member then mentalizes effectively, and will be able to make substantiated, rational choices in conversation with the patient [11], which can facilitate the detection of perceptual medication-related patient barriers.

Mentalization-based skills can be trained, and programs have been successfully used in other healthcare sectors, targeted at nurses and physicians [17,18] psychologists, and professionals/caregivers in the care of people with intellectual disabilities [19]. Healthcare professionals have shown increased knowledge and application of mentalizing in healthcare interactions, indicating that mentalizing contributes to professional development [18]. Also, they show better reflective functioning [19]. In pharmacy practice, mentalization is not yet applied. Pharmacy staff, specifically pharmacy technicians (PTs), are often first point of contact for patients at the pharmacy counter, and mostly take part in conversations with patients daily. PTs' primary role is to prepare and supply medicines, and to give advice and guidance to patients [20]. A group of Danish researchers developed a mentalization-based skill training to improve patient-oriented communication in community pharmacies [21]. This training was tested both in Denmark and the Netherlands, of which this study evaluates part of the Dutch training. The aim of this study was to explore whether a mentalization-based communication training for pharmacy staff members impacts their ability to elicit and recognize patients' implicit and explicit medication related needs and concerns.

2. Methods

2.1. Study design

In this study, a single-arm pilot intervention study was conducted.

This is an explorative pre-post intervention study, not powered on investigating impact in a statistically significant way. To understand potential behavioral differences, pre-and post the mentalization-based skills training (Box 1), conversations at the pharmacy counter between pharmacy staff members (pharmacists, PTs, and pharmaceutical consultants) and patients were video-recorded.

2.2. Participants

Training participants as well as patients gave written consent to participate in this study.

2.2.1. Pharmacy staff

Pharmacists, PTs, and pharmaceutical consultants from nine Dutch pharmacies (one outpatient, eight community pharmacies) were included in this study. Participants were recruited for the training via recruitment flyers and social media, as well as by inviting pharmacies in the extensive networks of the trainers and research team.

2.2.2. Patients

Patients who came to collect their medications were asked by the pharmacy staff member or research assistant whether they would like to participate in this study. Their participation included being filmed during their encounter with the pharmacy staff member. To ensure privacy of other persons in the pharmacy, only the pharmacy staff member and patient, who gave consent to be filmed, were filmed. Patient inclusion criteria included: being 18 years or older, collecting own medications, being proficient in the Dutch language.

2.3. Data collection

2.3.1. Video-recordings

Participants had to record three to five videos of counter-conversations with their patients collecting medication, prior to the start of the training and before the final module of the training. Pharmacy staff members who participated in the mentalizing training recorded the counter-conversations themselves, or with the help of the researchers. If the participant recorded pre-intervention and no post-intervention video recording, or vice versa, the video recording was still included in the sample.

Pre-intervention data were collected in September 2021. Post-intervention data were collected between November 19 and 26, 2021. The video-recordings were sent via a password-protected SurfFileSender link to the researchers, and downloaded on a password-protected server. Participants were required to discard the videos from their own devices.

Strict privacy rules are followed regarding the use of the video-recordings. A separate server and a separate room that only researchers who have been granted access to is used to store and watch the video-recordings. The communication database with the stored video-recordings used for this study has its own privacy regulations that must be adhered to when working with video recordings. The researchers have an obligation of confidentiality, which they agreed to via a non-disclosure agreement, in which is also stated that they have to stop the observation when the patient or health care provider in the video recording is someone they know. Also, both the patient and pharmacy team member can withdraw their consent to use the recording at any time.

2.3.2. Observational coding

The data from the video-recordings (N = 84) were coded using a coding framework for analyzing perceptual barriers including implicit and explicit concerns, needs, and implicitly and explicitly eliciting and recognizing these. The combination of the categories from the Beliefs about Medicines Questionnaire (BMQ) [22,23] and Verona Coding Definitions of Emotional Sequences (VR-CoDES) [24–26] led to the development of the protocol Implicit and Explicit Beliefs in Medicine

Box 1
Mentalization-based skills training [21].

