



Communication skills-based training about medication switch encounters: pharmacy staff and patients' experiences

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Abstract

Background Non-medical medication switches can lead to difficult conversations. To support pharmacy staff, a communication training has been developed based on two strategies: 'positive message framing' to emphasize positive elements of the message and 'breaking bad news model' to break the news immediately and address emotions.

Aim To assess how patients and trained pharmacy staff experience the application of communication strategies for non-medical medication switch conversations and which are barriers and facilitators for the application.

Method The Kirkpatrick training evaluation model, level 3 'behavior', including barriers and facilitators and 4 'results' was used. Trained pharmacy staff registered switch conversation characteristics and asked patients to complete a questionnaire. Semi-structured interviews with trained pharmacy staff members were conducted. Quantitative data were analyzed descriptively and interview data were analyzed thematically.

Results Of the 39 trained pharmacy staff members, 21 registered characteristics of 71 conversations and 13 were interviewed; 31 patients completed questionnaires. Level 3: trained pharmacy staff self-reported they applied aspects of the strategies, though indicated this was not yet a standard process. Interviewees indicated signs of increased patient contact and job satisfaction. Time, face-to-face conversations and colleague support were facilitators. Level 4: pharmacy staff members were satisfied with most switch conversations (89%), particularly with addressing emotions (74%). Patients were (very) positive (77%) about the communication, particularly about clear explanations about the switch.

Conclusion Pharmacy staff's learned behavior includes being able to apply aspects of the strategies. The training results show first signs of better patient-pharmacy staff relationships and increased job satisfaction.

Keywords Patient-centered communication · Medication switch encounters · Pharmacy practice · Communication training

Impact statements

- Pharmacy team members can tailor how they address patient-experienced challenges, such as experienced medication switches, when applying aspects of taught communication strategies, the 'breaking bad news model' and 'positive message framing.'
- When aspects of the communication strategies are consciously applied, first signs of better patient-pharmacy staff relationships and increased job satisfaction were noticed.
- This study shows promising signs of the postgraduate communication training to be useful in learning how to deal with and address patient emotions in pharmacy practice.

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Introduction

A non-medical medication switch, also referred to as a medication switch hereafter, is defined as a change in a patient's medicine or its brand, which is expected to have comparable or similar effects as the old medicine. In case of generic substitution, the new medicine contains the same active substances, though the medication's inactive ingredients, name, appearance, and packaging can be different. In contrast, therapeutic substitution is where the medication's active ingredient is different. Generic switches are partly enforced by health insurance policies directed towards reduction of prescription medication costs [1]. Furthermore, the rising global incidence of medication shortages [2] has led to an increase in medication switches, both generic and therapeutic, a phenomenon that has become increasingly common [3, 4]. Our previous study showed that more than half (54%) of the pharmacy technicians indicated they conduct medication switch conversations daily, and less than a third (30%) do this on an hourly basis [5]. The intention when switching for non-medical reasons is that the new medication has the same effects as the old medication [6, 7]. Medication switching regularly leads to negative reactions. Conversations about medication switches can be perceived as delivering negative news, as they often lead to a situation that cannot be changed, often involve emotions, and pharmacy staff and the patient are placed in a certain powerless position. As a result, conveying the news about a medication switch can have a significant impact on both the pharmacy staff and the patient. Patients can feel insecure about (changes in) their medication use due to confusion or distrust about the medication [8]. Patients can experience new side-effects, problems with medication management, and decreased effectiveness [9, 10]. Thus, medication switches can lead to less effective use of medications [11].

Challenging situations that increase stress or negative emotions tend to disrupt effective communication [12, 13]. Non-medical medication switch conversations, especially if they are not patient-oriented, are often perceived as difficult by pharmacy team members because of the negative reactions of patients. In our previous study, 40% of all pharmacy technicians indicated that they regularly experience these conversations as difficult [5]. About three-quarters (72%) of all the pharmacy technicians indicated that they experienced anger from a patient usually multiple times per week or month, which negatively influences job satisfaction [5]. Stressful encounters influence one's cognition, e.g., ability to make decisions, judgement, ability to listen, or to pay attention [14]. It is therefore essential to address the patient's emotions, thoughts, and feelings that can influence effective communication during medication switch conversations, as this is the moment to take away any medication-related concerns and doubts patients may have about the switch [15–17]. Patient centered communication can positively influence patient's perceptions of the

medication, e.g., trust in the medication, and better acceptance of the medication switch [17]. Therefore, it is important to support pharmacy team members in how to best deliver the message and how to address patients' emotions in conversations about non-medical medication switches.

To this end, we developed a communication training based on the 'breaking bad news model' and 'positive message framing' strategies. The 'breaking bad news model' [18, 19] consists of three phases: (1) delivering the bad news or negative message, (2) dealing with the reactions of the recipient, and (3) looking for a solution. With 'positive message framing' the advantages of the situation are emphasized in the message. Previous studies have shown that putting emphasis on the positive aspects (i.e., experiencing an adverse effect indicates that the medication is working), has led to greater willingness to switch medication and to a reduction of the nocebo effect [20, 21]. These strategies have shown positive effects in other contexts [20, 21]. To date, these strategies are seldom applied in the pharmacy setting, while their use could contribute to a better course of conversations in the pharmacy when communicating during difficult situations.

