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Development and testing of a framework for defining a strategy to address medication adherence during patient encounters in community pharmacies



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ABSTRACT

Background: Counseling patients on medication adherence could be ameliorated in pharmacy practice. There is a lack of simple and practical strategies to address medication adherence with patients in daily practice. The goal was to develop and test a framework that allows pharmacy teams to define and apply a strategy to address medication adherence in community pharmacies.

Methods: A framework based on the principles of social marketing was developed. It consisted of 3 items: the target patient ("Who"), the target plan ("How"), and the target goal ("How many"). To test the framework, each participating pharmacy team developed their strategy by defining the 3 items and applied them during one pilot day. A master student observed the encounters between patients and pharmacy team members and used a structured checklist to document the patient's characteristics, counseling content, and strategy use. Pharmacy teams answered a feedback questionnaire at the end of the pilot day.

Results: Ten pharmacy teams were included. During a brainstorming session that lasted on average 31 ± 8 min, unique strategies comprised 18 different target patients and 20 different target plans. The planned target goal was a mean of 31 patients (range: 1 to "all"). A total of 325 encounters were observed, of which 208 patients (64%) corresponded to the predefined target patients. Medication adherence was addressed with 73 patients (22.5%), and adherence counseling was performed with 50 patients (15%). The pharmacy teams accepted the framework and judged it feasible and adaptable to their needs.

Conclusion: The proposed framework represents a simple tool that enables pharmacy teams to develop a strategy for addressing medication adherence in community pharmacies. Its adoption by pharmacy teams occurred without additional training and its integration into daily practice without difficulties. A further study is now needed to investigate if pharmacy teams can successfully engage patients in discussion on medication adherence and ultimately propose targeted adherence interventions.

1. Introduction

Pharmaceutical care is recognized as "the pharmacist's contribution to the care of individuals to optimize medicines use and improve health outcomes"¹ and has shifted the pharmacist's role toward more patient-centered activities. Mostly, the community pharmacist plays a pivotal part in promoting purposeful intake behavior: patients' adherence to prescribed treatments.² Medication nonadherence can have far-reaching clinical consequences for the patient,^{3,4} and generates high costs for the healthcare system.^{5,6} Nonadherence is ubiquitous across all diseases, indications, and patient groups.⁷ Pharmacists are well-positioned to address nonadherence as they are trained to identify and resolve drug-related problems, including medication management and intake difficulties.⁸ In addition, pharmacists are confident in their ability to address nonadherence and prepared to tackle this problem.⁹ However, a discrepancy exists between attitudes and actions.

An observational study in community pharmacies revealed that about 54% of patients received counseling, but only 7% were about medication adherence.¹⁰ The identification of nonadherence in current practice relies mostly on the analysis of refilled prescriptions with pharmacy software and is performed without the patient's involvement.¹¹ Efforts have been made to facilitate the detection and monitoring of potentially nonadherent patients by improving pharmacy management systems,¹² up to suggesting specific interventions to improve medication adherence.¹³ There are few theoretical frameworks for adherence strategies.^{14,15} However, in daily routine, pharmacists often decide ad hoc to ask a patient about their medication adherence rather than following a systematic approach.^{16,17} Addressing medication adherence in pharmacy practice remains a challenge for the pharmacy teams.¹⁶ The goal of this study was to develop and test a framework that allows pharmacy teams to define and apply a strategy to address medication adherence in community pharmacies.

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2. Methods

2.1. Development of the framework

The framework was rooted in the principles of social marketing theory that applies techniques from commercial marketing to public health.¹⁸ The social marketing theory has established the STP approach (Segmentation, Targeting, Positioning)¹⁹ from successful commercial marketers who changed customers' behavior. The goal-setting theory²⁰ and the SMART criteria (Specific, Measurable, Attainable, Relevant, Time-bound)²¹ were also considered to define the 3 items of the framework. The first item, "target patient," divides potential nonadherent patients into subgroups according to common characteristics (Segmentation from the STP-approach) and determines which subgroup represents the best fit for targeting patients in the pharmacy (Targeting from the STP-approach). The second item "target plan" enables to present the medication adherence counseling (i.e., the offer) in a way that fits to the target group (Positioning from the STP-approach). The third item "target number" allows the pharmacy team to set a goal for addressing patients that is specific, measurable, attainable, relevant, and time-bound (SMART criteria, [Table 1](#)).

2.2. Testing of the framework

To test the framework, an experimental study was conducted in community pharmacies in the German-speaking part of Switzerland between February and April 2019. A purposive convenience sample of community pharmacies was selected that were already experienced in participating in research studies.²² The pharmacies were visited twice. All observed pharmacy team members agreed to participate.