The mentalization training was a blended learning education which lasted four months, which consisted of six (off- and online) modules (see elaborate overview of education content and structure in the education development article [21]). The modules included theoretical and practical lectures from an expert and lecturer in the field of mentalization (registered MBT-therapist and clinical psychologist), as well as communication trainers and/or lecturers from both the University of Groningen and Nivel (Netherlands Institute for Health Services Research, the Netherlands), of which some had a pharmacy background. The communication trainers had various backgrounds, e.g., pharmacist, psychologist, sociologist, whom all now teach pharmacy students and some also specifically courses about communication in pharmacy practice. The training also included practicing with a simulated patient (training actress) and receiving feedback on video-recorded conversations on dispensed medication at the pharmacy counter, homework assignments, and a final reflection portfolio.

Protocol – Specific (IEBMP-S), used as coding framework in this study (see Table 1, for types of information combined to develop the IEBMP-S).

See Table 2. for examples of which aspects to be aware of assessing

Table 1
Types of information combined to develop the IEBMP-S.

	BMQ	VR-CoDES
Explicit or implicit expression patient needs or concerns	explicit	implicit
Type data present, examples	Need 1: Patient’s health is not dependent on the medication. Need 2: Patient’s life would not be difficult without medication. Need 3: Patient would not be (very) ill without medication. Need 4: Patient future health does not depend on the medication. Need 5: Patient medication does not prevent him or her from further deteriorating. Need 6: Patient indicates something else that relates to a need. Concern 1: Patient is concerned about taking medication. Concern 2: Patient is concerned about the long-term effects of the medication. Concern 3: Patient is insufficiently aware of what medication does. Concern 4: The medication disrupts the patient’s life. Concern 5: Patient is afraid of becoming too dependent on the medication. Concern 6: The medication has unpleasant side effects. Concern 7: Patient indicates something else that relates to a concern.	Categories of cues (implicit concerns) from VR-CoDES A-G: A: Vague, unspecified words B: Hidden concerns C: Physiologic and cognitive correlations D: Neutral expression E: Repetition F: Non-verbal signal G: Past emotion (more than 1 month ago)

IEBMP-S protocol

IEBMP-S protocol is divided in categories A-F, where A-D contains a division of explicit and implicit needs and beliefs. The six types of needs and seven types of concerns are mentioned in A-D. Section E provides space for extra comments and F contains an overview of the possible implicit signals from the VR-CoDES.

- Using the coding IEBMP-S protocol, the researchers coded the following aspects:
- The type of need or concern mentioned by the patient, and whether it was implicit or explicit.
 - Whether the patient took the initiative to mention the need or concern.
 - Whether the pharmacy staff member elicited the cue of the patient, implicitly or explicitly.
 - Whether the pharmacy staff member recognized the need or concern, implicitly or explicitly.

Table 2

Examples of aspects considered when coding pre- and post-measurement video-recordings regarding pharmacy staff eliciting and recognising implicit and explicit needs and concerns.

	Elicitation - pharmacy staff member...	Recognition - pharmacy staff member...
Implicit	<ul style="list-style-type: none"> • Explains in a way that a need or concern arises in the patient. • Asks ‘Do you have any questions?’ 	<ul style="list-style-type: none"> • Uses vague words which imply the recognition of a need or concern. • Reacts with something like ‘Oh ok’ • Does not give the patient room to tell more.
Explicit	<ul style="list-style-type: none"> • Asks a specific question 	<ul style="list-style-type: none"> • Mentions something like ‘I notice you ...’ • Recognises the need or concern in clear words. • Takes action on the need or concern. • Asks further questions based on the need or concern.

pharmacy staff recognition and elicitation of implicit and explicit needs and concerns.

2.3.3. Observational coding process

First, two coders (MC and LS) analyzed six randomly selected videos from the pre-intervention measurements to test the IEBMP-S protocol and to improve it, where necessary. In case of disagreement, videos were discussed with a third researcher (LvD). The two main coders continuously discussed the coding process and how to optimally observe and code the videos during the entire research process. Thus, given the explorative nature of this study, an inter-reliability test between coders was not conducted. Rather, the researchers strived for consensus via thorough discussions within the team.

