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Patients' attitudes towards using a question prompt list in community pharmacies

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ABSTRACT

Objective: To explore patients' usage rate and perceived usefulness and benefits of a question prompt list (QPL) when collecting prescribed medication in community pharmacies.
Methods: Data were collected in Swedish pharmacies using questionnaires and semi-structured interviews with patients. The Technology Acceptance Model (TAM) was used, and the outcomes were usage rate, factors impacting on use, and perceived ease of use, usefulness, and benefits of self-reported question-asking and self-perceived medication knowledge. Descriptive statistics and group comparisons were performed, and qualitative data were analyzed thematically with the TAM.
Results: Out of 145 patients filling out the questionnaire, 72 (50.0%) reported they had used the QPL. Patients with new prescriptions and non-native Swedish speakers used the QPL more often ($p = 0.03$; $p = 0.009$, respectively). The QPL was quick to read (86.3%) and easy to understand (91.4%). Forty percent stated that they asked more questions, and self-reported users scored higher on self-perceived medication knowledge. In the interviews ($n = 14$), the QPL was described as an eye-opener as to what one could ask the pharmacist.
Conclusions: Patients were willing to use a QPL in community pharmacies.
Practice implications: A QPL in pharmacies might improve patients' engagement medication knowledge, as well as showcase the expertise of pharmacists.

1. Introduction

Communicating about the appropriate use of medication is a core activity in pharmacy practice, and counseling is important in preventing drug-related problems [1] because about 15% of hospital admissions are related to incorrect use of medication [2]. Patients who self-manage their medications should have enough knowledge to enable appropriate use. Reliance on pharmacists in acquiring such knowledge depends, among other factors, on expectations of pharmacists. Increased trust in pharmacists will increase patients' use of pharmacists as an information source [3].

Even though communication about medication use is a core activity in pharmacy practice, this seems to only partly align with patients' perceptions of community pharmacies. Renberg et al. mapped patients' expectations and identified two main groups: 1) people who primarily want the drug product and 2) people who are mainly concerned with personal support [4]. Perhaps the first view is predominant because, according to a study in the UK, most patients see the pharmacy as a store [5]. In line with these results, Danish pharmacy customers had difficulties in conceptualizing the health care role of pharmacists [6]. In general, patients are happy with the advice given by pharmacists [7], but they have low expectations and do not readily see a link between pharmacists' help and improvements in their health [6].

The pharmacists usually ask most of the questions, but they are often unsuccessful in eliciting the patients' perspectives on medication use [8,9]. Various factors impact counselling in pharmacies such as type of medication, newer compared to repeat prescriptions, patients' question-asking behavior, and regulations [10]. Research suggests that there has been little focus on giving patients the tools they need to become more involved in medication counseling in pharmacies [11].

One such tool might be a question prompt list (QPL). A QPL is a list with predefined topics, cues/prompts, hypothetical scenarios, and

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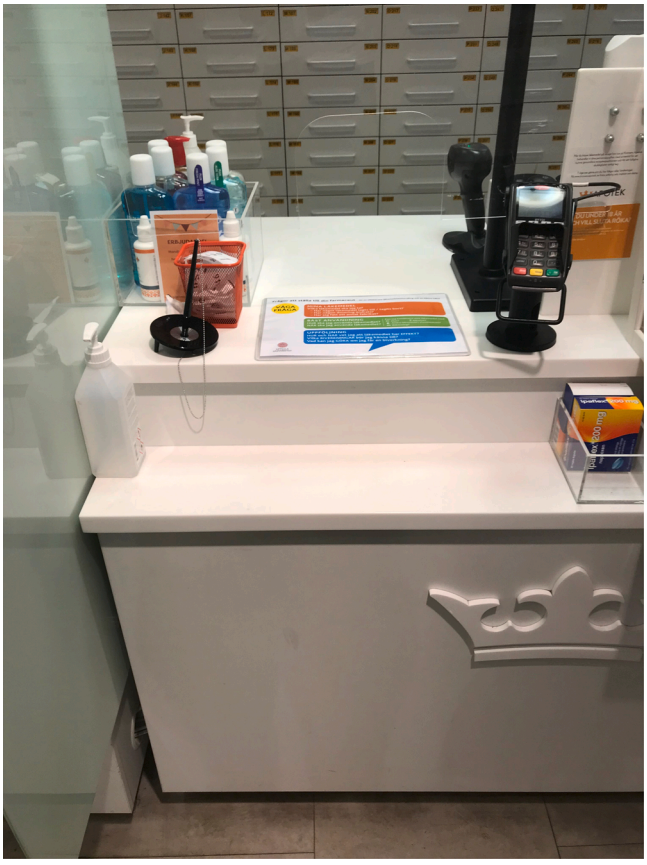