At the first visit, a moderator (PB or NC) conducted a face-to-face brainstorming session with at least one pharmacist and one pharmacy technician in each pharmacy. This group creativity technique is generally used to develop new ideas and promote problem-solving.²³ First, the moderator explained the objective of the brainstorming, i.e., using the framework to determine a tailored strategy for approaching patients in the pharmacy and talking to them about their medication adherence. Then, the moderator harvested the current habits, i.e., which patients are currently approached ("Who") and how they are approached ("How") by the participants. Second, the pharmacy team proposed targets for the patients ("Who") and the plan ("How") according to the pharmacy's characteristics on the patient, provider, and system level. Finally, the participants defined one strategy by selecting one or several plausible target patients and target plans from the proposals listed beforehand. Lastly, participants defined the target number of patients that should be addressed ("How many") during one observation day. The discussion was closed when a consensus was reached among the participants. Then, the date of the second visit was defined, which had to take place during the following 4 weeks. Brainstorming sessions were audio recorded on an APPLE iPad, and sessions' outputs were noted on a whiteboard for archiving purposes. A transcription was not performed.

At the second visit, the pharmacy teams used their predefined strategy during one working day (so-called "pilot day"). One researcher (NC) visited all pharmacies. At the beginning of the pilot day, the pharmacy team was shortly briefed because some team members did not participate in the brainstorming sessions. The predefined strategy was repeated, and the documenting procedure with the checklist (see [Appendix A](#)) was explained. NC documented all sequential encounters between a pharmacy team member and a patient as a silent observer with the checklist. An encounter was

defined as starting with the greeting and ending with the farewell of a patient. Mentioning the silent observer was permitted when the pharmacy staff obtained verbal consent from patients, including that NC listened to and documented their discussions. No patient data were collected, except for gender and age that were estimated by physical appearance. The characteristics of the participating pharmacy team members (age, gender, function, working experience) were registered with a short questionnaire at the beginning of the pilot day, and written consent of the pharmacy teams members was obtained. For this study, no ethics committee approval was needed according to local guidelines.

2.3. Checklist to document encounters

The checklist to document encounters was adapted from a former checklist that had been developed for the manual coding of pharmacy encounters with a focus on medication adherence counseling ([Appendix A](#)).¹⁰ This checklist includes 68 predefined topics in nine categories: patients characteristics, details about the medication, type of encounter, counseling topics, situation, resulting activities, follow-up, strategies for addressing medication adherence, and topics of medication adherence counseling. Three tick boxes were added that focus on the 3-item strategy: if the patient corresponded to the target patient if the patient was approached verbally about medication adherence with/without the target plan, and if the patient was counseled about medication adherence.

2.4. Training of the researchers

The study was conducted by a Ph.D. student (PB) and a Master's student (NC) in pharmacy who had working experience in a community pharmacy for 3 and 1 years, respectively. The two researchers were trained in moderator skills by pilot-testing one brainstorming session with two pharmacists from the research group. Additionally, they were trained in coding pharmacy encounters in a community pharmacy not included in the study. During 4 consecutive hours, they pilot-tested the checklist in daily practice by coding independently the same patient encounters and compared their results. Discordant coding was solved by discussion; no major discrepancies or irregularities were found between the two coders, and no adaptation of the checklist was needed.

2.5. Immediate team feedback

A short survey on the framework was developed that used questions from a previous interview guide¹⁰ and questionnaire.²⁵ It explored its usefulness and appropriateness (5 items), the impact on the patient (2 items), and the goal-setting (2 items). Answers were given using a four-point Likert scale²⁶ from 1 (disagree) to 4 (agree). Each pharmacy team member filled in the survey at the end of the pilot day.

2.6. Data analysis

Two researchers (PB and NC) summarized the harvested items of the brainstorming sessions and categorized target patients ("Who") and target plans ("How") inductively according to the trigger that was induced. The consensus was reached verbally. Medication adherence counseling was addressed when at least one of the eight topics of medication adherence counseling proposed by Boeni et al. was explicitly counseled: positive reinforcement, organization, therapy/ disease understanding, motivation, appointment keeping, skills, barriers, the meaning of nonadherence.¹⁰ Data

Table 1

Framework with 3 items defining a strategy that enables addressing medication adherence during patient encounters in community pharmacies.

Item	Definition of the item for the strategy	Question	Question word
1	Target patients	Which patients do you want to approach?	Who?
2	Target plan	How do you want to approach the target patients?	How?
3	Target number	How many target patients do you want to approach?	How many?

from the checklists and surveys were entered in and analyzed using the Statistical Package for the Social Sciences (SPSS; Version 25.0 IBM Corporation, Armonk, NY, USA), Microsoft Excel (Microsoft Office Home and Student 2016, Microsoft Corporation, Redmond WA, USA), or Tableau Desktop Professional Edition Version (2019.3.0, Tableau Software, Seattle, WA, USA). Data from the checklists and answers from the survey were calculated and given as means with standard deviation (SD) or percentages, where appropriate.

