Domiciliary Medication Review (ReMeDo): development, reliability and acceptability of a tool for community pharmacists

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Domiciliary Medication Review (ReMeDo): development, reliability and acceptability of a tool for community pharmacists

Abstract

Objectives: Polymedication and medication hoarding in patients' homes may increase the risk of drug-related problems (DRPs). Community pharmacists can prevent DRPs through medication reconciliation and review. This study aims to 1) develop a tool for community pharmacists to perform domiciliary medication review (ReMeDo) and 2) assess the interrater and test-retest reliability and acceptability of the tool.

Methods: The ReMeDo tool was first developed six years prior to this study to perform medication review during pharmacist home visits. A literature review was performed to update the content of the existing tool. Ten pharmacy students participated in the assessment of the interrater and test-retest reliability using three vignettes based on former ReMeDo patients. Test-retest reliability coefficients were calculated for the entire tool and each segment. Global and individual interrater reliability coefficients were also computed. Acceptability was assessed through a satisfaction survey.

Key findings: The ReMeDo tool was structured to guide the collection of information before, during and after the pharmacist home visit. The global kappa coefficients for interrater and test-retest reliability were 0.70 (95% CI: 0.67; 0.73) and 0.71 (95% CI: 0.68; 0.74), respectively. The test-retest reliability coefficients for each segment and the interrater reliability coefficients for participants were higher than 0.60 (except for one participant), demonstrating a moderate to substantial level of agreement. The tool was deemed acceptable by participants.

Conclusion: The ReMeDo tool proved to be reliable and acceptable for use by community pharmacists to perform medication review in patients' homes.

Keywords: medication review, medication reconciliation, home visits, community pharmacy.

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Introduction

Elderly patients are commonly multimorbid, polymedicated and followed-up simultaneously by several healthcare professionals[1-4]. Polymedication is often connected to duplicated treatments, inappropriate medication storage and hoarding in patients' homes [4], which increase the risk of drug-related problems (DRPs)[4-7]. DRPs (defined as events or circumstances involving drug therapy that actually or potentially interfere with desired health outcomes [8]) can be triggered by patients' intentional or unintentional behaviours [8-11]. For instance, confusion about which drug or dose to take, or storage errors [8]. These behaviours, frequent in primary care[12; 13], are associated with poorer health outcomes leading to hospitalization[7; 9; 13]. Since such behaviours are not directly recognisable in community pharmacies, they might be more easily identifiable in patients' homes[13]. Therefore, effective strategies are needed to help patients manage their medications at home[11; 14].

Among such strategies, medication reconciliation stands out as the formal process through which healthcare professionals partner with patients to ensure the transfer of medication information at interfaces of care[15]. Pharmacy services involving medication reconciliation and review facilitate the assessment of patients' actual use and understanding of their medications and communicating the findings from these assessments to other healthcare professionals[16; 17]. For instance, the Medicines Use Review (MUR) in the United Kingdom aims to improve patient knowledge and use of drugs [17; 18]. Furthermore, the recognition of the pharmacist role has resulted in the expansion of pharmacy services into outpatient settings, including patients' homes. Results from randomized controlled trials have shown that pharmacist home visit interventions can improve patient adherence and knowledge[16]. In the Australian Home Medicines Review (HMR) programme, pharmacists provide home-based medication review services for community-based patients at risk of DRPs through a collaborative process involving physicians and pharmacists [19; 20].

In Switzerland, basic cognitive services offered in community pharmacies have been legally acknowledged since 2001 [21]. Among them, the so-called "Polymedication Check" (PMC), based on the MUR, was offered in community pharmacies for patients on ≥ 4 prescribed drugs taken over ≥3 months. Initially proposed as the means to address adherence issues, the PMC was mainly composed of a patient-pharmacist interview focused on the review of medication use. Nevertheless, a significant improvement in medication adherence was not demonstrated by the PMC,

and its reimbursement was withdrawn in June 2019[22]. Moreover, the PMC did not target risk factors predisposing patients to DRPs and existing in patients' homes.