Fig. 1. Placement of the QPL.

patient concerns or questions [12]. The idea is to improve patients' ability to ask questions and stimulate thinking, thus making patients better prepared to make treatment decisions [12]. Previous studies have explored patients' perspectives on QPLs in health care settings, for example, in oncology, with HIV patients, and in palliative care [13–15]. Patients report that a QPL empowers them in the dialogue with health care professionals and normalizes asking questions, especially in relation to difficult/sensitive topics [16–19].

1.1. Theoretical model for exploring patient acceptance and use of a QPL

The Technology Acceptance Model (TAM) [20] is a framework used to explain how users accept and use new information technology (here a QPL) [21,22]. The TAM suggests that perceived usefulness and perceived ease of use influence an individual's decision to use a new technology. Perceived usefulness refers to the extent to which a person believes that using a QPL will improve their performance, for example, by improving ones' medication use. Perceived ease of use refers to the extent to which a person believes that the technology is effortless and straightforward to use. The TAM suggests that intention to use the technology mediates the relationship between perceived usefulness, perceived ease of use, and actual usage behavior. Users' acceptance of new technology and their use of that technology are related but distinct concepts [22]. Acceptance is a precursor to use because it refers to a user's intention and encompasses users' attitudes, perceptions, and beliefs towards a new technology, while use refers to the actual behavior. However, the TAM can also be used to understand potential acceptance, with representative users estimating the future usefulness and ease of use that they would expect based on a little experience with the technology [21]. Thus, perceived benefits after limited experience can represent the perceived usefulness of a technology in the future.

Patient acceptance and use of a QPL have not previously been explored in a community pharmacy setting. Considering patients' view of the pharmacy as a store and their difficulties in conceptualizing pharmacists as health care professionals, it is important to investigate factors impacting the usage rate of a QPL and to estimate the usage rate by patients in a community pharmacy.

1.1.1. Aim

The aim was to explore whether patients offered a QPL during the encounter accepted and used it, as well as the perceived benefits of a QPL, when collecting prescribed medication in community pharmacies. Specifically, we aimed 1) to measure the usage rate of a QPL by patients, 2) to explore socio-demographic factors impacting usage rate, and 3) to describe perceived ease of use and perceived usefulness, including perceived benefits on self-reported question-asking behavior and self-perceived medication knowledge after an encounter with the pharmacist.

2. Methods

2.1. Study design and setting

A mixed-method explorative study was conducted to evaluate the potential use of a QPL in pharmacies [23,24], and patients' perspectives were investigated using a questionnaire and qualitative semi-structured interviews [25]. The QPL was placed in seven Swedish community pharmacies, representing a mix of pharmacy chains, numbers of employees, and locations (large and small cities; including suburbs, shopping malls, and city centers) in the middle part and the west coast of Sweden [26].

2.2. The QPL

Full details on the development and usage of the QPL have been reported previously [26]. A list with ten questions divided into three areas about medication use was compiled and pretested with users, researchers, pharmacists, experts in the field [27] (a group who had previously developed a more comprehensive question list for elderly medication users), and a designer (Appendix A). The QPL was placed on the counter (Fig. 1). The pharmacists introduced the QPL, for example, by saying "*Please take a look through this list of questions that many medication users have. Let's see if you want to discuss something*". Most pharmacist did this before preparing the medication, thus giving the patient time to review the questions [26].