2.3.4. Coding of qualitative and quantitative data

Then, all recorded videos were observed and coded twice. Firstly, MC observed all videos and transcribed excerpts verbatim in a logbook where a need or concern occurred, and whereby the pharmacy staff reacted. All needs and concerns were coded. Furthermore, non-verbal signals in the video recording that were coded with category F from the VR-CoDES were noted in the logbook and mentioned, but not categorized due to subjectivity.

Secondly, MC coded all video-recordings in the program Behavioral Observation Research Interactive Software (BORIS) for Windows 64-bit Portable v.7.12.2. In BORIS, codes were made that corresponded with the IEBMP-S. The second coding round was to ensure validity of the first round of coding, and to facilitate the qualitative data analysis of the coded observations.

2.4. Data analysis

2.4.1. Quantitative data

The observations in BORIS were exported, and imported in STATA version 16 for the data analysis. Descriptive statistics, such as frequencies on elicitation and recognition of needs and concerns, were conducted to describe the impact of the mentalization training. The outcomes included: frequencies on implicit and explicit expressions of needs and concerns from patients, and implicit and explicit reactions from pharmacy staff towards the patients. Also, differences between job function and the outcome measures were investigated.

Additionally, a multilevel logistic regression analysis was used to test for potential determinants for detecting needs and concerns by professionals. Due to non-significant differences after the null model, no other models were tested.

2.4.2. Qualitative data

The excerpts from the logbook were thematically analyzed using a deductive approach, see [Box 2 \[16\]](#). This overview was co-created with an expert in the field of attachment and mentalization (PS). The videos in which needs and concerns were expressed (N = 17), were re-watched, observed, and analyzed (LS). As mentalizing is about implicit and explicit cues (non-verbal and verbal actions), the verbatim excerpts were analyzed on the verbal cues and actions. Therefore, these 17 recordings were re-watched for the non-verbal and implicit cues.

3. Results

3.1. Sample characteristics

In total, 24 participants signed up for the mentalization training, of which 22 participants from nine different pharmacies gave consent to use video-recordings for this study. All participants were females. Most participants (68.2%) were aged between 25 and 44 years, and about half (54.5%) of the participants were PTs ([Table 3](#)).

Patient background data was not collected, though based on the variation of included pharmacies, it can be assumed that there is diversity in the patient populations (e.g., people with higher and lower socio-economic backgrounds).

Table 3

Pharmacy staff characteristics (N = 22).

Characteristics	N (%)
Gender	
Female	22 (100)
Age	
<25 years	2 (9.1)
25–34 years	6 (27.3)
35–44 years	9 (40.9)
45–54 years	3 (13.6)
> 54 years	1 (4.5)
Unknown	1 (4.5)
Job function	
Pharmacy technician	12 (54.5)
Pharmacist	5 (22.7)
Other	5 (22.7)

3.2. General characteristics observations

In total 84 videos were recorded, of which 50 pre-intervention and 34 post-intervention videos. Videos from eight of the nine pharmacies were observed, as participants from the ninth pharmacy did not submit video-recordings. In total, in 17 out of 84 video-recordings needs and concerns were observed (nine of the 50 pre-intervention; eight of the 34 post-intervention videos).

3.3. Patient needs and concerns

In the 17 videos where, patient perceptual barriers were present, there were 34 coded concerns (25 pre-intervention and nine post-intervention) and 15 coded needs (four pre-intervention and 11 post-intervention). The implicit needs and concerns were most often characterized by VR-CoDES A, which is implicitly mentioning vague, unspecified words (53.3% pre-intervention, 50.0% post-intervention).

Patients took more initiative to express a need in the post-intervention, a shift from 11.1% to 56.3% (n = 2 and 9), whereby for concerns were less common (shift 88.9–43.8% (N = 16 and 7)). Moreover, patients' more often explicitly expressed concerns during post-intervention counter-conversations (shift 40.0–55.6% (N = 10 and 5) ([Fig. 1](#)), while the expressed needs decreased (100.0–45.5% (N = 4 and 5)).

Box 2

Overview of the basic principles of the mentalizing basic attitude.