In an effort to optimize DRP management in the elderly ambulatory population, the Community Pharmacy of the Center for Primary Care and Public Health in Lausanne (Unisanté) developed ReMeDo, a domiciliary medication review service based on the principles of the PMC to "create the most accurate list possible of all medications a patient is taking[23; 24] "with the aim of optimizing medicines use and improving health outcomes" [25]. ReMeDo includes a pharmacist visit to the patient's home to reconcile the medications documented in the patient's record in the community pharmacy and those stored at home. For a structured evaluation of a patient's medicines, the development of a reliable tool allowing a systematic review of the medications stored at patients' home is crucial to identify and manage DRPs.

This study aimed to 1) develop a tool for domiciliary medication review (ReMeDo, per the acronym in French) intended for community pharmacists and 2) to assess the interrater and test-retest reliability and acceptability of the tool.

Methods

The local Ethics Committee -Commission cantonale d'éthique de la recherche sur l'être humain (CER-VD)- deemed this project to be outside the application of the Swiss law on human research, given that this project was focused on the professional opinions of pharmacists regarding the use of the tool and no patients were involved

Update of the ReMeDo tool

As conceived by the Unisanté pharmacy, ReMeDo is a medication review service conducted in the patient's home. Similar to the PMC, ReMeDo comprises a patient-pharmacist interview focused on the review of medication use by patients on ≥ 4 prescribed drugs taken over ≥3 months. Undertaking , the ReMeDo interview in patients' homes,

facilitates the reconciliation of patient's prescribed medications, as registered in the community pharmacy record, with the information collected from the patient about medications kept at home and their administration; thus, the most accurate medication list is completed. ReMeDo does not include a review of the appropriateness of each medication prescribed to identify what is missing from the current therapy [26], nor review inappropriate dosage regimen or dosage form of prescribed medications, as this is already verified through the "validation of prescription" service[27]. Instead, ReMeDo focuses on technical DRPs, which represent problems related to a prescription and/or medication use but not those related to knowledge of the pharmacological or disease state [28].

The ReMeDo tool was developed and first piloted in 2010 with 21 patients. Throughout the pilot phase, the tool was designed considering the context (the patient's home), to collect information at different points and examine places and current conditions of medications storage, which could also influence their use and cause DRPs. . The original structure of the ReMeDo tool was divided into three main sections according to the timing of the intervention: before, during and after the visit of the pharmacist. The information to be collected originally included that collected *before* the visit, namely, the patient's identification data, prescribed medications (as documented in the pharmacy record), the prescriber's name, the existence of hepatic and/or renal impairment and current conditions for medication management (i.e., caregiver assistance); that collected *during* the visit, namely, the patient's knowledge and use of each medication kept at home as examined by the pharmacist, information about medication status (prescribed or not) and storage conditions (i.e., location, container conditions and expiration date); and that collected *after* the visit, namely, an appraisal of the collected information about pharmacotherapy (including over-the-counter (OTC) medications observed at home) to identify DRPs.

To update this content, a search of the PubMed database was conducted using a combination of the MeSH terms "home care services", "pharmaceutical services", "pharmacist", "medication reconciliation", and "medication therapy management", as well as the word "home". No filter was applied, and articles written in English, French or German were considered. Only articles targeting the following were selected: 1) interventions performed in patients' homes by community pharmacists and 2) medication reconciliation services. All tools referred to in the papers were reviewed. If tools were not available online authors were contacted to obtain copies. Finally, the existing ReMeDo tool was updated to include additional fields identified through the review.

Interrater and test-retest reliability

Since the ReMeDo tool is to be used by pharmacists with different levels of experience, it was deemed necessary to test the tool's reliability with non-specialized participants. Therefore, volunteer participants were recruited from the students of the Master of Pharmacy Program at the University of Geneva (Switzerland): the first ten students who showed interest in participating were selected. The 4-hour training consisted of explaining the ReMeDo service and how to use the updated tool, followed by a workshop where participants could perform a medication reconciliation based on three clinical vignettes informed by the profiles of former ReMeDo patients. The vignettes represented three different patients and included their complete list of medications, pictures of the medication containers and information on the medication storage locations in the patient's homes. Each participant received a printed version of the training session and an instruction manual for the tool. Thereafter, participants were asked to reconcile the medications and document the DRP detected during the review (already predefined in the vignettes) using the updated tool. No communication between participants was possible.