Aim

To assess how patients and trained pharmacy staff experience the application of communication strategies for non-medical medication switch conversations and which are barriers and facilitators for the application.

Ethics approval

The study protocol was approved by the Institutional Review Board (IRB) of the division of Pharmacoepidemiology and Clinical Pharmacology, Utrecht University (UPF2013 approved on 5th of February 2021 and UPF2108 on the 11th of October 2021).

Method

Study setting

In September 2021, 39 pharmacy team members from 15 Dutch pharmacies participated in the communication training about non-medication medication switches (see Box 1, for training overview, developed as part of a previous study) [22].

In a period of two-to-four months post-training, pharmacy team members had the opportunity to apply the two communication strategies in daily pharmacy practice.

Box 1 Communication training about non-medication medication switches

In this training, pharmacy team members were taught how to apply two communication strategies:

- 'Positive message framing' to emphasize positive elements of the message [20, 21].
- 'Breaking bad news model' to bring the news immediately and give room for and address emotions [18, 19].

Focus of this training was strengthening skills by learning strategies to deal with emotions and reactions of patients, which included:

- How to deliver the message in a factual, honest, empathetic, and direct manner.
- How to deal with the reaction of the patient, and how to move together to solutions in the conversation [22].

The training consisted of an e-learning with theory and reflective exercises, a half-day live training session with opportunity to practice conversations with a simulated patient, and an online reflection session 6–8 weeks post-training.

Table 1 Overview of study design

Kirkpatrick level	Participant	Research question	Learning indicator	Data source(s)
Level 3 'behavior' (using theoretical framework COM-B to understand behavior change)	Pharmacy team member	How/when do pharmacy team members apply the communication strategies?	Application of strategies in practice Chosen communication strategy Difference per patient/situation Barriers/facilitators to applying the strategies	Pharmacy team member interviews Pharmacy team member conversation characteristic registration form Pharmacy team member interviews
Level 4 'results'		What effects do applying the communication strategies have on pharmacy team members involved in the conversation?	Pharmacy team member satisfaction with the conversation Pharmacy team member job satisfaction Pharmacy team member-patient relationship	Pharmacy team member conversation characteristic registration form Pharmacy team member interviews
Level 4 'results'	Patient	What effects do applying the communication strategies have on patients involved in the conversation?	Patient satisfaction with the conversation	Patient questionnaire

Design

As communication is a two-way process [23, 24] experiences of both pharmacy team members (pharmacists and (advanced) pharmacy technicians¹) and patients regarding the non-medical medication switch conversations post-training were included in this evaluation.

The Kirkpatrick Model was used in this study, as a recognized method to evaluate the outcomes of a training, as it rates the training methods against four levels: (1) reaction (e.g. intentions to apply learned skills), (2) learning (e.g. skills learned), (3) behavior (e.g. how the learned skills are applied),

and (4) results (e.g. the (learning) outcomes, experiences, and/or effectiveness of the training) [25]. In our previous study, the training was evaluated, using the Kirkpatrick Model level one 'reaction' and two 'learning' [22]. In brief, results from level one, pharmacy team members indicated post-training that they would give more space to patients to express their emotions and/or concerns. Regarding level two, participants indicated that what made it possible to go ahead and apply the strategies in practice, was practicing the conversations, role-playing, and receiving feedback during the training [22]. In this study, Kirkpatrick model level 3 (applied behavior) and 4 (results of applying the strategies) were evaluated.

In order to assess the learning indicators on level 3 and 4 of the Kirkpatrick model, we defined six learning indicators (Table 1). To assess them, we collected three types of data: (1) interviews with pharmacy team members, (2) pharmacy team member's structured registrations of non-medical medication switch conversations, and (3) patient questionnaires about their experiences during a non-medical medication switch conversation (post-training for the pharmacy team member).

¹ The Dutch pharmacy workforce is comprised of pharmacists from 6-year university programs and pharmacy technicians from 3-year vocational programs. A pharmacy technician can have more qualifications and responsibilities, e.g., improving pharmaceutical patient care and guiding specific patient groups (i.e., patients with polypharmacy, patients with chronic diseases), when they followed additional post-graduate training. These types of technicians are then referred to as advanced pharmacy technician (or in Dutch: pharmaceutical consultant) [22].

Data collection

Data were collected in three ways: (1) Pharmacy team member interview, (2) Pharmacy team member conversation characteristic registration form, and (3) Patient questionnaire. The pharmacy team members invited patients who took part in a non-medical medication switch conversation post-training to complete a questionnaire. Patients were asked after the conversation whether they were willing to complete a questionnaire. Pharmacy team members could invite patients by email with a link to an online questionnaire within one week after the conversation or hand over a paper version of the questionnaire directly post-conversation.

The interviews (1) took place online via Zoom or via telephone between November 2021 and February 2022. The interviews were audiotaped with permission of the participant. For the conversation characteristic registration form (2), data collection took place between October 2021 and February 2022. Pharmacy teams were reminded on three occasions to fill in the registration forms post-training. Lastly, data collection for the patient questionnaire (3) took place between October 2021 and February 2022. Pharmacy team members were reminded to ask patients to complete the questionnaires on three occasions post-training.