3. Results

3.1. Defining the strategy

A total of 34 individuals (mean: 3.4 participants per pharmacy; range: 2 to 7) attended the brainstorming sessions in the 10 included pharmacies (Appendix B). The discussion lasted on average 31 ± 8 min. During the brainstorming sessions, the pharmacy teams named a total of 81 potential target patients, of which on average 1.8 (range: 1–4) were selected for the strategy. The target patients were classified into the three categories: “request,” “medication,” and “traits.” The category “request” encompassed patients with a permanent prescription, a first prescription, a refill, or an OTC purchase. Patients in the category “medication” would need medicines with a presumed high probability of nonadherence and were defined as, for example: “Patient with antihypertensive medicines”; or “Patients with sensitive medicines such as antibiotics, narcotics, benzodiazepines.” Patients’ “traits” are characteristics concerning demographics (e.g., age, gender, etc.), behavior (e.g., patients refills too late), psychography (e.g., lifestyle, social, or personality), or whether they have been discharged from a hospital. The pharmacy teams selected in total 18 plausible target patients who belonged most often to the category “medication” ($n = 7$) or “request” ($n = 6$). Two pharmacies selected “all patients” without further specifications.

The pharmacy teams mentioned 60 different approach techniques for addressing medication adherence. Twenty were selected as plausible target plans (mean: 2 target plans per pharmacy; range: 1–4). Two types of techniques were observed: first, an information-centered approach using a leaflet that addressed medication adherence ($n = 2$) or promoted a campaign about medication adherence ($n = 1$); and second, a patient-centered approach that defined the communication style with the patient (e.g., using open-ended questions; $n = 6$) or used prime questions ($n = 11$). The prime questions can be further divided into three subcategories: questioning the patient about their therapy regime (e.g., “How often do you take the medication?”; $n = 7$); inquiring about the patient’s experience with their therapy (e.g., “Are you satisfied with your medication?”; $n = 3$), and confronting the patient (e.g., “How often do you forget your medication?”; $n = 1$). Seven pharmacy teams selected the patient-centered approach, while two selected the information-centered approach. One pharmacy team combined both approaches in their target plan. The average target number of patients was 31 and ranged from 1 to 2 patients with a specific request (e.g., laxatives) to all patients with a refill prescription. Three teams intended to target 50 patients. See Appendix C for the selected target patients, target plans, and target numbers. See Appendix D for the categorization of the strategies.

3.2. Testing the strategy

Thirty-nine pharmacy team members performed 325 encounters during 72 h and 15 min. An average of 32.5 ± 7 encounters (range: 22–45) per pharmacy were documented during a mean of 7 h and 12 min (± 34 min). Consultation time lasted on average 7.3 ± 5.0 min. A total of 230 (70.8%) encounters concerned 153 refill prescriptions (47.1%) and 77 first prescriptions (23.7%). The remaining 95 (28.2%) encounters concerned OTC sales. Overall, 208 patients (64%) met the criteria of the preliminarily defined target patients. The pharmacy teams approached 73 patients (22.5%) to address their medication adherence (range: 2–14). All patients but one belonged to one of the predefined target patients. From the 18 predefined plausible target patient groups, seven were not used

during the pilot day, either because no patients corresponded to the target group (e.g., a patient with a benzodiazepine; $n = 3$) or because the pharmacy team deliberately reduced the number of target patients at the beginning of the observation day from originally four to one. The predefined target plans were used with 46 (63.0%) of the 73 patients. The pharmacy teams addressed medication adherence on average 3.7 ± 3.3 min (range: 0–17 min) after the start of the conversation. On average, the pharmacy teams used one target plan (range: 0–2) and addressed medication adherence with 7.3 patients (range: 2–14) on average. One (10%) pharmacy reached its target number of seven patients. Of the 73 approached patients, 23 (31.5%) did not want to engage in counseling on medication adherence, resulting in 50 (15.4% of all patients) explicitly counseled patients (See Fig. 1).

3.3. Evaluating the framework

According to the pharmacy teams, most patients were willing to talk when medication adherence was addressed (94.9%; Fig. 2). The pharmacy teams judged the framework as useful for defining a strategy (3.59 on a 4-point Likert scale), and 33 (84.6%) of the team members agreed that their strategy could easily be integrated into the daily routine of their pharmacy. All pharmacy team members agreed that “Who” was mandatory for any strategy. Agreement was 92.1% for “How” and 67.6% for “How many.”