A global interrater reliability coefficient was determined for the entire tool. In addition, the tool was separated into four segments according to: "patient" (steps 1 to 4); "medication use process" (steps 5 to 14); "medication reconciliation and review" (step 15); and "DRP synthesis" (steps 16 to 18). A kappa interrater reliability coefficient was computed for each segment. Interrater kappa coefficients greater than 0.40, representing a fair level of agreement, were deemed reliable[29].

Test-retest reliability was assessed two weeks after the interrater reliability evaluation using two of the three vignettes. Global and per rater (individual) kappa coefficients were calculated. Test-retest kappa coefficients greater than 0.60, indicating a fair level of agreement, were considered reliable[30].

The kappa coefficients for the interrater and test-retest reliability were calculated using Stata IC 14.0® software.

Acceptability

To evaluate the acceptability of the tool, participants were asked to complete a satisfaction survey by responding to a 9-item questionnaire and one open question, adapted from Maes et al[31]. For eight of the nine questions, the response choices were provided on a 4-point Likert scale and included *strongly disagree*, *somewhat disagree*, *somewhat agree*, and *strongly agree*). For one question ("To document this case using the tool, I had to read the instruction manual"), the response choices were changed to *no, not necessary; yes, once; yes, two or three times*; and *yes, several times*. In the open question ("How should the tool be improved for exhaustive DRP identification?"), participants were invited to suggest potential improvements.

Sample Size

The existing tools for documenting DRPs in community pharmacies have been evaluated previously with 10 to 21 participants. Their interrater reliability kappa coefficients vary between 0.53 and 0.61[32-34] which is considered a moderate level of agreement[30]. Assuming that the ReMeDo tool has similar reliability (kappa correlation of 0.6), a sample of 10 participants was considered sufficient to obtain a 95% CI around a reliability coefficient of 0.40–0.80.

Results

Update of the ReMeDo tool

Among the 1,245 articles originally identified, 33 reported on studies of medication management at home. Among these studies, 18 did not feature a tool, four were written by authors who could not be contacted, and one included a tool unrelated to the subject. Finally, 10 of the 33 studies featured the use of tools that were deemed comparable to the ReMeDo tool[35-44].

The content of the tool sections was updated and reorganized based on the 10 available tools found in the literature search. The original division of the ReMeDo tool into three sections, i.e., before, during and after the pharmacist home visit, was maintained to facilitate its chronological completion. In general, the main changes throughout the tool served to guide the synthesis of the information collected from different sources (physicians, the patient himself or herself and relatives) at the end of each section. In addition, elements regarding patient dexterity, sight problems and the use of assistance for taking medications (e.g., the use of a pill organizer) were integrated throughout the tool**.** More specifically, a list of known patient health problems was added to the *before* section as a means to explain medication indications; the *during* section was reorganized to allow the documentation of further details of the storage conditions in the patient's home, notably the location of medications and their containers; and a short assessment and sorting of OTC medication was added to the *after* section. The final version of the tool is shown in Table 1.

Interrater and test-retest reliability

Ten participants were recruited, 50% (n=5) were men and the median age (range) was 25 (23-27) years. The three vignettes were analysed by all participants. The global interrater reliability coefficient was 0.70 (95% confidence interval (CI): 0.67; 0.73). The interrater reliability coefficients for the segments of the tool were 0.87 (95% CI: 0.86; 0.89) for the "patient" segment; 0.68 (95% CI: 0.66; 0.68) for the "medication use process" segment; 0.52 (95% CI: 0.47; 0.55) for the "medication review" segment, and 0.60 (95% CI: 0.56; 0.68) for the "DRP synthesis" segment.

The global test-retest reliability coefficient was 0.71 (95% CI: 0.68; 0.74). The test-retest reliability coefficients for each participant are presented in Table 2.