Topics for the pharmacy staff interviews (Supplementary material 1) were identified based on literature, themes that arose out of the post-training evaluation questionnaire, the previous needs assessment results [5], and developed and rolled out communication training [22]. Similarly, topics for the registration forms (Supplementary material 2) and patient questionnaires (Supplementary material 3) were based on the outcomes of a needs assessment [5] and the content of the training [22]. Due to feasibility reasons, the data collection of the pharmacy team member conversation characteristic registration forms and patient questionnaires were collected independently and were not necessarily from the same conversations.

Table 2 provides an overview of the type of data source, types and content of questions asked, for which Kirkpatrick model level the question(s) were posed, and whether/and how the data source was tested.

Data analysis

Qualitative data

The audiotaped interview recordings were transcribed verbatim. Two researchers (LS and MH) coded and then analyzed the interviews independently, using deductive and inductive coding. The deductive codes were derived from the topics used in the interview guide and structured according to the topics of the COM-B model. The COM-B model is a widely used model in the field of implementation science to

understand behavioral change using the three domains [27]. In order to implement a taught communication strategy in daily practice, a change in behavior is necessary. To structure the results for the learning indicator 'Barriers/Facilitators to applying the strategies,' the 3-domain COM-B model (capability, opportunity, motivation) was used [27]. Capability includes the knowledge, skills, and abilities to engage in the behavior [27]. Opportunities are the external factors which make doing a particular behavior possible [27]. Motivation includes the internal processes influencing one's decision-making and behavior [27].

Significant discrepancies in coding were discussed between LS and MH. LS and MH formulated subthemes and overarching themes which were organized in a code tree. The interview data were managed and analyzed in MAXQDA (version 22).

Quantitative data

Descriptive statistics (mean (SD), frequencies (%)) were used to describe the study population, the general behavior of the pharmacy team members (Kirkpatrick model level 3) and the results on pharmacy team member and patient level (Kirkpatrick model level 4). Participant responses from a total of 71 pharmacy staff registration forms and 31 patient questionnaires, which had unanswered questions (referred to as 'missing'), are included in the analysis. In the results, the denominator represents the total number of respondents who answered that specific question, and the numerator represents the number of respondents who specified a specific answer (e.g., 'completely agree'). The statistical analysis software STATA (version 16) was used.

Regarding the open answered questions, the responses were collated and analyzed thematically, identifying similar/frequently mentioned reasons that respondents gave to justify/explain learned behaviors and experiences.

Results

Sample populations of the three data sources

Of the 39 trained pharmacy team members, 21 (8 pharmacists and 13 (advanced) pharmacy technicians) from 11 pharmacies registered in total 71 conversations about non-medical medication switches post-training. In about two-thirds (45 out of 68) of the registered conversations, pharmacy team members indicated that conversations primarily took place at the pharmacy counter, and lasted less than five minutes (65%, 44/68). About two-thirds (66%) of these conversations (45 out of 68) were about non-medical medication switches due to healthcare insurance preference policy

Table 2 Overview of qualitative and quantitative data collection

Kirkpatrick level	Participant	Type of data collected	Types of questions	Data source tested
Level 4 'results'	Pharmacy team member	Background characteristics, Type and amount of medication switch conversations conducted post-training, Experiences with applying the learned strategies, Facilitators and barriers to applying the strategies Effects of the applied strategies	Semi-structured questions	N/A
Level 3 'behavior' (using theoretical framework COM-B to understand behavior change)	Pharmacy team member	Participant background and conversation characteristics Conversation characteristics included: applied strategies and experience(s) Conversation experiences focused on the message delivery and reaction to patient's emotions/ concerns (e.g., how the pharmacy team member brought the message in the conversation)	Open and closed questions	The conversation characteristics registration form was tested by two pharmacy team members for the feasibility. Their feedback was included in the forms
Level 4 'results'		Conversation characteristics also included effects of applying the strategies in the registered conversations		
Level 4 'results'	Patient	Patient background characteristics included: Birth year, gender, number of prescribed medications, and education level (categorized as low, middle, high in accordance with the Statistics Netherlands [26]) Conversation characteristics included: Where/how long the conversation took (place), reason for switch, for which medication the patient switched The experience(s) with the registered conversation (Kirkpatrick model level 4) included: Questions about how overall satisfied the patient was with the conversation, and specifically about message delivery and reaction to patient's emotions/concerns	Open and closed answered questions	Tested by two representatives of patient organizations, one of whom had much experience with drafting questionnaires for patients. They proposed textual changes which were included in the questionnaire

or agreements, followed by conversations about medication shortages (28%, 19/68).

In total, 49 patients received a questionnaire, of which 31 were completed. The patients were middle aged (mean 51.7 SD 19.0), two-third was female, more than half (63%) obtained a middle level of education, and more than half (56%) had already experienced a medication switch before. The conversations patients had with the pharmacy team mostly (74%) took place at the pharmacy counter, lasted less than five minutes (61%), and the switch was often due to healthcare insurance policies or agreements (55%).

In total, 13 pharmacy team members took part in an interview, and data saturation was obtained as similar themes emerged throughout the interviews. The majority of the interviewees were female (n = 10, 77%) and (advanced) pharmacy technicians (n = 9, 69%).