4. Discussion

The proposed framework is grounded in social-marketing theories that are widely used in developing health-education programs²⁷ and are thus of significant interest for pharmacy practice. It was developed as a simple method consisting of three items (Who, How, How many) for guiding community pharmacies in addressing medication adherence with patients. However, each user, that is, each pharmacy team, must define its items because each pharmacy has unique characteristics on the patient, provider, and system levels. Pharmacy teams judged the framework as useful and quickly adaptable. The 10 participating pharmacy teams developed unique strategies during a short brainstorming session, which resulted in counseling 50 (15%) patients on medication adherence during one working day. The use of the framework seems promising for increasing adherence counseling compared to a previous study with a similar methodology and setting that reported a rate of medication-adherence counseling of 6.7%.¹⁰

4.1. Target patient (“Who”)

In contrast to dedicated screening campaigns in community pharmacies, such as for undiagnosed patients with diabetes with elevated Hb1Ac,²⁸ there are no explicit markers of nonadherent patients.²⁹ In fact, pharmacy teams cannot solve all adherence issues, particularly when related to unmodifiable factors such as age or costs.³⁰ Similarly, obvious determinants of nonadherence such as “forgetfulness” are difficult to assess because a pharmacy encounter only provides limited information about patients and time with them.^{16,31} The challenge for pharmacy teams is defining target patients and recognizing them in the daily routine. In this study, the 81 named target patients for addressing medication adherence were categorized into request, medication, or trait. For example, a regular patient that occasionally forgets to take his medication enters the pharmacy with a repeat prescription for an ACE inhibitor. The medication (ACE inhibitor) and request (repeat prescription) can be identified at the beginning of the consultation, while the trait (forgetfulness) is either known from the pharmacist’s experience or discovered during the consultation (e.g., when checking the medication history). Much of the research on medication adherence focuses solely on patient-related factors such as knowledge, skills, and personality traits, which are supposed to cause or lead to poor medication adherence.^{32,33} In this study, the minority of pharmacy teams selected patient traits ($n = 2$). The majority focused on triggers from medication or request. This strategy proved to be judicious, as 208 (64%) of the 325 observed patients corresponded to a target patient. To conclude, defining a