Acceptability

Overall, participants were satisfied with the tool. They perceived the ReMeDo tool to be necessary to optimize medication use and to identify medication management problems at home that would possibly lead to DRPs. The tool and its instruction manual were deemed easy to use. For potential improvements of the tool, participants suggested adding a space for "remarks" or "notes" to items in the "medication use process" and "medication review" segments

to document the collected information in further detail. Five participants consulted the manual more than once. In general, participants did not suggest any revision of the manual was needed. . The results of the survey are presented in Figure 1.

Discussion

The ReMeDo tool constitutes a novel medication review instrument structured around the community pharmacist home visit, designed to allow pharmacists to collect the relevant information at the appropriate moments before, during and after the visit. Based on a literature review, the content of the tool was updated to take in count current advancements in medication reconciliation and review. The tool showed high interrater and test-retest global reliability. Moreover, the tool was deemed acceptable for use for medication reconciliation at home by participants.

Even if new research has emerged regarding medication reconciliation and how it may be carried out in Swiss community pharmacies[45; 46], only a few studies focused on medication reconciliation at home [38-43]. To our knowledge, this is the first study to develop a reliable tool to be used specifically for a medication review at the patient's home allowing the documentation of DRPs. However, some limitations need to be acknowledged. Only one database was used for the literature review and, consequently, may have missed relevant papers. Despite this limitation, significant elements affecting medication management at home were identified and integrated into the ReMeDo tool [1; 43; 47]. Additionally, the sample size can be considered relatively small (10 participants). Reliability coefficients are dependent on the number of possible ratings, the level of agreement among raters and the difference among coefficients for hypothesis testing[48]; hence, it is likely that a smaller sample size would lead to higher variability in the coefficients. Therefore, significant variability in the kappa coefficients could have been expected with this sample size. However, as shown by the kappa coefficients above 0.40, a moderate level of agreement among raters was confirmed. So, the ReMeDo tool can be considered reliable for use in clinical practice [30; 49]. It is probable that the variability observed in the reliability coefficients would decrease with a larger sample[49]. Furthermore, participants were recruited on a voluntary basis; consequently, selection bias cannot be completely excluded. It is possible that recruiting more experienced participants would have yielded different reliability results and perspectives about how to improve the tool. Nonetheless, participants' ability to complete the review shows the tool is usable even

for inexperienced pharmacists. It is therefore expected that any community pharmacist would be able to use the ReMeDo tool in his or her current practice. Finally, while participants did not deem necessary to revise the manual to improve its comprehensibility, they did not explain if the reasons motivating them to consult it more than once were related to the training session, the manual itself, or both, being considered as incomplete or unclear. The opinion of the ReMeDo tool users about the manual and training session, will be further evaluated in future studies of the ReMeDo service.

The ReMeDo tool is particularly advantageous for pharmacists to document DRPs detected after the medication review at home. Moreover, adding new elements to the "DRP synthesis" section may help pharmacists to consider patients' difficulties and better address or even prevent DRPs. For instance, the use of pill organizers [50], patient dexterity and sight problems[47; 51] may have an impact on medication management. The tool had interrater reliability coefficients above 0.60 for the "medication review" and "DRP synthesis" segments, indicating moderate agreement. A substantial and an almost perfect level of agreement were observed for the "medication use process" and "patient" segments, respectively. This difference among the segments may be due to the first two involving pharmacists' judgement, while the others serve mostly for data collection purposes. Additionally, all but one of the test-retest reliability coefficients were greater than 0.60, indicating a moderate level of agreement. It is not possible to establish direct comparisons with other identified tools, as their reliability has not been assessed[35-44]. To our knowledge, ReMeDo is the first tool used for medication review at home that has been shown reliable.

The ReMeDo tool might have some limitations. First, it currently exists only in a paper version. The development of an electronic version could now be considered. Indeed, the use of technology to aid in pharmacists' home visits has been previously highlighted[16]. Stable connectivity, notably from patients' homes to the internal pharmacy system, is essential to aid a pharmacist in better assessing a patient's medication regimen[52], but connectivity is still a poorly discussed aspect regarding the use of technology to develop pharmacy services delivered at home[16]. The ReMeDo tool was designed to collect all the necessary information without pharmacists needing to communicate with the pharmacy during the home visit. Therefore, an eventual electronic version of the ReMeDo tool would remain adaptable regardless of the availability of an internet connection.