Level 3 KirkPatrick model—behavior

Learning outcome: application of strategies in practice

Chosen strategy Pharmacy staff self-reported that they applied (aspects of) the breaking bad news model (30% of the conversations, 20/67), positive message framing (18%, 12/67), or both (22%, 15/67). In about two-thirds (65%, 43/66) of the registered conversations, the pharmacy team members indicated they delivered the message at the beginning of the conversation, showing they applied aspects of the breaking the bad news model. During these conversations almost all pharmacy team members (94%, 62/66) (completely) agreed that they clearly indicated why the patient had to switch. Some key communication elements that the pharmacy team members indicated in their open answers was delivering the message in a factual, short, and clear manner. Moreover, in almost three-quarters (74%, 48/65) of the registered conversations, the pharmacy team members (completely) agreed that they stated what the similarities were between the old and new medication.

With regard to responding to patient responses, in the majority of conversations pharmacy team members (completely) agreed that they showed understanding for the worries or other feelings that the patient expressed (76%, 50/66) and gave patients space to express their concerns (86%, 57/66). The other pharmacy team members responded to the question about showing understanding for the patient's worries or other feelings in the following ways: some stated that it was not applicable in their case, some could not recall if they did, and others were neutral about the matter. In about three-quarters (74%, 49/66) of the conversations, pharmacy team members (completely) agreed that they were

aware of their body language and non-verbal cues during the conversation.

These reflections were also highlighted in the interviews, as pharmacy team members described that they were more aware of the patient's emotions during the conversation. For example, they indicated that they listened more to the patient instead of immediately reacting and allowed more silent moments.

Difference per patient/situation Applying aspects of the strategy chosen, if applicable, was often more an intuitive choice or based on the situation whereby one strategy was assumed to be more applicable than the other, or neither. The majority of the interviewees indicated that they did not differentiate between patient groups in choosing a specific strategy. Nevertheless, in difficult conversations about non-medical medication switches, as opposed to easy conversations where the patient easily accepts the switch, pharmacy team members indicated that they more often applied (aspects of) a taught strategy, especially the breaking the bad news model.

Learning outcome: barriers/facilitators to applying the strategies (using COM-B theoretical model)

From the interviews, 16 barriers and facilitators (Table 3) for applying the taught strategies were derived.

Capability

Applying strategies is not (yet) a routine process Pharmacy team members indicated that applying (aspects of) the strategies was at times still difficult as it was not yet a habit and more practice was needed to make this more automated.

“... Because it does not happen very often, yes, it is still a little less in your system. It is not in my head because I do too little of [these conversations], so it is not completely automatic then” (female pharmacist).

Barriers in applying the strategies include interference of one's own emotion or a lack of energy to conduct a medication switch conversation.

“I do not know what it is, but when people get irritated, I find myself getting irritated too. I would like to learn the secret of getting rid of that. I have to be careful not to overreact to that” (female pharmacy technician).

Also, cooperation of the patient is deemed essential to be able to apply the strategies, i.e., patient is not hurried and is open to have a conversation.

Table 3 Barriers and facilitators applying the strategies

COM-B	Barrier/facilitator
Capability	No habit/ routine process, more practice needed (barrier) Own emotion, e.g., irritation or lack of energy (barrier) Difficulty conducting non-medical medication switch conversation (barrier) Consciously apply strategy successfully (facilitator)
Opportunity	Conversations via telephone (barrier) Physical space not readily available/easily accessible (barrier) Limited time (barrier) Support from colleagues (facilitator) Time, appropriate communication channel, and space for conversation (facilitator) Set agreements within the pharmacy (facilitator)
Motivation	Resistance or negativity expressed by patient (barrier) Having to explain the policies put in place by others (barrier) Job satisfaction (facilitator) Successful medication switch (facilitator) Contact with the patient (facilitator) Appreciation/satisfaction expressed by the patient (facilitator)

“... if [the] patient is not open to [the conversation] ... then it also stops, of course” (male pharmacist).

Consciously apply a strategy successfully Being able to consciously apply (aspects of) a strategy successfully was indicated as a facilitator. By doing so, pharmacy team members indicated that they felt more confident, for example being able to recognize which emotional state the patient is in and how to act accordingly.

“You also feel more confident, like I know what to say and how to recognize those emotions” (male pharmacy technician).

Another example includes being able to add a positive aspect to the conversation, such as being able to deliver a medication that is available and that has the same effect as the patient is used to.

“[That I] can add something positive, for example that another medication is available, so that [the patient] can get something and that it also has the same effect as they are used to” (female pharmacy technician).

Opportunity

Necessary conditions in place to apply the strategies in practice: A key condition to being able to successfully conduct a difficult conversation, as described by the interviewees, is when the pharmacy team member was able to have the conversation face-to-face and/or in a consultation room in the pharmacy, compared to telephone conversations.

“I must say the conversations in the consultation room or just face-to-face are easier conversations than those telephone conversations ... That is my experience, because over the telephone it is really just more difficult to end that conversation in a positive way” (male pharmacist).

Also, the majority of the interviewees indicated how easily they can apply (aspects of) the strategies in practice is dependent on time, workload and team occupancy.

“Especially time. It is really the biggest thing you run into..., in any case my biggest problem” (female pharmacy technician).