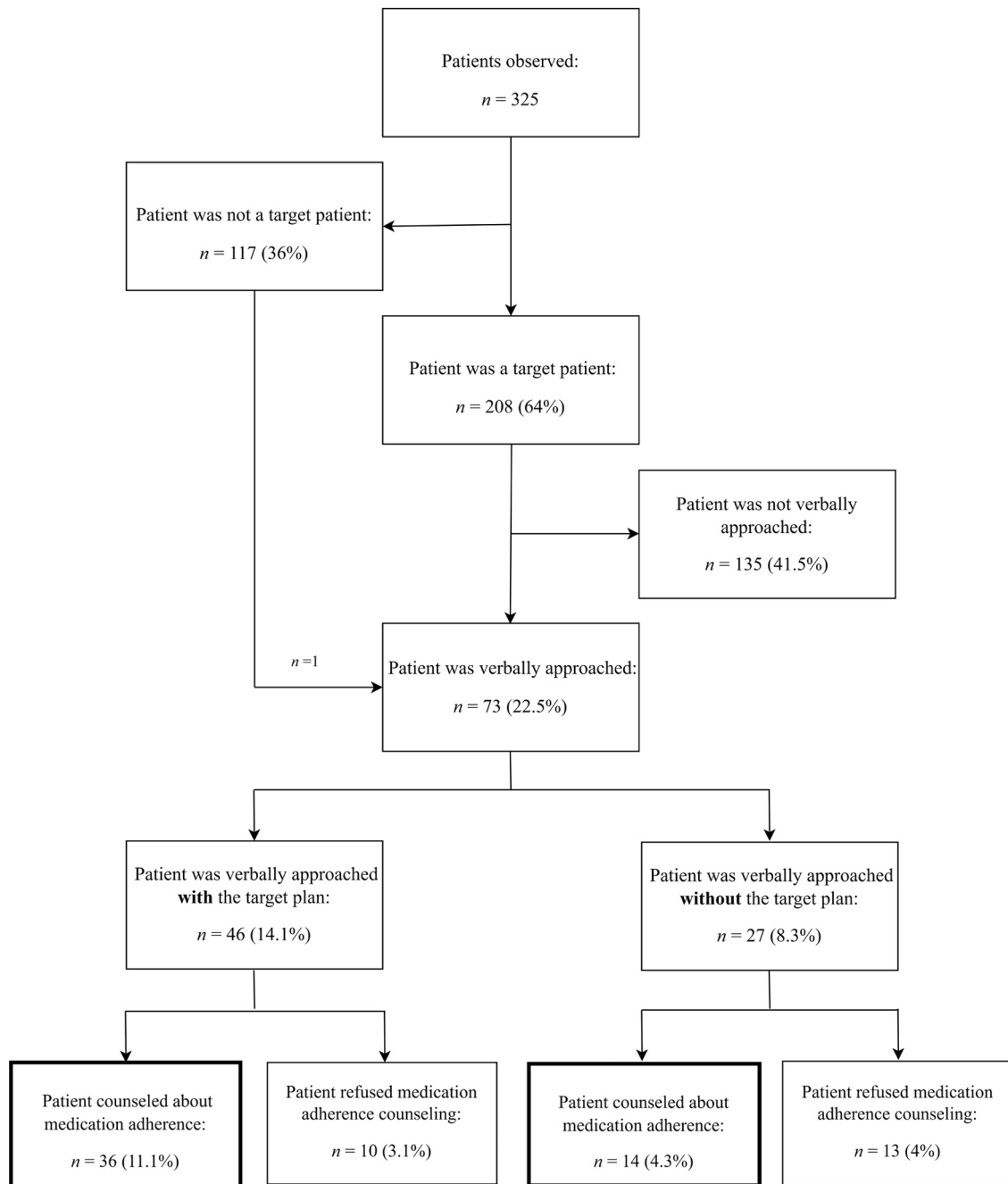


Fig. 1. Flow chart of the 325 encounters observed in 10 pharmacies.

realistic target patient during a short brainstorming session is a important first step for pharmacy teams who want to develop their own strategy before engaging patients in conversations about health behaviors.

4.2. Target plan (“How”)

The decision to address a patient may be influenced by the assessment method (e.g., having a negative attitude toward consultation),³⁴ the course of the conversation, and personal barriers (e.g., shyness, being unmotivated).^{35,36} Most notably, pharmacists still see patient rejection as the main hindrance to discussing medication adherence in practice.¹⁰¹⁰ In this study, the pharmacy teams selected either an information-centered or a patient-centered approach as their target plan. The three pharmacies that used an information-centered approach opted for educating patients

about medication adherence with a patient information leaflet or with an “action day of adherence.” Information campaigns have proven to be an effective opportunity for pharmacists to sensitize and screen patients.³⁷ Educational materials such as patient information leaflets have also been shown to encourage patients to engage in the care they receive.^{38,39} In this study, eight pharmacies embraced a patient-centered communication style by using either open-ended questions or prime questions. This approach makes patients more open to discussing their intake behavior and may include a shared definition of the problem and shared decision-making.⁴⁰ Patient-centered communication has also been shown to have a promising effect on detecting and addressing nonadherence.⁴¹ There is a favorable relationship between the use of open-ended questions and the amount of information given by patients.⁴² Prime questions have also demonstrated their usefulness in better structuring patient conversations. For