Pharmacist home visits should be beneficial to identify risk factors at home that predispose patients to DRPs. The number of medications found in a patient's home is generally higher than the number of prescribed medications[4]. Medications kept at home often include non-prescribed medications such as OTC medication taken regularly, prescribed medications to be taken as needed or medications previously prescribed but not currently taken[4; 42]. Patients who take a high number of medications and who declare to have several storage locations for medications, present poor medication adherence [42], a higher number of adverse drug events and greater severity of illness [4]. Currently, there is no remunerated pharmacy service offered in Swiss community pharmacies for medication review. Demonstrating the reliability and acceptability of the ReMeDo tool represents a first step in the development of such services. Nevertheless, the impact of the ReMeDo service in decreasing the number of DRPs remains to be determined.

Conclusion

ReMeDo is the first tool developed to facilitate systematic data collection for performing a medication review in the patient's home, and has shown to be reliable and acceptable for use in the community pharmacy setting, even by inexperienced pharmacists.

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Table 1. Content of the ReMeDo tool.

Domiciliary medication review - The ReMeDo tool

Date of the visit: ____ / _____ / ____

Start time of the visit: _____ h **_____**min

Pharmacist full name: _____

Information to be collected before the visit:

1. **Patient profile**

Surname: _____ **Name:** _____

Patient identification number : _____

Date of birth: _____/_____/_____ **Sex:** Male ☐ Female ☐

First language: _____

Address: _____
Telephone: _____

E-mail: _____

Current professional activity: _____

2. **Patient health problems (this information should be collected through the treating physician – Do not ask for this information from the patient)**

	YES	NO	UNKNOWN[1]
Hepatic impairment (Score[2] :_____)	☐	☐	☐
Renal impairment (Cl[3]: _____)	☐	☐	☐
Allergies to medications	☐	☐	☐
(If yes, causative medications:_____,	☐	☐	☐
Type of reaction: _____)	☐	☐	☐
Cognitive impairment	☐	☐	☐
Eyesight/Vision problems	☐	☐	☐
Dexterity problems	☐	☐	☐

[1] Unknown (undetermined or non-existent information)
[2] Child-Pugh score (class A, B or C)
[3] Creatinine clearance (ml/min)

3. Current treatment (prescribed)

Information received from the treating physician (full name):_____
on (date) :_____/_____/_____

Medication plan: Is there any differences between the medication plan and the pharmacy patient's history? If yes, perform a medication reconciliation before the visit to the patient's home										**Page 1**
Commercial name of medication	**International non-proprietary name (INN)**	**Dosage form (indicate if modified-release)**	**Strength [mg]**	**Dosage [mg]**					**Start date of treatment**	**Expected end date of treatment**
				m[1]	n[2]	e[3]	b[4]	r[5]		

[1] morning; [2] noon; [3] evening; [4] bedtime; [5] as needed

Information to be collected during the visit:

4. The patient…

	YES	NO	UNKNOWN
- Lives alone	☐	☐	☐
- Spends time around a partner, family member or other people (contact > once a week)	☐	☐	☐
- Is occasionally visited by children (12 years old or less)?	☐	☐	☐
- Uses home care services	☐	☐	☐

If yes

Home care services treatment plan:

- ☐ Absent (go to step 5)
- ☐ Unknown
- ☐ Present, electronic or paper form (*Please attach a copy*)

If present: Available for the patient at home:

YES	*NO*	*UNKNOWN*
☐	☐	☐

5. Assistance with medication management (more than one response is possible) :

	YES	NO	UNKNOWN	NOT APPLICABLE
- The patient manages his or her treatment on his or her own	☐	☐	☐	-
- The patient manages his or her treatment with a self-prepared weekly pillbox	☐	☐	☐	-
- Assistance is provided by home care services	☐	☐	☐	-
- Assistance is provided by a community pharmacy (i.e., pillbox)	☐	☐	☐	-
- The patient uses some kind of reminder to take his or her medications (e.g., alarm clock or pillbox) If yes, which one? _____	☐	☐	☐	-
- Patient uses a device for administering medications (e.g., inhaler or spacer; more than one response is possible)	☐	☐	☐	☐

- A carer, family member, or other persons assists the patient with:
  - ☐ Medication supply
  - ☐ Medication management/storage
  - ☐ Adherence assistance (pill organizer preparation, calls, reminders, etc.)
  - ☐ Medication administration (taking tablets, administering injections, administering an inhaler, etc.)
  - ☐ Other:_____
  - ☐ Unknown

Other remarks: _____

6. Medication supply (more than one response is possible) :

	YES	NO	UNKNOWN
- The patient picks up his or her own medication	☐	☐	☐
- Somebody else (i.e., a partner, family member or home care services) picks up the medication for the patient	☐	☐	☐
- It depends, many people pick up the medications for the patient If yes, who? (Partner, family member, neighbour, etc.):_____	☐	☐	☐
- A healthcare professional supplies the medications If yes who? (i.e., physician, pharmacy, or home care services): _____	☐	☐	☐
- People involved in the medication supply for the patient explicitly ask for a dosage label not to be placed on the medications. If yes, why?: _____	☐	☐	☐
- The patient wants the dosage regimen to be specified on the medications. If no, why?: _____	☐	☐	☐

7. Patient follow-up:

Physician(s) consulted during the last 12 months (full name + address + speciality)

UNKNOWN ☐

_____

_____

_____

	YES	NO	UNKNOWN
- Medications are obtained/provided in the same place	☐	☐	☐

If yes, please specify contact details (i.e., full name, address, phone number):

_____

If no, please specify (e.g., several pharmacies, home care services):

_____

- To be answered if the patient is followed up/supported by a home care service (if not leave blank). Does the patient know his or her person of reference at the home care services centre?	☐	☐	☐

If yes, please specify contact details (i.e., name, phone number):

_____

Medication storage:

	YES	NO	UNKNOWN
8. Are there medications that need to be kept in the refrigerator or stored according to recommendations?	☐	☐	☐
9. Is there a main storage location for ALL medications?	☐	☐	☐

10. Room(s) where medications are stored? (Multiple responses are possible)

☐ Dining room ☐ Living room ☐ Office

☐ Bedroom ☐ Toilet ☐ Bathroom

☐ Hall ☐ Entryway ☐ Kitchen

☐ Other: _____

11. Where is the specific storage location for medications?

☐ Pharmacy cabinet ☐ Drawer/cupboard ☐ Fridge ☐ Table/dresser

	YES	NO	UNKNOWN
If children are present, even occasionally, are the medications stored out of their reach?	☐	☐	☐

Comment _____

	YES	NO	UNKNOWN
12. Are the storage locations specifically reserved for medications? (The medications are clearly separated from other products)	☐	☐	☐

Comment _____

	YES	NO	UNKNOWN
Are there any medications out of the patient's reach? If yes, please explain which medications are out of the patient's reach and why.	☐	☐	☐

_____

13. Medication dispensing mode (Please select all the applicable answers)

☐ Weekly pillbox →
(Storage format of medications)

☐ Blister packaging
☐ Unprotected tablets
☐ Blister packaging AND unprotected tablets

Was there an error in the filling of the patient's pillbox?
YES ☐ NO ☐ UNKNOWN ☐
If yes, for which medication?
_____

☐ Original packaging

☐ Outside the original packaging →

YES ☐ NO ☐
Transferred to:
☐ A different container
☐ Another medication's container
☐ A container from a different batch of the same medication
Please specify which medications were transferred:
_____

☐ Other: _____

14. Have tablets/capsules been crushed/open/split into two or more pieces?

☐ NO (go to step 15)
☐ YES (which ones?) : _____

Done previously: YES ☐ NO ☐ UNKNOWN ☐

Potential problem:
☐ Stability
☐ Homogeneity of the dose administered
☐ Unsuitable dosage form (i.e., delayed release form)
☐ No potential problem
☐ Other: _____