2.3. Questionnaire development

The questionnaire consisted of four parts addressing patients' acceptance, usage rate/use, and perceived benefits of the QPL as well as sociodemographic factors (see Appendix B). Part one examined patients' initial acceptance defined as whether or not *they read* the QPL "*I read the QPL*" and *patients' self-reported use* of the QPL ("*I used the QPL when talking to the pharmacy staff*") and reasons for not reading (accepting) or using the QPL.

The second and third sections focused on aspects associated with usage, including *perceived ease of use*, which encompassed the time required to read, the ease of understanding, and an open-ended question about patients' perspectives. Additionally, these sections explored outcomes tied to *perceived usefulness* and *benefits*. This included the patients' willingness to ask questions, how the QPL assisted them in determining which questions to ask, and whether they would be interested in utilizing the QPL again ranked on a five-point Likert scale (from "Strongly disagree" to "Strongly agree"). Moreover, questions about *perceived benefits* sought to determine whether patients gained more knowledge of their medication(s), as evaluated using a five-point Likert scale (from "Much less than before" to "Much more than before"). The acquisition of medication-related knowledge was chosen as a potential advantage of

Table 1
The characteristics of the study population (N = 145).

Variable (n; (%))	All (N)	Self-reported user of the QPL (n = 72)*	Self-reported non-user of the QPL (n = 72)*
Gender			
Male	53 (36.8)	26 (36.6)	26 (36.1)
Female	91 (63.2)	45 (63.4)	46 (63.9)
Age (years)			
18–35	28 (19.4)	11 (15.5)	16 (22.2)
36–50	22 (15.3)	11 (15.5)	11 (15.3)
51–65	36 (25.0)	22 (31.0)	14 (19.4)
66–80	51 (35.4)	22 (31.0)	29 (40.3)
> 81	7 (4.9)	5 (7.0)	2 (2.8)
Collected a new medication for the first time at the visit			
Yes	66 (46.2)	39 (55.7)	26 (36.1)
No	77 (53.8)	31 (44.3)	46 (63.9)
Number of medications taken regularly			
None	21 (14.7)	8 (11.3)	13 (18.3)
1–2	46 (32.2)	26 (36.6)	19 (26.8)
3–4	42 (29.4)	21 (29.6)	21 (29.6)
> 5	34 (23.8)	16 (22.5)	18 (25.4)
Native language			
Swedish	116 (80.6)	51 (71.8)	65 (90.3)
Other	28 (19.4)	20 (28.2)	7 (9.7)
Education level			
Public school	14 (9.8)	6 (8.5)	8 (11.3)
High school	46 (32.2)	28 (39.4)	17 (23.9)
University/College	83 (58.0)	37 (52.1)	46 (64.8)

Data were missing for:
All: gender (n = 1), age (n = 1), new prescription (n = 2), number of medications (n = 2), language (n = 1), and education (n = 2).
Used the QPL: gender (n = 1), age (n = 1), new prescription (n = 2), number of medications (n = 1), language (n = 1), and education (n = 1).
Did not use the QPL: number of medications (n = 1) and education (n = 1).
* See Table 2 for inclusion and exclusion of the study population in these categories.

using a QPL in pharmacies as a natural outcome of asking more questions. This part was inspired by a similar questionnaire from a general practitioner setting about patient engagement [28].

The last part consisted of the *sociodemographic factors* of gender, age, native language ("Is your mother tongue Swedish? (Yes/No), medication use, and educational level). The questionnaire was tested for face validity by three experienced researchers in quantitative survey method design. A pilot was conducted on persons from the target population (above 18 years, general public collecting medications from the pharmacy), focusing on comprehensiveness and design. No major corrections were made.

2.4. Interview guide

The interview guide was semi-structured around themes, with suggestions for prompts (see Appendix C). Within the themes the perceived usefulness (benefits) and the perceived ease of use could be explored. The order of the themes could be changed during the interview, letting the patient take the lead.

2.5. Recruitment

Patients were included consecutively during autumn of 2020 (September-October). The inclusion criteria were above 18 years of age, collecting at least one prescription medication for themselves, and sufficient knowledge of the Swedish language. The researcher visited each pharmacy for 4–5 days. Recruitment took place during opening hours (except weekends). The patients were told they would be offered the use of a QPL, that their encounter would be audio recorded, and that right afterwards they were to fill out a questionnaire and may be interviewed, if they were willing. Recruiting patients for qualitative interviews in the pharmacy was difficult due to peoples' time constraints, and the goal was set to interview at least one patient per pharmacy.