5

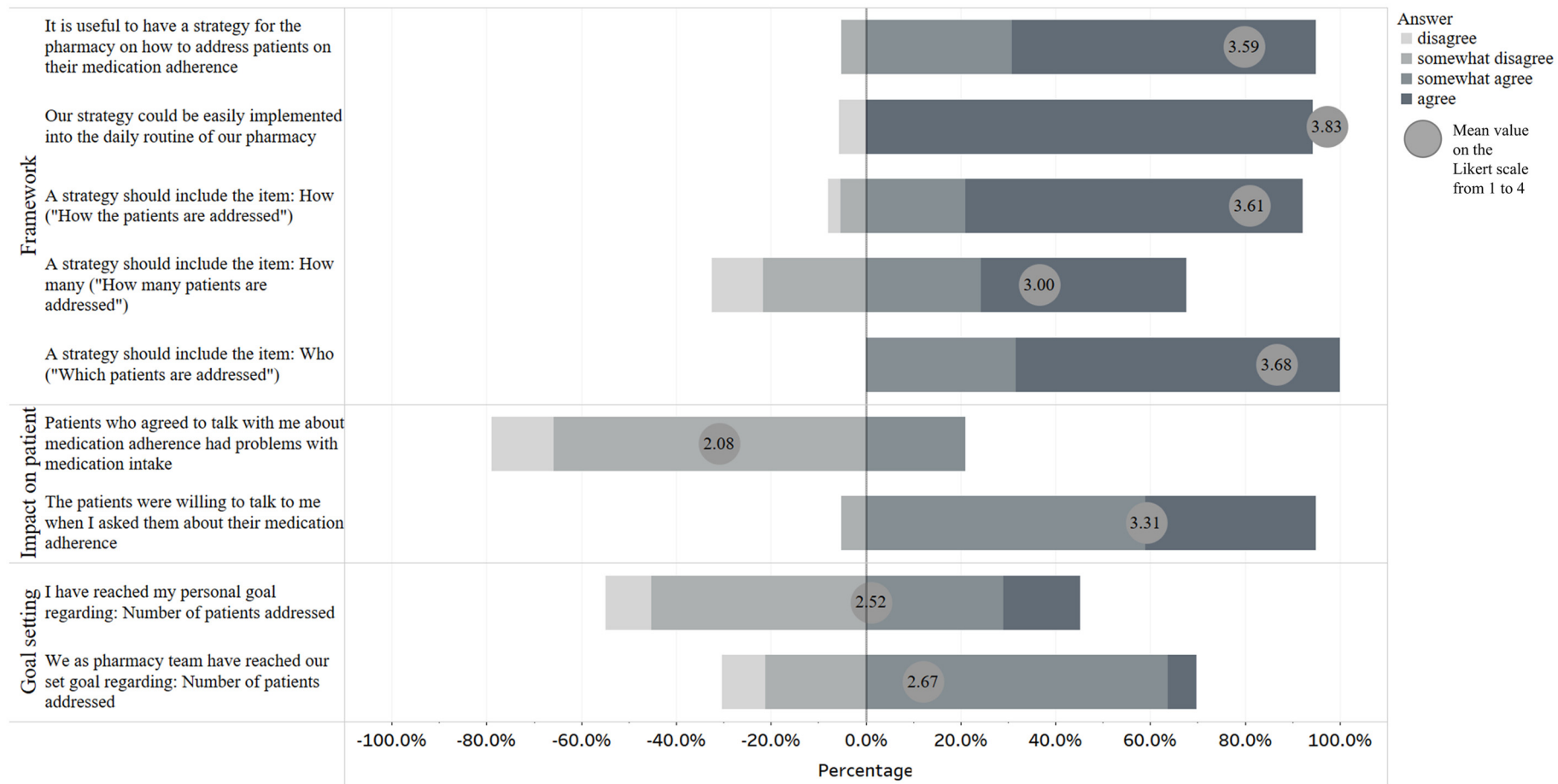


Fig. 2. Responses of the 39 pharmacy team members concerning the framework, impact on the patient, and goal-setting.

example, the Indian Health Service (IHS) counseling techniques propose three prime questions for engaging users of medicines: (1) What are you using this medication to treat? (2) How do you take this medication? (3) What problems are you experiencing with this medication?⁴³ These questions should help improve patients' understanding of their medicines and lead to short-term improvement in medication adherence.⁴⁴ In this study, all pharmacy teams were able to address patients independent of the chosen target plans. In a further step, the teams reflected on how to address the issue of medication adherence. They estimated that most patients would respond positively to a conversation about their medication adherence, which was supported by the observation that 50 out of 73 patients accepted a discussion about medication adherence. To conclude, information-centered and patient-centered communication styles seemed equally successful as ways for pharmacy teams to discuss health behavior with patients, as long as they were preceded and followed by reflection.

4.3. Target number ("How many")

During the brainstorming sessions, the pharmacy teams determined a high target number of patients (up to 100 patients) and finally addressed a mean of 7.3 patients during the pilot day. Nevertheless, most of the pharmacy teams self-evaluated that the goal of the pilot day had been reached, which means that they had overestimated their target numbers. However, while the term "goal" was defined as corresponding to a preset number, it can be interpreted in many other ways. Further, both the target numbers and the target patients heavily depended on the traffic at the pharmacy, which was easily influenced by factors that were out of reach of the pharmacy teams, such as the weather. To conclude, even if the target patient numbers were out of reach, they allowed the pharmacy teams to define a measurable goal. Studies have demonstrated that setting measurable and realistic goals leads to higher performance levels.^{20,45} Ultimately, setting target numbers closer to reality is more likely to be achieved through experience with using the three-item framework.

4.4. Meaning for practice

A critical evaluation of the results indicates that pharmacy teams can develop a strategy based on a simple three-item framework with social-marketing components. The structure of the three-item framework has several implications for practice. First, it makes it possible to tailor a strategy to the conditions and needs of an individual pharmacy. This might be why the participating pharmacy teams accepted the three-item framework and were willing to apply the strategy in the future. Second, the strategy can be developed within a 30-min brainstorming session without training or preparation. In pharmacy practice, where time is precious, the possibility of finalizing a strategy in a short time is of utmost importance. Third, according to common quality-improvement concepts such as the Deming Cycle, the three items can be easily modified, continuously adapted, and improved (e.g., by choosing different target patients or target plans).⁴⁶ Thus, once a pharmacy team has internalized the concept, they can duplicate it to other services and gain confidence and time. Fourth, the generic modular structure of the framework has the potential to promote other critical counseling themes such as "alcohol and medication" or "driving and medication."

4.5. Strengths and limitations

This study has several strengths, especially concerning its methodology. First, the researcher who observed all the encounters was highly knowledgeable about the strategy developed by the pharmacy teams. This allowed him to immediately recognize the predefined strategies during the pilot day and document the observed encounters on the checklist without hesitation. Second, following the principles of action research, our approach integrated the pharmacy teams in the design of the strategy.⁴⁷ This represents a collaborative problem-solving relationship, a promising method that has already been successfully used in pharmacy practice.^{48,49}

There are also several limitations to this study. First, there was no control group. Thus, the true effect of the strategy on medication adherence counseling was not estimated. But this study did not aim to prove an effect. Second, although the silent observer represents a minimally intrusive method, an observer can cue pharmacy teams to engage more in counseling than usual (Hawthorne effect).⁵⁰ Third, observing and documenting patient encounters is a subjective assessment. Thus, the researcher might influence the reliability of the results. However, the researcher was trained in the relevant skills, and researcher bias was thus reduced. Nevertheless, doubling the data with a second observer might have delivered more reliable results. Fourth, it is impossible to assess how patients and pharmacy teams accepted the strategy after observing the pharmacy practices for only one working day. Nevertheless, the positive opinions of the pharmacy teams after the pilot day can be considered indicative of acceptability over time for the teams and their patients. Fifth, a sample of community pharmacies that had already participated in a medication adherence campaign was chosen, so it is possible that the pharmacy teams had a preexisting interest in the topic and a greater motivation to participate.