- Check if you are calm from 'inside'
- Open attitude; do not judge; being? yourself / being honest
- Curious, interested in the other
- You cannot be sure what the other person is thinking
- Flexible, willing to revise your opinion
- More focused on 'inside' (thinking, feeling, wishing) than on 'outside' (= behavior)
- The relationship with your client is important; you pay attention to disturbances
- Try to solve misconceptions; pharmacy staff takes the responsibility
- Stimulating skills that promote mentalization both in yourself and in your client
- Mirroring the other
- Asking questions
- Naming emotions
- Active listening
- Epistemic trust:

- i. Mention the name of the other person.
- ii. Indicate that the pharmacy staff member wants to tell something important.
- iii. Asking the attention of the other.

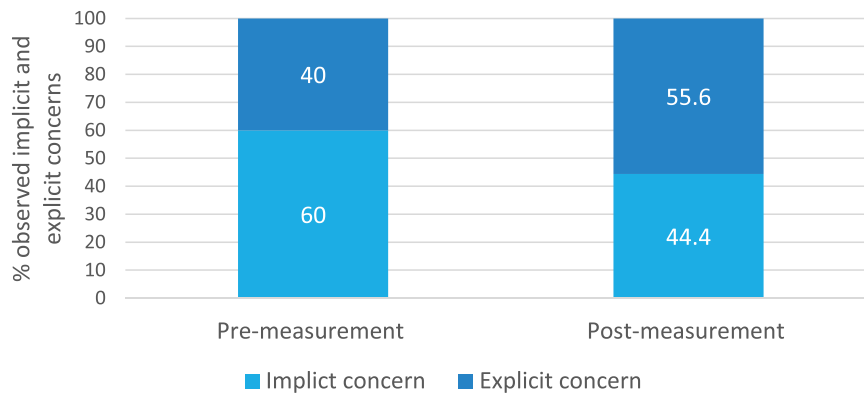


Fig. 1. Shift in the patient’s concerns expressed as observed in the pre-and post-intervention video-recordings (N = 17).

3.4. Pharmacy staff elicitation and recognition of needs and concerns

Participants seemed to elicit and recognize explicit needs and concerns more often after the training (shift 60.0–100.0% (N = 6 and 4) and 70.8–86.7% (N = 17 and 13)) (Fig. 2). There is a decrease in implicit recognition, a shift from 29.2% to 13.3% (N = 7 and 2). Regarding implicit elicitation, there were four observations in the pre-intervention and no observations in the post-intervention.

Amongst PTs, there was an explicit shift towards eliciting and recognition, while this is not the case for pharmacists or the other pharmacy staff members (i.e., pharmacy consultants). PTs elicited needs and concerns five times in the pre-intervention, while four times in the post-intervention. Here, all four times were explicit. Recognition of needs and concerns occurred six times in the pre-intervention and 13 times in the post-intervention. Here, 11 of the 13 times a need or concern were explicitly recognized. Pharmacists elicited needs and concerns five times in the pre-intervention and zero times in the post-intervention. There were no observations for the ‘other’ pharmacy staff members.

Examples of implicit and explicit elicitation and recognition as observed in the pre-post video-recordings are illustrated in Table 4.

3.4.1. Potential determinants for detecting need and concerns by pharmacy staff members

A multilevel logistic regression analysis was performed to test for statistically significant differences between the videos observed (N = 84) for needs and concerns and the pharmacy staff member. The output of the null model, Model 1, without predictors, (Log likelihood –40.12; OR.19, SE.08 (95% CI [0.08–0.45]); ICC (SE):.18(0.20)), showed no significant difference (chibar2(01) = 1.06 Prob > =

chibar2 = 0.1518) meaning clustering did not have to be taken into consideration in the data analysis.

3.5. Overall basic principles of a mentalizing attitude

Video-observations for the implicit cues gave insight into how the pharmacy staff members developed their mentalizing attitude in pharmacy practice.

3.5.1. Open attitude, calm, and focus on the ‘other’

The pharmacy team members appeared calm, used a calm tone and did not appear stressed in the before-and-after measurements. In the pre-intervention, we observed that a pharmacy team member diverted the conversation in which a patient wanted a medication switch to the point where the patient agreed that they would first wait for the appointment with the specialist. This was made possible by the staff member’s calm tone, clear explanations, and asking whether the patient understood the explanation. Post-intervention, there was an example where the pharmacy staff member explicitly made space and time for the patient. The pharmacy staff member interrupted the patient, then apologized for interrupting, and gave the patient the space to finish their story.