2.6. Data analysis

All questionnaire responses were manually entered into Excel and double-checked by another researcher (AAN or KS) and then transferred and analyzed in SPSS Statistics Version 28.0 (SPSS, Inc., Chicago, IL). The TAM was used as the data analysis framework. In the analysis the two main categories were perceived ease of use and perceived usefulness (benefits). In our context, the participants described their experience after using the QPL. In our application of the model, the perceived benefits (*question-asking behavior in the encounter* and *self-reported medication knowledge* after the encounter) were categorized under perceived usefulness (benefits).

Participant characteristics and answers were described using frequencies and percentages for categorical data. Usage rate was assessed by the question (*"I used the QPL when talking to the pharmacy staff"*), answering yes was categorized as "Self-reported user of the QPL" and no as "Self-reported non-user of the QPL".

Data categories about ease of use/usefulness (benefits) were collapsed into three categories, and knowledge was also collapsed into three categories when presented descriptively. Means were calculated from Likert scales (such as self-perceived knowledge) and used to compare groups. To examine differences in self-reported usage rate between socio-demographic factors (gender, age, native language, medication use, numbers of medications, and educational level), group comparisons were conducted using Chi-square to compare proportions. In addition, Mann–Whitney U-tests and Kruskal–Wallis tests to compare continuous variables (knowledge). The significance level was set to $p \leq 0.05$. Free-text answers were categorized using manifest content analysis [29].

The qualitative interviews were analyzed in a thematic analysis [30]. One researcher transcribed the interviews (NE), and another listened to all of the interviews (CLP) and read the transcripts. The interviews were coded by both researchers individually using the NVivo software (Version 12 Plus, QSR International Pty Ltd. 2019). The codes were then merged into themes by applying the TAM as an analytical framework in consensus discussions.

Table 2
The study population answered two questions about reading and using the QPL during the encounter with the pharmacist, see Appendix B. Seven combinations of reading and/or using the QPL were identified for the study population, including missing data. Based on these combinations, a grouping of the respondents was done for the following data analysis. The analysis groups are shown in the right-hand columns (Read the QPL/ Did not read the QPL; Patients' self-reported use of the QPL/ Patients' self-reported non-use of the QPL).

Combinations of reading and/or using the QPL.	n	Read the QPL	Did not read the QPL	Patients' self -reported use of the QPL	Patients' self-reported nonuse of the QPL
1: Read the QPL and used the QPL	70	70	-	70	
2: Read the QPL but did not use the QPL	56	56	-	-	56
3: Read the QPL but missing data on question about use	1	1	-	-*	-*
4: Did not read the QPL and did not use QPL	8	-	8	-	8
5: Did not read the QPL and missing data on question about using the QPL	8		8	-	8 * *
6: Did not read the QPL but reported using the QPL	1	-	1	1	
7: Missing data on reading the QPL but reported using the QPL	1	-	-	1	-
Total	145	127	17	72 * **	72 * **

QPL: question prompt list
*excluded from analyses regarding use
* * included in the group that did not use the QPL, because they had answered the rest of the questionnaire.
* ** the total number in the analyses regarding use do not add up to 145 because one participant (combination no. 3) was excluded in this categorization.

Table 3
Questions about perceived ease of use and perceived usefulness and benefits among patients reporting reading the QPL (n = 127).

Question	Strongly disagree/Disagree (n; %)	Neutral (n; %)	Agree /Strongly Agree (n; %)	Not relevant	Mean (SD)
Perceived ease of use					
I feel that the time it took to read the questions was reasonable	7 (6.0)	6 (5.2)	100 (86.3)	3 (2.6)	4.5 (.9)
I think the questions were easy to understand	5 (4.3)	3 (2.6)	107 (91.4)	2 (1.7)	4.7 (.8)
Perceived usefulness (benefits)					
The list prompted me to ask the pharmacist more questions	32 (27.1)	25 (21.2)	50 (42.3)	11 (9.3)	4.0 (1.3)
I feel that the questions helped me to identify what I could ask	15 (12.8)	13 (11.1)	83 (71.0)	6 (5.1)	4.0 (1.3)
I already knew that I could get answers to these questions at the pharmacy	12 (10.1)	14 (11.8)	91 (76.5)	2 (1.7)	4.2 (1.1)
I would like to use the list in future encounters	11 (9.3)	24 (20.3)	77 (65.2)	6 (5.1)	4.0 (1.2)