Support and set agreements within the team were perceived as important aspects to be able to apply the strategies.

“We also have a calendar where we stick the barcode for every conversation, we have about this [a medication switch]” (female pharmacy technician).

For example, being able to consult with another colleague who also took part in the training, to share successes and queries.

“If I had a difficult conversation...yes, you want to share that with colleagues. I could do that with those two pharmacy technicians, but not with the team because they did not know what we heard during the training. So, I think how broadly informed the team is, that that is a driving factor” (male pharmacist).

Motivation

Appreciation/satisfaction expressed by the patient: For most pharmacy team members, satisfied patients included those that felt heard, that their wishes had been met, those who responded better to the switch, and those that showed understanding for the situation. This is a key motivator to apply the strategies.

“If you start a conversation and the patient leaves satisfied, that is the most important thing for me. That the patient understands what they have to take instead that the patient received something completely new and they do not dare to use it” (male pharmacy technician).

Resistance or negativity expressed by patient: As described by some pharmacy team members, if the patient does not want to engage in a medication switch conversation this was perceived as a barrier. This included that the patient, for example, walked away due to heightened emotion.

“Well, it requires two sides of course, I have also had a conversation with a patient that just walked away.” (male pharmacist).

Other examples included that patients would blame pharmacy team members for the switch, and that the pharmacy team members would then have to explain the policies put in place by others to patients.

“People who have had medical necessity [for a medication] in the past, for example, they put the blame on us... Then you feel guilty while it is not your fault” (female pharmacy technician).

Level 4 KirkPatrick model—results

Learning outcome: pharmacy team member satisfaction with the conversation

For the majority of the registered conversations, the pharmacy team members (completely) agreed that they were satisfied with how the conversation went (89%) and with how they could deal with patient’s emotions (74%).

They also perceived patients to be (very) positive with the conversations (62%). The provided explanations for when they experienced a conversation as positive included, satisfied patients (e.g., when patients accepted the new medication), when they had the feeling that they could bring the message in a pleasant way, or being able to create more

space for the patient’s reaction in the conversation. In about half (55%) of the registered conversations, pharmacy team members (completely) agreed that they were able to think along about solutions.

Learning outcome: pharmacy team member job satisfaction

Interviewees shared self-reported experiences of increased job satisfaction. For example, when the message about a medication switch was successfully delivered in a positive manner.

“If you deliver the message and it comes across well, using the tools you have, that it then becomes easier and the conversation is automatically more fun” (female advanced pharmacy technician).

Aspects that did not stimulate job satisfaction were resistance or negativity expressed by patient.

“... if [the] patient does not want to talk then it stops” (male pharmacist).

Learning outcome: pharmacy team member-patient relationship

Interviewees also expressed self-reported experiences of improved contact/relationship between the pharmacy team member and patient.

“I think you have a better relationship between you and the patient, you get more person-centered care because you explain - what does this mean for you, the patient, ... you dive into the conversation much deeper” (female advanced pharmacy technician).

Many team members indicated that they took more time for the patient post-training, and they dived deeper into the conversation with the patient. Also, pharmacy team members indicated that they more often investigated why a patient did not want to switch if this was the case.

Learning outcome: Patient satisfaction with the conversation

More than three-quarters of the patients who completed the questionnaire (78%, n = 27) indicated that they were (very) positive, 19% was neutral, and 4% was (very) negative about the communication during the medication switch conversation. High scoring aspects were how much time the pharmacy team had for them (93% satisfied) and how seriously the pharmacy team took them (89%), Fig. 1. Patients were