5. Conclusion

The proposed framework is a simple tool to develop a strategy for addressing medication adherence in community pharmacies during daily practice. The generic modular structure of the framework that combines a target patient ("Who"), a target plan ("How"), and a target number ("How many") allowed the 10 participating pharmacy teams to develop and apply their unique strategies successfully. The framework was accepted by the pharmacy teams and judged adaptable and feasible. A further study will investigate if pharmacy teams can successfully engage patients in a counseling conversation on medication adherence and ultimately propose targeted medication adherence interventions.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

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Screen study 2019

Pharmacy-No. ₁

Customer No. ₂

Observer ₃

Time ₄ : - :

Information about the customer

- 05 Male 06 Female
 07 Regular Customer 08 New customer
 09 Present 10 Relative
 11 <20y 12 21-40y
 13 41-65y 14 65-80y
 15 >80y

Situation during the consultation

- 16 Interruption 17 Waiting customer
 18 High noise level 19 Language barrier
 20 Time pressure 21 Not assessable

Prescription

- 22 First fill 23 Repetition
 24 In advance 25 Without a prescription
 26 Hospital discharge 27 Ambulant
 28 OTC

Details about the medications

Number ₂₉

- 30 PMC criteria met (>4 Medication /for >3 months according to Swissmedic)

Counseling

- 31 Counseling offer
 32 Consultation in separate room
 33 Refused counseling
 34 #Number of medications: _____
 35 Medications known

Counseling themes

Before

- | | |
|-------------------------------|--|
| A | E |
| 36 <input type="checkbox"/> | <input type="checkbox"/> Type of application |
| 36.1 <input type="checkbox"/> | <input type="checkbox"/> Instruction |
| 37 <input type="checkbox"/> | <input type="checkbox"/> Therapy duration |
| 38 <input type="checkbox"/> | <input type="checkbox"/> Frequency of intake |
| 39 <input type="checkbox"/> | <input type="checkbox"/> Time of intake |
| 40 <input type="checkbox"/> | <input type="checkbox"/> Modality of intake |
| 41 <input type="checkbox"/> | <input type="checkbox"/> Indication |
| 42 <input type="checkbox"/> | <input type="checkbox"/> Mechanism of action |
| 43 <input type="checkbox"/> | <input type="checkbox"/> Effect |
| 44 <input type="checkbox"/> | <input type="checkbox"/> Therapy goal |
| 45 <input type="checkbox"/> | <input type="checkbox"/> Adverse drug reaction |
| 46 <input type="checkbox"/> | <input type="checkbox"/> Problems during treatment |
| 47 <input type="checkbox"/> | <input type="checkbox"/> Importance of intake |

After

- | | |
|--------------------------|--------------------------|
| A | E |
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |
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| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |

Addressing of potentially non-adherent patients:

Time ₄₈ : - :

49 Who is addressed?

Corresponds to is addressed

- | | | |
|-------|--------------------------|--------------------------|
| Who 1 | <input type="checkbox"/> | <input type="checkbox"/> |
| Who 2 | <input type="checkbox"/> | <input type="checkbox"/> |
| Who 3 | <input type="checkbox"/> | <input type="checkbox"/> |
| Who 4 | <input type="checkbox"/> | <input type="checkbox"/> |

Who: _____

50 How is the patient addressed?

- How 1
 How 2

How 3

How 4

Others: _____

51 Successfully addressed?

- Yes No

What is being addressed about adherence?

- 52 Positive reinforcement
 53 Motivation
 54 Organization
 55 Dates
 56 Barriers
 57 Skills
 58 Therapy / Disease Understanding
 59 What does nonadherence mean?

Flyer used ₆₀

Results

- 61 Delivery of a flyer
 62 Dispensing adherence aid:

- 63 Appointment for PMC
 64 Switch to a dose dispenser
 65 Other services _____

Aftercare

- 66 Follow-up
 67 Do you have any questions?

68 Open remark field

¹ A = Patient asks; E = Pharmacy team member explains. The items 49–50 were adapted for each pharmacy. Forward translation in English was performed by the researchers.