One person had missing data on reading the QPL and was excluded from the analysis, in addition to the 17 stating not having read the QPL. Missing data for Q1 (n = 11); Q2 (n = 10); Q3 (n = 9); Q4 (n = 10); Q5 (n = 8); Q6 (n = 9).

2.7. Ethical consideration

Ethics approval was provided by the Swedish Ethical Review Authority (Dnr 2020–00233). Informed consent was requested before the observations started, and all participants signed a written consent form. Patients being interviewed gave consent to being recorded. Participation was voluntary, and data confidentiality was ensured. All data were stored following encryption by Veracrypt®.

3. Results

3.1. Questionnaire

3.1.1. Study population

A total of 734 patients were asked to participate in the main study, of which 190 agreed (response rate 26%). Reasons for declining were lack of time, language difficulties, and lack of interest. In this sub-study, 145 questionnaires were analyzed. Nineteen questionnaires were excluded because data were missing, and 26 were excluded because they did not fulfill the inclusion criteria. The majority were female (63.2%), native Swedish speakers (80.6%), and had completed university or college education (58.0%), see Table 1.

3.1.2. Self-reported acceptance and use of the QPL

Seventeen patients did not accept (did not read) the QPL. Overall, 127 (88.2%) reported they had read the QPL, and 72 (50.0%) said they had used it (Table 2). The most common reasons for not using the QPL were having been taking the medication for a long time (n = 42, 58.3%), already knowing the answers (n = 33, 45.8%), not seeing the QPL (n = 7, 9.7%), or not having time (n = 8, 11.1%).

3.1.3. Factors impacting on self-reported use of the QPL

There was a relationship between collecting a new medication and more frequent use of the QPL ($X^2(1, n = 142) = 4.7$, $p = 0.03$). In addition, native Swedish speakers were associated with less self-reported use ($X^2(1, n = 143) = 6.8$, $p = 0.009$). No associations were seen for level of education, gender, age-group, or number of medications used.

3.1.4. Perceived ease of use and perceived usefulness (benefits)

Table 3 outlines the perceived ease of use and perceived usefulness (benefits).

3.1.4.1. Perceived ease of use. Of the patients reporting reading the QPL (n = 127), most (n = 100; 86.3%) found the time needed to be sufficient and 91.4% (n = 107) thought the questions were easy to understand (see Table 3).

3.1.4.2. Perceived usefulness (benefits)

*3.1.4.2.1. **Question-asking behavior in the encounter**.* Overall, 42.3% (n = 50) of patients reading the QPL agreed that it prompted them to ask more questions (see Table 3). Of the patients reporting using the QPL, 65.3% (n = 47) said they asked more questions as a result. Seventy-one percent (n = 83) felt that it helped to identify questions to

Table 4
Patients' perceived level of knowledge about medication after the meeting with a pharmacist. Reported for the whole sample and according to self-reported usage of the QPL.