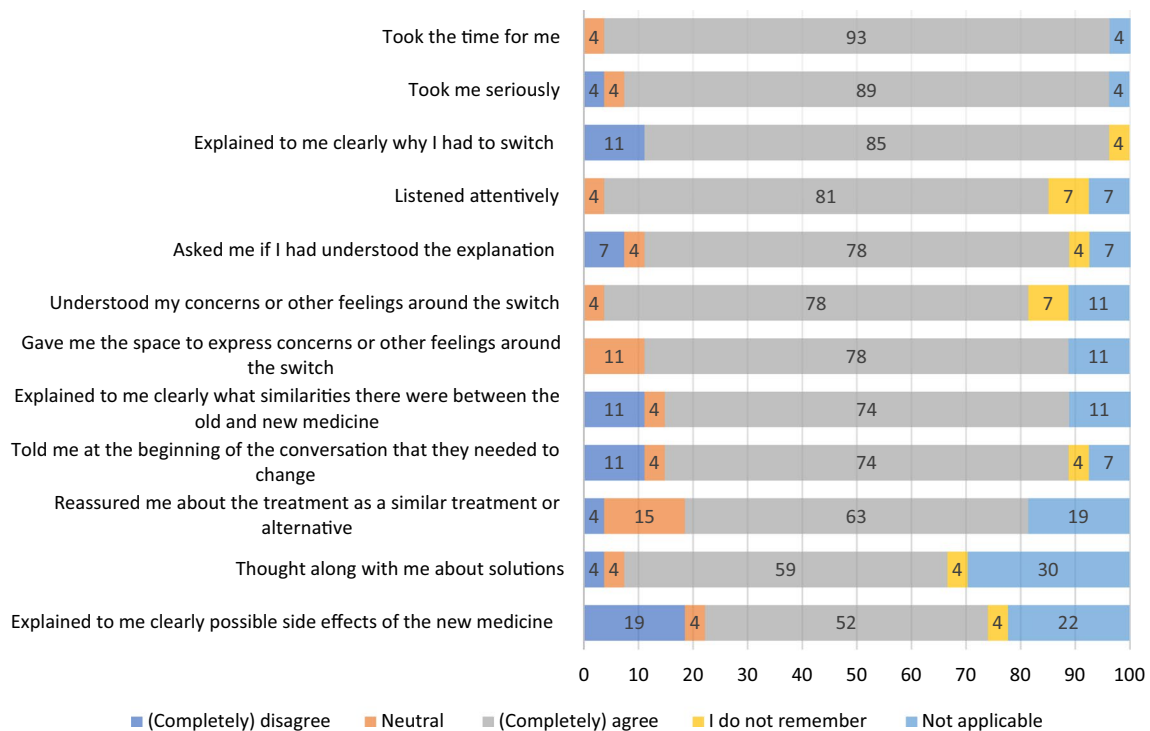


Fig. 1 Patient satisfaction with the conversation (N=27), % response

also satisfied about how the pharmacy team listened carefully (81%), showed understanding for the patient's concerns, and giving patients the space (78%), Fig. 1. The lowest score was given for how reassured the patients felt about the treatment as a similar treatment or alternative (63% satisfied), Fig. 1.

Communication aspects such as a clear explanation about why the switch took place (85%, Fig. 1), and an explanation about the similarities between the old and new medication (74%, Fig. 1) were aspects that patients were (very) satisfied about. Moreover, about three-quarters (74%, Fig. 1) of patients were content about the fact that they had been told right at the beginning of the conversation about the switch. Patients were also positive (78%, Fig. 1) about being asked by the pharmacy team member whether they understood the explanation about the medication switch. Fewer patients (59%, Fig. 1) were satisfied about how the pharmacy team members thought along with solutions, and about the explanation about potential adverse effects of the new medication (52%, Fig. 1).

Discussion

In this study, pharmacy team members' experiences with non-medical medication switch conversations when applying trained/taught communication strategies were assessed, as well as patients' experiences with these conversations.

According to self-reported data, pharmacy team members indicated they were able to apply different aspects of the learned communication strategies, 'positive message framing' and the 'breaking bad news model' in practice, but also made clear that applying these strategy aspects is not yet routinized in conducted conversations. The training made pharmacy team members feel that they were better able to deal with patient's emotions (Kirkpatrick level 3). Pharmacy team members noticed first signs of improved relationships with patients and increased job satisfaction (Kirkpatrick model level 4). They were also satisfied with how the conversation went and how well they could deal with patient's emotions (Kirkpatrick model level 4). Patients—although a small sample—were satisfied with the communication during non-medical medication switch conversations (Kirkpatrick model level 4).

A central element in this communication training was strengthening skills to deal with emotions of patients during difficult conversations about non-medical medication switches. The aspects that pharmacy team members paid most attention to, e.g., room for emotion, and providing information about the similarities between the new and old medication, were also the aspects patients were most satisfied about. The aspects of the communication strategies applied are mainly general communication skills. This confirms the need for attention on basic communication skills in education, as described in our previous study [22]. Without

a good foundation of the basic communication skills, diving deeper into the communication strategies is also difficult.

In addition, while addressing the patient's emotions, thoughts, and feelings is important, shared decision-making is a crucial element that should not be overlooked. It involves actively involving patients in the decision-making process about their healthcare, providing them with information on the benefits, risks, and alternatives of medication switches. This empowers patients to make informed choices aligned with their preferences and values. Additionally, it may be valuable to consider incorporating psychological theories such as locus of control theory into communication training for healthcare professionals. Locus of control refers to an individual's belief about the extent to which they have control over their own lives and the outcomes they experience [28]. By understanding a patient's locus of control, healthcare providers can tailor their communication style and approach to match the patient's psychological needs and preferences. Incorporating psychological theories like locus of control can further enhance patient engagement and satisfaction by tailoring communication to match their needs.

Patient-pharmacy staff contact

It is important to highlight that there are also first signs of increased patient-pharmacy team member relationship. As made evident in previous research, addressing patients' emotions is targeted at establishing a good health care provider–patient relationship, which can improve outcomes such as patient satisfaction and adherence [29, 30]. As shown in our study, in the situations where aspects of the strategies were consciously applied, pharmacy team members noticed that they took more time for the patient and dived deeper into the conversation. Patients felt understood and heard, which are important aspects in improving the therapeutic relationship between pharmacy team member and patient. Specifically, in the case of non-medical medication switches, this can result in more patient trust in the medication [31, 32], and better acceptance of the medication switch/use of the medication [21] ultimately improving patient treatment adherence.

Applying aspects of the strategies during these non-medical medication switch conversations also show first signs of positive effects on pharmacy team member's job satisfaction. These results are promising in an effort to facilitate these types of conversations. Pharmacy team members indicated in the interviews that these types of conversations become easier to conduct. In return, this may give the pharmacy team member more self-efficacy, and may prevent potential burnout due to the burden of these conversations [5, 33].