3.5.2. Engagement with patient

Also, in both pre-post measurements, pharmacy team members regularly showed interest in the patient, by means of an open body language, such as bending towards the patient and the use of hand movements when explaining. This was made evident as the pharmacy staff members looked away from their computer screen and towards the patient, while the patient is talking. A noticeable observation post-

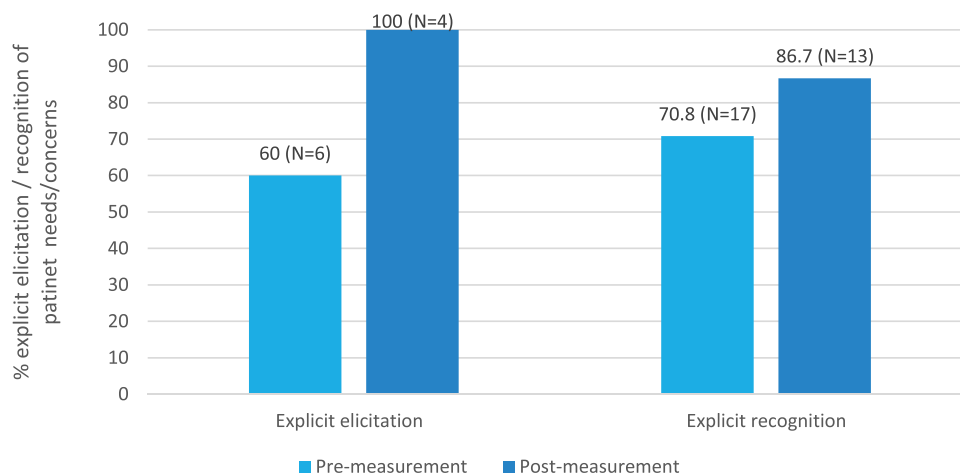


Fig. 2. Trends of explicit elicitation and recognition of the patient’s needs and concerns.

Table 4
Examples of pharmacy staff member's recognition or elicitation of patient needs or concerns in the pre-post intervention video-recordings.

Elicitation	Recognition
<p>Implicit</p> <ul style="list-style-type: none"> Reference to previous experiences, but not the specified current concern Explanation from Pharmacy staff member elicits patient's reaction Vague/general clarifying questions/terms from Pharmacy staff member elicits patient's reaction, e.g., 'Everything is clear to you?' or 'Do you have any questions?' 	<ul style="list-style-type: none"> Uses vague words which imply the recognition of a need or concern, e.g. "I can't give you any guarantees [about the side effects]". Reacts with something like 'Oh ok' Does not give the patient room to tell more, e.g. "Yes, yes, I'm going to grab it for you [the medicine]"; implicit recognition because the pharmacy team member does not let the patient talk further and does not ask about it.
<p>Explicit</p> <ul style="list-style-type: none"> Asks a specific/ rhetorical question, e.g., 'Oh is that so? What do you think.?' or 'What do you mean?' or 'Do you also feel like you're benefiting from it?' or 'yes, but if you take the tablets, you have no complaints?' 	<ul style="list-style-type: none"> Mentions something like 'I notice you ...' or 'I hear you say' (example of repetition use) Mirrors/repeats what the patient say, e.g., 'eh that it made me so nauseous', pharmacy staff member's reaction: 'okay so you got very nauseous from those other tablets' Recognizes the need or concern in clear words, e.g. You find that you have had more trouble breathing since using the [type of inhalation medication] Recognizes emotion/experience of patient, e.g. 'Yes, that was a bit of a shock' Reassures patients, e.g., Pharmacy staff member states they would have told this if this had been the case' Place yourself in the situation of another, e.g. 'I can imagine' or 'Oh, yes, that's less fun huh.' Give clear explanation to patient about need or concern Acts on the need or concern, e.g., Pharmacy employee explicitly recognizes the concern by giving possibilities/ solutions/taking action: 'yes if you want, I can check if [the medicine] is the same'. Asks further clarifying questions on the basis of the need or concern, e.g., 'Okay and do you have.?' or 'Have you ever had an instruction for ehm.?' or 'So, is it regularly that you suffer from this?'

intervention was that pharmacy team members were longer engaged with the patient, instead of focused on their computer screen. Pre-intervention, pharmacy team members sometimes looked at the patient, but then also were talking with the patient, while working on the computer or preparing the medicines. Post-intervention, it appears that more explicit attention is given to the patient, e.g., more attentively looking at the patient.