As a result of your conversation/encounter today, to what degree do you feel that you:	Much less than before/Less than before (n; %)			Same degree as before (n; %)			Better, More than before, Much better, much more than before (n;%)		
Question	All N = 145	Used* QPL N = (72)	Did not use** QPL N = (72)	All N = 145	Used* QPL N = (72)	Did not use** QPL N = (72)	All N = 145	Used* QPL N = (72)	Did not use** QPL N = (72)
….know how to take your medicine?	3 (2.2)	2 (2.8)	1 (1.5)	87 (63.5)	29 (40.8)	58 (89.2)	47 (34.3)	40 (56.3)	6 (9.2)
….know when to take your medicines?	3 (2.2)	2 (2.9)	1 (1.5)	92 (67.2)	35 (50.0)	56 (84.8)	42 (30.7)	33 (47.1)	9 (13.6)
…. know what to do if you get a side effect from your medicines?	4 (3.2)	3 (4.8)	1 (1.6)	82(65.6)	28 (44.4)	56 (88.9)	39 (31.2)	32 (50.8)	6 (9.5)
….know that your medicines are compatible?	3 (2.4)	3 (4.8)	-	89 (71.2)	36 (57.1)	53 (86.9)	33 (26.4)	24 (38.1)	8 (13.1)
….know when and how you will get an effect from your medicines?	2 (1.5)	2 (2.9)	-	95 (71.4)	38 (55.9)	57 (89.1)	36 (27.1)	28 (41.2)	7 (10.9)
….know what questions you can ask the pharmacist about your medicines?	2 (1.5)	1 (1.4)	1 (1.5)	74 (54.0)	27 (38.0)	47 (72.3)	61 (44.5)	43 (60.6)	17 (26.2)

*Patients answering yes to Q: I used the list with the "dare-to ask" questions when talking to the pharmacy staff. Based on the categorisation in Table 2. **Patients answering no to Q: I used the list with the "dare-to ask" questions when talking to the pharmacy staff. Based on the categorisation in Table 2.
Missing data for all: Q1 (n = 5); Q2 (n = 5); Q3 (n = 5); Q4 (n = 6); Q5 (n = 5); Q6 (n = 5).
Not relevant/Don't know all: Q1 (n = 3); Q2 (n = 3); Q3 (n = 15); Q4 (n = 14); Q5 (n = 7); Q6 (n = 3).
Missing data for those using the QPL: Q1 (n = 1); Q2 (n = 1); Q3 (n = 1); Q4 (n = 2); Q5 (n = 1); Q6 (n = 1).
Not relevant/Don't know for those using the QPL: Q1 (n = 0); Q2 (n = 1); Q3 (n = 8); Q4 (n = 7); Q5 (n = 3); Q6 (n = 0).
Missing data for those not using the QPL: Q1 (n = 4); Q2 (n = 4); Q3 (n = 4); Q4 (n = 4); Q5 (n = 4); Q6 (n = 4).
Not relevant/Don't know for those not using the QPL: Q1 (n = 3); Q2 (n = 2); Q3 (n = 3); Q4 (n = 7); Q5 (n = 4); Q6 (n = 3).

ask. Finally, 65.2% (n = 77) of the patients who read the QPL stated that they would like to use it in future encounters.

3.1.4.2.2. Perceived level of knowledge about medication after the encounter. For the perceived level of knowledge regarding medication use, see Table 4. Mann–Whitney tests indicated that self-reported users of the QPL scored higher on all knowledge questions (see Appendix D). Associations were also seen for picking up a new medication – where new users of a medication reported higher perceived knowledge (for 4 knowledge items) – and with not having Swedish as the mother-tongue (for all knowledge items). A Kruskal–Wallis H-test showed a statistically significant difference in knowledge between different age groups, see Appendix D, where younger patients (18–35 years), and, to a slight degree, middle-aged patients (51–65 years) felt they had better knowledge compared to age group of 36–50 years and the oldest age group (>66 years). No difference was seen for gender, education, or number of medications taken.

3.2. Qualitative interviews with patients

Fourteen patients were interviewed, including thirteen females and one male. Five were 20–30 years old, eight were 66–80 years old, and one was over 80. Ten used prescription medications regularly. The interviews were between 6 and 20 min long. Due to recruiting difficulties, saturation was not reached. The thematic analysis resulted in four themes, as described below. Informed by the TAM, accepting the pharmacist as an information provider and having expectations of information about medications was seen as prerequisites for the usefulness of the QPL.

3.2.1. Usefulness of the QPL – accepting the pharmacist as a provider of information

The participants perceived that both the pharmacist and the prescriber had a responsibility for informing the patient regarding the medication. However, they saw their doctor as mainly responsible, and some preferred receiving information there because the doctor knew more about the patient and was the one who made the prescribing decision. However, patients perceived that doctors did not always have the opportunity to provide information:

> *"You can actually ask about things like how to twist them if you want to break the tablets or if you should eat them whole like that. It is really important if it has some disgusting taste, then I could ask him (the pharmacist). The doctors *sigh* they are in such a rush with everything."* (Patient 4)

Some participants felt they have a responsibility to look up information themselves rather than relying solely on doctors or pharmacists.