Appendix B. Characteristics of the pharmacy team members of the 10 participating pharmacies

	Participated in the development of the strategy N = 34	Participated in the pilot day N = 39
Female [n (%)]	30 (88.2%)	35 (89.7%)
Mean age [years ± SD]	34.9 ± 13.4	33.3 ± 10.7
Work experience [years ± SD]	12.6 ± 10.4	9.5 ± 8.3
Mean working time percentage [% ± SD]	83.9 ± 25.2	85.5 ± 23.4
Degree [n (%)]		
Pharmacist	13 (38.2%)	13 (33.3%)
Pharmacy technician	11 (32.4%)	17 (43.6%)
Advanced pharmacy technician	4 (11.8%)	4 (10.3%)
Apprentice	3 (8.8%)	1 (2.6%)
Druggist	2 (6%)	4 (10.3%)
Pharmacist in training	1 (3%)	-

Appendix C. Target patients, target plans and target goals of the 10 pharmacies

Pharmacy number	Who? (target patient)	How? (target plan)	How many? (target number)
A01	As many patient as possible with a prescription, as diverse as possible	Situational With open questions By showing a flyer	10
A02	Everyone	By showing a flyer	2
A03	Patients with permanent prescriptions Patients with sensitive medicines (e.g. antibiotics, narcotics, benzodiazepines.) Patients discharged from the hospital	Promoting an action day "adherence"	12
A04	Patients with laxatives (OTC)	Through conversation in the consultation room	1–2 patients
	Patients with prescriptions	By asking direct questions after checking the patient's history	10 patients
A05	Patients with prescriptions Patients with osteoporosis medicines Patients with blood-thinning medicines Patient with antihypertensive medication	"How do you take the medicines?" "How much do you know about osteoporosis?" "The medication is optimal for your blood circulation, so it is important to take daily, when do you take it?" "Do you know your blood pressure?" "Do you notice when your blood pressure is too high?" (possibly offering measurement)	12 patients, 2 per person
A06	All customers with refill prescriptions	With a unitary key sentence: "Are you satisfied with your medication?"	100
A07	Patients with polymedication, chronic diseases or critical indications (e.g.	With open questions "Are you satisfied with the effectiveness of the medication?"	7

(continued)

Pharmacy number	Who? (target patient)	How? (target plan)	How many? (target number)
A08	asthma, diabetes, epilepsy or hypertension) All patients	"How often do you forget your medication?" Everyone has their own strategy, depending on what fits the situation	50 + 4 Polymedicationcheck (PMC)
A09	Regular customers with refill prescriptions with inconsistent history	"How often do you take it?" "When and how do you take it?" "Are you interested to be shown how to use it again?"	10 to 20% of customers 2
A10	Patients whose medication is labelled with "according to doctor's prescription" (especially inhalation devices and sprays) Everyone with a prescription Critical OTC medication: Pain killers, laxatives	"Did something change?" "Did it work well?" "Is it for you?"	8

Appendix D. Target patients and target plans according to categories with corresponding definitions and results

a) Target patient		
Category	Definition	Results
Request	purchase of the patient (e.g. first prescription, refill, OTC purchase)	Patients with prescriptions (n = 4) Patients with permanent prescriptions All customers with refill prescriptions
Medication	medicines with a high probability of nonadherence	Patients with osteoporosis medicines Patients with blood-thinning medicines Patient with antihypertensive medication Patients with polypharmacy, chronic diseases, or critical indications (e.g. asthma, diabetes, epilepsy, or hypertension) Patients with laxatives (OTC) Critical OTC medicines such as pain killers, laxatives Patients with sensitive medicines (e.g. antibiotics, narcotics, benzodiazepines.)
Traits	demography (e.g., age, gender), behavior (e.g., patients refills too late), and psychography (lifestyle, social, personality)	Patients discharged from the hospital Regular customers with refill prescriptions with an inconsistent history
No explicit instruction of use	Several refills of the same medication with no instruction of use	Medication is labelled with "according to doctor's instruction" (e.g. inhalation devices and sprays)
b) Target plan		
Type of approach	Aid using a leaflet promoting a campaign	Results Showing a flyer (n = 2) Promoting an action day "adherence"
Patient-centered	using prime questions	Questioning the patient about their therapy regime: "How much do you know

(continued)

a) Target patient		
Category	Definition	Results
		about osteoporosis?"
		"The medication is optimal for your blood circulation, so it is important to take it daily, when do you take it?"
		"Do you know your blood pressure?"
		"Do you notice when your blood pressure is too high?" (possibly offering measurement)
		"How often do you take it?"
		"When and how do you take it?"
		"Are you interested to be shown how to use it again?"
		"Did something change?"
		Inquiring about the patient's experience with their therapy:
		"Are you satisfied with your medication?"
		"Are you satisfied with the effectiveness of the medication?"
		"Did it work well?"
		"Is it for you?"
		Confronting the patient:
		"How often do you forget your medication?"
		By asking direct questions after checking the patient's history
	defining the style of communication	Through conversation in the consultation room
		Situational
		Everyone has their strategy, depending on what fits the situation

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.rcsop.2022.100123>.

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