3.5.3. Mirroring

Pre-and-post intervention, pharmacy staff members made an empathetic appearance. They often mirrored the patient's laugh in both pre and post measurements. Also, pharmacy staff used non-verbal mirroring in both measurements. For example, in the pre-intervention measurement, a patient asked whether they had to take one tablet, and for that

they stuck out their finger with a one, and the pharmacy team member responded, verbally yes and also stuck out one finger. Also, in the post-intervention measurement, a patient had portrayed that she had to vomit, and the pharmacy team member verbally mirrored 'It came up immediately,' and also mirrored non-verbally the urge to vomit.

3.5.4. Explicit recognition

An observation in the post-intervention observations was that pharmacy staff members more often mentioned an emotion, or asking explicit questions. For example, stating emotions, such as: "Yes, that must have been a bit of a shock," and checking the facts with the patient and not making assumptions, as depicted in the following example: "I saw that you are also taking calcium?" asked the pharmacy staff member, and the patient responded "Yes, yes."

3.5.5. Inside versus outside behaviors

Furthermore, post-intervention, it seemed that pharmacy staff are somewhat more focused on the 'inside' (thinking, feeling, wishes) than on the 'outside' (observed behavior). For example, a pharmacy team member tried to comfort the patient about their concern, saying: "I can reassure you that this is not necessary." A second example is the use of non-judgmental questions to find out how the patient was feeling, e.g. "Do you think that would benefit you too?".

3.5.6. Epistemic trust

Lastly, there were examples of epistemic trust post-intervention. Specifically, the pharmacy staff member who addressed the patient by their name during the conversation. Interestingly, two separate pharmacy team members mentioned the patient's name during the conversation with the patient post-intervention, "Okay, Mr. XXX, I just checked your patient file", and "So, Mr. XXX, I got them [the medications] for you."

4. Discussion and conclusion

4.1. Discussion

The mentalizing training shows the potential of mentalizing to improve pharmacy staff members' explicit elicitation and recognition of patients' medication-related needs and concerns. The training could have positive effects in improving patient-oriented communication in the pharmacy. By applying mentalization in patient encounters, pharmacy staff can better understand patient's thoughts and needs and thus build a better therapeutic relationship.

4.1.1. Patient needs and concerns

Patients appear to express their concerns more explicitly and pharmacy staff members appear to elicit and recognize needs and concerns explicitly more often. In 20% of the videos (17 of the 84 observed videos) patient expressed needs or concerns. This is likely to be representative of pharmacy practice given that these counter-conversations have a short duration and people may already be used to picking up medications repeatedly. This is also reflective of pharmacy staff work that they carry out on a routine-basis, particularly, standard pharmacy-counter interactions regarding dispensing of medications and medication monitoring [27].

The use of mentalization-based communication skills in pharmacy practice, as shown in these study results, can lead to patients having less barriers to explicitly mention their needs on medication use and can increase the relative number of explicit concerns. In previous research, it has been found that pharmacy staff who did not recognize their own mental state, were also not sufficient in being concerned with the patients' needs and concerns towards medication use [5,21]. The mentalization training has shown to help pharmacy staff recognize their own mental states, while not taking the patient's mental state personally. This entails being empathetic, understanding of someone else's mental

or emotional state and sharing the emotional experience of the other person [28,29]. Effective mentalization goes beyond solely empathizing, where one feels what other feels. Instead, mentalization also includes understanding why someone feels what they feel. Mentalizing requires a more complex cognitive process than empathy, as it involves considering multiple perspectives and taking into account contextual information to make inferences about the mental states of oneself and others.