Strengths and weaknesses of the study

Investigating both pharmacy team member's and patient's experiences is a strength, as this gives a reflection of the pharmacy team member's behavior from both perspectives. Another strength is the combination of both quantitative and qualitative methods allowing for in-depth insights into the pharmacy team member experiences with medication switch conversations post-training.

A first limitation of the study is that the behaviors and results (level 3 and 4 of the Kirkpatrick model) of the training are not generalizable given the small sample size. Particularly, the patient perspective has not been studied very in-depth given the small sample of 31 patients. Moreover, we cannot prove an effect of the training, as there are no pre-intervention data measurements. Although self-reported changes are not always reliable, this type of data can still provide insight into the experiences: pharmacy team members can say for themselves whether they notice any change. By allowing individuals to express their observations and perceptions firsthand, this type of data captures subjective and personal perspectives on whether any changes are noticeable. While it may not be as objective as quantifiable metrics, self-reported data provides a qualitative understanding of the impact of certain interventions or practices within the pharmacy setting, giving a glimpse into the practical effects that might otherwise be overlooked.

A second limitation is potential selection bias. As described in the introduction, there are various effects of medication switching, and sometimes patients also feel indifferent or positive about the switch. Patients are asked whether they have experienced a medication switch in the previous year; however, the degree to which the patient accepts the medication switch is not considered. Patients who have no problem with the switch may already be positive about the conversation. This lack of attention may introduce a selection bias that could impact the study findings.

Another limitation related to selection bias is that pharmacy team members and patients could volunteer to partake in the interview or completing the questionnaire. Potentially the more motivated, positive pharmacy team members and patients who participated in the interviews or completed the questionnaires. In addition, it could be that pharmacy team members gave questionnaires to patients who experienced a positive conversation.

Implications for practice

Incorporating aspects of the communication strategies that facilitate the conversation and increase patient/pharmacy team member satisfaction in non-medical medication switch encounters is important. This includes delivering the news directly, giving room for emotions, and clear explanation

about similarities/that the medication has the same substance. It is important to spread this know-how about how to incorporate these basic communication skills to pharmacy teams via education, for example through the means of following the developed communication training about non-medication switches [22].

Further research

The effects of applying aspects of these strategies on patient level should be explored on a larger scale. This includes whether patient's views on the medication improve, and whether they use the medication better as a result.

Furthermore, observations or conversation recordings of the strategies in non-medical medical switch conversations can be made in future research, as well as being used as a training tool for pharmacy team members. By supplementing self-reported data with objective observations or conversation recordings of the strategies used in non-medical medical switch conversations, we can triangulate the information and obtain a more comprehensive and accurate understanding of the actual communication dynamics and outcomes. In addition, as shown in previous research, video-feedback is an effective method to improve healthcare professional's basic communication skills [34].

Moreover, to maintain the acquired skills, it is important that pharmacy team members continue to practice their acquired skills, as they also indicated themselves. This can be done in the form of a refresher training, where theory and practicing of their learned skills is refreshed [35], e.g., in a work-meeting with colleagues in pharmacy practice.

Conclusion

According to self-reported data, pharmacy team members were able to apply different aspects of the learned communication strategies, 'positive message framing' and the 'breaking bad news model' medication switch conversations, but this was not yet standard practice. First signs of better patient-pharmacy staff relationships and increased job satisfaction were noticed. The training made pharmacy team members feel that they were better able to deal with patient's emotions. First insights of patient experiences with communication during medical switch conversations indicate that they were positive. This study shows promising signs that the communication training may be useful in learning how to deal with patient emotions in pharmacy practice.

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References

1. Dolinar R, Kohn CG, Lavernia F, et al. The non-medical switching of prescription medications. *Postgrad Med J*. 2019;131:335–41.
2. Postma DJ, De Smet PAGM, Gispens-de Wied CC, et al. Drug shortages from the perspectives of authorities and pharmacy practice in the Netherlands: an observational study. *Front Pharmacol*. 2018;9:1243.
3. Wisselen van Medicijnen. <https://www.harteraad.nl/wp-content/uploads/2018/04/Rapport-Wisselen-van-medicijnen-april-2018-1.pdf>. Accessed 02 Jan 2023.
4. Teeple A, Ginsburg S, Howard L, et al. Patient attitudes about non-medical switching to biosimilars: results from an online patient survey in the United States. *Curr Med Res Opin*. 2019;35:603–9.
5. Schackmann L, Vervloet M, van Dijk L, et al. Communication during encounters about medication switching: self-reported experiences of pharmacy technicians and patients. *Explor Res Clin Soc Pharm*. 2023;9:100259.
6. Policy Finder | AMA. <https://policysearch.ama-assn.org/policyfinder/detail/Drug%20Formularies%20and%20Therapeutic%20Interchange%20H-125.991?uri=%2FAMADoc%2FHOD.xml-0-227.xml>. Accessed 01 Feb 2023.
7. Prior Authorization and Utilization Management Reform Principles. <https://www.ama-assn.org/system/files/principles-with-signatory-page-for-slsc.pdf>. Accessed 01 Feb 2023.
8. Kristensen LE, Alten R, Puig L, et al. Non-pharmacological effects in switching medication: the placebo effect in switching from originator to biosimilar agent. *BioDrugs*. 2018;32:397–404.
9. Flinterman LE, Kuiper JG, Korevaar JC, et al. Impact of a forced dose-equivalent levothyroxine brand switch on plasma thyrotropin: a cohort study. *Thyroid*. 2020;30:821–8.
10. KNMP–Farmanco. 10.15.8.88. <https://farmanco.knmp.nl/tekorten-in-cijfers>. Accessed 02 Jan 2023.
11. Zwikker H, Weesie Y, Vervloet M, et al. Gevolgen van preferentiebeleid en farmaceutische zorginkoop: ervaringen van gebruikers van hart-en vaatmedicatie. Jacksonville: NIVEL; 2016. 978-94-6122-395-1.
12. Lehmann V, Labrie NHM, van Weert JCM, et al. Tailoring the amount of treatment information to cancer patients' and survivors' preferences: Effects on patient-reported outcomes. *Patient Educ*. 2020;103:514–20.
13. Sep MSC, van Osch M, van Vliet LM, et al. The power of clinicians' affective communication: How reassurance about non-abandonment can reduce patients' physiological arousal and increase information recall in bad news consultations. an experimental study using analogue patients. *Patient Educ*. 2014;95:45–52.
14. Yarıbeygi H, Sahraei H. Physiological/neurophysiological mechanisms involved in the formation of stress responses. *Neurophysiology*. 2018;50:131–9.