15. Are someone else's medications stored with those of the patient?

☐ NO (go to step 16)
☐ UNKNOWN (go to step 16)
☐ YES →

a. Are different people's medications clearly differentiated from those of the patient? (Labels, different storage locations, etc.)
YES ☐ NO ☐ UNKNOWN ☐
b. Are the names of the people written on the medications (labels)?
YES ☐ NO ☐ UNKNOWN ☐
If you answered NO to one of the previous questions, please specify the drug-related problem (DRP) identified:
_____
_____

16. Review of ALL medication present at home (including pillboxes, over-the-counter medicine, non-prescribed medication or alternative medicine, as-needed medication, etc.).
Tick all applicable DRPs

Commercial name - International non-proprietary name (INN)	Dosage form	Identified DRP										
		Expired*	Dosing label lacking/inexistent	Indicated dosing on the label that is different from that prescribed	Incorrect strength	Double medication**	Adherence problem***	Accumulation****	Inappropriate storage	No DRP	Other*****	Notes/comments
									☐ Light ☐ Humidity ☐Temperature ☐ Children			
									☐ Light ☐ Humidity ☐Temperature ☐ Children			
									☐ Light ☐ Humidity ☐Temperature ☐ Children			
									☐ Light ☐ Humidity ☐Temperature ☐ Children			
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									☐ Light ☐ Humidity ☐Temperature ☐ Children			
									☐ Light ☐ Humidity ☐Temperature ☐ Children			

* Expiration date or "use by" period has already passed or is undetermined; e.g., eye drops without an opening date indicated
** Same generic name and same dose but different dosage form or same therapeutic class without apparent cause
*** Adherence: The time elapsed between the delivery dates and today is too long or short, etc.; problem identified through packaging quantity, e.g., a significant amount of unopened boxes, few or no boxes of a frequently consumed medication, or empty packages without any reserve left
**** Accumulation: Several boxes of similar medications are present at home (no apparent rational use)
***** Please specify

Is all prescribed medication present in the patient's home? YES ☐ NO ☐

If NO, what is missing: _____

Visit ended at: _____ h _____ min

Information to be collected after the visit:

17. DRPs associated with all the patient's medication at home

☐ Inappropriate storage (storage conditions, medications kept in different places, etc.)

☐ Medications provided by/obtained at different places

☐ Risk of confusion (e.g., risk of confusion with medications intended for another person, risk of confusion with other products, or risk of confusion between the patient's own medications)

☐ Different information about the medications (dose, dosage, treatment duration, etc.) given to the patient at different places or by different people (i.e., pharmacy, hospital, physician, relative)

☐ No DRP

☐ Other (please specify)**:** _____

18. Over-the-counter (OTC) medications found at patient's home

☐ No OTC medications found	☐ Eye drops	☐ Laxatives
☐ Oral analgesics	☐ Allergy medication	☐ Cough relief medication
☐ Topic analgesics	☐ Antacids	☐ Multivitamins and food supplementation
☐ Other treatments applied topically	☐ Natural health products/homeopathy	

19. Global impression scale on medication management by the patient at home

On a scale from 1 to 10 (circle the appropriate number)