By training pharmacy staff in mentalizing, this can help pharmacy staff develop a more positive and accurate sense of self. Mentalizing can have a significant impact on one's self-perception in various ways such as improved self-awareness, increased empathy, better social skills and improved emotional regulation. In return, this can enable pharmacy staff to pay active attention to the patients' needs and concerns towards medication use. This could explain the increase in needs in general and explicit concerns.

4.1.2. Elicitation and recognition of patient needs and concerns

This study suggests that there is a shift from implicit to explicit elicitation and recognition of patient's needs and concerns. This can be explained by the overall training in mentalization and the additional focus on active listening and mirroring during conversations with patients. Additionally, subtle differences in the mentalizing attitude pre- and post-intervention are seen, e.g., more direct attention towards the patient. For example, addressing someone by their name can contribute to building epistemic trust, which is the degree to which one person trusts another's knowledge, expertise, and ability to provide accurate information. When we call someone by their name, it indicates that we recognize and acknowledge their individual identity, which can help establish a personal connection between two people. In return, this can create a sense of familiarity and comfort. A reason why there may have been more direct attention towards the patient post-training is because this was discussed extensively in the feedback on the video-recordings of counter conversations, as part of the training by communication experts to the participants. These aspects contribute to patient-centered communication in pharmacy practice.

Also, a training on mentalization seems to lead to more explicit communication about perceptual barriers in PTs, but not pharmacists and 'other' staff (e.g., pharmaceutical consultants). Amongst PTs, there is an explicit shift towards eliciting and recognition of needs and concerns from pre- to post-intervention. Reasons why may include that they were the largest group, and they are also the group that can immediately put what they have learned into practice as they have more daily patient contact [30]. It must be stated that the division of needs and concerns elicited and recognized amongst the different types of pharmacy staff members resulted in small groups.

4.1.3. Strengths and limitations

A main strength of this study is that it is the first study to investigate the effect of mentalizing on communication in pharmacy practice by using video observations. These first results suggest a potential positive effect of mentalizing in pharmacy practice. Video-recordings provide more data/information than audio-recordings as they provide the opportunity to observe non-verbal communication. Together with this strength, the recordings were filmed in the same period, namely a week before the first education day (pre-intervention) and before the second-to-last module (post-intervention). This created similar videos in the field of mentalizing knowledge, which gave the possibility to compare the video-recordings reliably with each other. Another strength was the analysis method used and developed framework to observe the video-observations. This analysis method and observation framework can also be used as a model in future studies.

A limitation is that the participants were probably already motivated to start this training. The positive results of this study therefore do not necessarily state that every participant will show progress. Nevertheless, it will probably also only be motivated people who are early adopters of a new communication concept in pharmacy practice. By sharing

experiences of the early adopters, this may make other pharmacy staff members enthusiastic to participate in a future training. Moreover, related to pharmacy staff characteristics, all participants were female. In general, the proportion of females in Dutch pharmacy practice is high [31]. According to the Dutch foundation of pharmaceutical key figures, in 2018, 90% of the staff working in Dutch community pharmacies was female. Hence, our sample reflects an accurate representation of the pharmacy staff working in the Dutch pharmacy practice.

Another limitation is the low number of recorded videos for the study as not all participants sent in the requested number three-to-five videos in both the pre- and post-intervention, which could have introduced a selection bias. Also, the proportion of videos in the pre-measurement (59.5%) was larger than the post-measurement (40.5%). A reason why there were fewer video's post-measurement could be due to the intensity of the education-load combined with a high workload in the pharmacy. We could speculate that the video's missing could more often be of the participants who did not notice any change in their behavior, or who had less affinity with the training than the more motivated participants. This can result in bias in the selection of video's in our study sample. However, we cannot confirm this speculation as we did not investigate the characteristics of the dropouts, using a drop-out analysis. We do not see this as a barrier given the explorative nature of this study, aiming to understand whether a mentalization-based communication training for pharmacy staff members impacts their ability to elicit and recognize patients' implicit and explicit medication related needs and concerns.