15. Linn AJ, van Weert JC, Schouten BC, et al. Words that make pills easier to swallow: a communication typology to address practical and perceptual barriers to medication intake behavior. *Patient Prefer Adherence*. 2012;6:871–85.
16. Chapman SCE, Horne R. Medication nonadherence and psychiatry. *Curr Opin Psychiatry*. 2013;26:446–52.
17. Ruksakulpiwat S, Liu Z, Yue S, et al. The association among medication beliefs, perception of illness and medication adherence in ischemic stroke patients: a cross-sectional study in China. *Patient Prefer Adherence*. 2020;14:235–47.
18. van der Molen HT, Kluytmans F, Kramer M. Gespreksvoering vaardigheden en modellen. Heerlen: Open Universiteit Heerlen; 1995. 9789001751364.
19. Rosenzweig MQ. Breaking bad news. *J Nurse Pract*. 2017;37(2):1–4.
20. Gasteiger C, Jones ASK, Kleinstäuber M, et al. Effects of message framing on patients' perceptions and willingness to change to a biosimilar in a hypothetical drug switch. *Arthritis Care Res*. 2020;72:1323–30.
21. Wilhelm M, Rief W, Doering BK. Decreasing the burden of side effects through positive message framing: an experimental proof-of-concept study. *Int J Behav Med*. 2018;25(4):381–9.
22. Schackmann L, Heringa M, Wolters M, et al. Facilitating pharmacy staff's conversations about non-medical medication switches: development and testing of a communication training. *Res Social Adm Pharm*. 2023;19(5):738–45.
23. Fleischer S, Berg A, Zimmermann M, et al. Nurse-patient interaction and communication: a systematic literature review. *J Public Health*. 2009;17:339–53.
24. Higgs J. *Communicating in the health sciences*. Oxford, USA: Oxford University Press, 2nd Edition; 2008. 0195551400, 9780195551402.
25. Kirkpatrick JD, Kirkpatrick WK. *Kirkpatrick's Four levels of training evaluation*. Alexandria: Alexandria Atd Press; 2016. 1607280086.
26. Statistiek CB voor de. Opleidingsniveau. Centraal Bureau voor de Statistiek. <https://www.cbs.nl/nl-nl/nieuws/2019/33/verschillenverwachting-hoog-en-laagopgeleid-groeit/opleidingsniveau>. Accessed 01 Feb 2023.
27. Michie S, van Stralen MM, West R. The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implement Sci*. 2011;6(42):1–12.
28. Xu J. The impact of locus of control and controlling language on psychological reactance and ad effectiveness in health communication. *Health Commun*. 2017;32:1463–71.
29. Haskard Zolnerek KB, DiMatteo MR. Physician communication and patient adherence to treatment: a meta-analysis. *Med Care*. 2009;47:826–34.
30. Haskard KB, DiMatteo MR, Heritage J. Affective and instrumental communication in primary care interactions: predicting the satisfaction of nursing staff and patients. *Health Commun*. 2009;24:21–32.
31. Golin CE, DiMatteo M, Leaks B, et al. A diabetes-specific measure of patient desire to participate in medical decision making. *Diabetes Educ*. 2001;27:875–86.
32. Barsky AJ. Nonspecific medication side effects and the nocebo phenomenon. *JAMA*. 2002;287:622.
33. Suchman AL, Roter D, Green M, et al. Physician Satisfaction with primary care office visits. *Med Care*. 1993;31:1083–92.
34. Noordman J, van der Weijden T, van Dulmen S. Effects of video-feedback on the communication, clinical competence and motivational interviewing skills of practice nurses: a pre-test posttest control group study. *J Adv Nurs*. 2014;70:2272–83.
35. Noordman J, Roodbeen R, Gach L, et al. A basic understanding; evaluation of a blended training programme for healthcare providers in hospital-based palliative care to improve communication with patients with limited health literacy. *BMC Med Educ*. 2022;22(1):1–12.

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