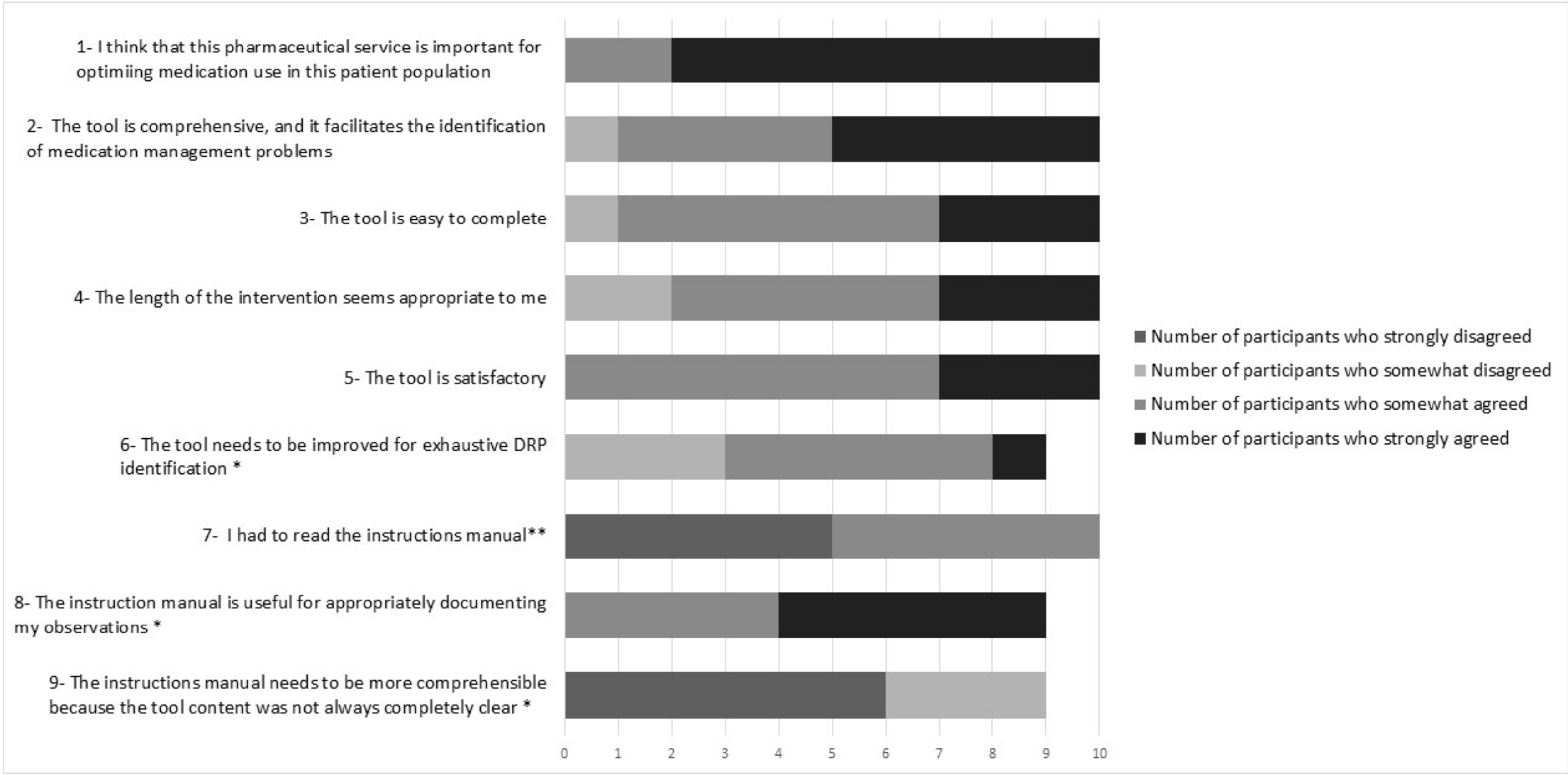
1 2 3 4 5 6 7 8 9 10

1 = medication management is catastrophic

10 = medication management is perfect

Table 2. Individual test-retest reliability coefficients.

Participant Identification Number (ID)	ID 1	ID 2	ID 3	ID 4	ID 5	ID 6	ID 7	ID 8	ID 9	ID 10
Kappa index (95% CI)	0.67 (0.64; 0.80)	0.87 (0.84; 0.89)	0.47 (0.38; 0.50)	0.70 (0.60; 0.78)	0.60 (0.54, 0.62)	0.88 (0.82; 0.95)	0.57 (0.47; 0.63)	0.70 (0.63; 0.75)	0.71 (0.65; 0.75)	0.85 (0.84; 0.87)



Notes:

*One participant did not answer question 6, and another participant did not answer questions 8 and 9.

** Five participants answered "no, not necessary" and five answered "yes, two or three times".