4.2. Conclusion

This study indicates the great potential of an innovative training for pharmacy staff to improve their communication skills. Patients seemed to make their concerns more explicit and pharmacy staff seemed to elicit and recognize needs and concerns explicitly more often. The training appears to be valuable to improve patient-oriented communication in the pharmacy. This exploratory study warrants a larger study on the effect of the mentalization-based communication skill training in pharmacy practice.

4.3. Practice implications

The first, yet promising results from this explorative study indicate that a training in mentalization may be beneficial in detecting and responding on patients' concerns and needs. This is a motive for the implementation of this training with accreditation for Dutch pharmacy staff members. Such training is an innovative way to learn communication and move towards patient-centered care. Furthermore, this study offers a solid basis for a new study into the mentalizing capacity of pharmacy staff, as this training can help pharmacy staff members better recognize and detect patient medicine-related barriers and support proper medicine use.

Future research could examine if an increase in needs and concerns and the elicitation and recognition thereof is related to specific types of pharmacy staff members. In this study, the number of participants per function resulted in small numbers and a larger study is needed to further investigate the differences in job function. Also, other types of studies such as a RCT study or single case studies with multiple baseline designs could be set-up to further explore the effects of mentalization in pharmacy practice. In such a design, behavior is measured across either multiple individuals, behaviors, or settings, and outcomes are irreversible due to learning effects. Furthermore, more research is needed to understand other situations where these skills may be applicable and useful, e.g., medication review or medication switch conversations, and the case of deprescribing medication (i.e., attempt is made to stop the use of medication). Moreover, a distinction between the type of dispensed medicines could be made, for example first time dispensed medicines or repeated prescriptions and the types of conversations pharmacy staff members have with the patients about their medicine

use. Lastly, more focus on outcome measures related to mentalizing abilities should be incorporated in future studies, e.g., measuring reflective functioning, perspective-taking, emotion recognition, and the attribution of mental states.

Ethical approval

The study protocol was assessed and accepted by the Medical Ethical Review Committee (METC) of the University Medical Centre of Groningen (UMCG) (reference number 202100510). The METC concluded that this study is not a clinical research with human subjects as meant in the Medical Research Involving Human Subjects Act (WMO).

CRediT authorship contribution statement

L. Schackmann: Conceptualization, Methodology, Validation, Formal analysis, Data curation, Writing – original draft, Visualization, Project Administration. **M. Copinga:** Conceptualization, Methodology, Validation, Formal analysis, Data curation, Writing – original draft, Visualization. **M. Vervloet:** Data curation, Writing – review & editing. **S. Crutzen:** Methodology, Data curation, Writing – review & editing. **E. van Loon:** Methodology, Data curation, Writing – review & editing. **P.S. Sterkenburg:** Conceptualization, Data curation, Writing – review & editing. **K. Taxis:** Conceptualization, Methodology, Validation, Formal analysis, Data curation, Writing – review and editing, Visualization. **L. van Dijk:** Conceptualization, Methodology, Validation, Formal analysis, Data curation, Writing – review and editing, Visualization, Supervision.

Declaration of Competing Interest

L. Schackmann received funding from Teva and the Royal Dutch Pharmacists Association for research not related to this study and therefore has no competing interests to declare. M. Copinga has no competing interests to declare. M. Vervloet received funding from AstraZeneca, Biogen, ZonMw, Teva, and the Royal Dutch Pharmacists Association for research not related to this study and therefore has no competing interests to declare. S. Crutzen received funding from the Royal Dutch Pharmacists Association for research not related to this study and therefore has no competing interests to declare. E. van Loon received funding from the Royal Dutch Pharmacists Association for research not related to this study and therefore has no competing interests to declare. P.S. Sterkenburg received funding from ZonMw, and Bartiméus Foundation for research not related to this study and therefore has no competing interests to declare. K. Taxis funding from the Royal Dutch Pharmacists Association, ZonMw, and EIT Health for research not related to this study and therefore has no competing interests to declare. L. van Dijk received funding from Biogen, the Dutch Ministry of Health, Zilveren Kruis, ZonMw, and TEVA for research not related to this study and therefore has no competing interests to declare.

Acknowledgments

We would like to thank all respondents who participated for their contribution to this study. This work was supported by EIT Health [grant number: 210638; name: 'Patient Centered Communication in Community Pharmacy'].

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