3.2.2. Usefulness of the QPL - Expectations of information when collecting prescribed medication

The participants perceived that the pharmacist often took the initiative and gave all the necessary information. The participants expressed expectations of a friendly and knowledgeable meeting with the pharmacist who would provide counselling tailored for the patient. Some expressed that they asked for information, but it was also perceived that one did not have to because the pharmacist or doctor provided the necessary information.

3.2.3. The usefulness and perceived benefits of the QPL in the meeting with the pharmacist

The interviewees perceived that they asked more questions because of the QPL and that they received more information regarding their medications. However, some participants saw themselves as knowledgeable and did not want to use the QPL. The QPL functioned as a reminder of what one could ask, and sometimes acted as an eye-opener:

Table D.1
Mann Whitney U tests describing patients perceived level of knowledge about medicines after the pharmacists meeting between for various sub-groups (Self-reported users, self-reported nonusers; Filling a new prescription (medic**ation**),No new prescription (medic**ation**); Swedish, other language).

Question	Self-reported users; self-reported nonusers	Median; mean *self-reported users*	Median; mean *Self -reported nonusers*	Filling a new prescription (medicine); No new prescription (medicine)	Median;mean *new use of medic**ation***	Median; mean *No new medication*	Swedish; other language	Median; mean $_{Swedish}$	Median; mean $_{other\ language}$
(Q1)….know how to take your medicines?	$U(N_{self\text{-}reported\ users}= 71, N_{self\text{-}reported\ nonusers}=65)= 1275.0, z = -5.27, p = <.001$	4.00;3.83	3.00;3.12	$U(N_{new\ medicine} = 62, N_{no\ new\ medicine}=73)= 1688.0, z = -2.95, p = .003$	3.50;3.71	3.00;3.33	$U(N_{Swedish} = 110, N_{other\ language}=26)= 1999.0, z = 3.67, p = <.001$	3.00;3.37	5.00;4.04
(Q2)….know when to take your medicines?	$U(N_{self\text{-}reported\ users}= 70, N_{self\text{-}reported\ nonusers}=66 =1561.0, z = -3.93, p = <.001$	3.00;3.77	3.00;3.20	$U(N_{new\ medicine} = 63, N_{no\ new\ medicine} =72 =1713.5, z = -2.94, p = .003$	3.00;3.73	3.00;3.29	$U(N_{Swedish} = 109, N_{other\ language}=27)= 2054.0, z = 3.83, p = <.001$	3.00;3.35	5.00;4.07
(Q3)…. know what to do if you get a side effect from your medicines?	$U(N_{self\text{-}reported\ users}=63, N_{self\text{-}reported\ nonusers}=63)= 1231.5, z = -4.40, p = <.001$	4.00;3.71	3.00;3.11	$U(N_{new\ medicine} = 57, N_{no\ new\ medicine} =68)= 1611.0, z = -1.92, p = .054$	3.00;3.54	3.00;3.32	$U(N_{Swedish} =100, N_{other\ language}=26)$ 1831.0, z = 3.81, p = <.001	3.00;3.28	4.00;3.96
(Q4)….know that your medicines fit together?	$U(N_{self\text{-}reported\ users}= 63, N_{self\text{-}reported\ nonusers}=61)= 1505.0, z = -2.63, p = .008$	3.00;3.57	3.00;3.20	-	-	-	$U(N_{Swedish} = 99, N_{other\ language}=25)$ 1785.0, z = 4.27, p = <.001	3.00;3.24	4.00;4.00
(Q5)….know when and how you get effect from your medicines?	$U(N_{self\text{-}reported\ users}= 68, N_{self\text{-}reported\ nonusers}=64)= 1578.5, z = -3.45, p = <.001$	3.00;3.57	3.00;3.17	$U(N_{new\ medicine} = 59, N\ N_{no\ new\ medicine} =72 =1560.0, z = -3.27, p = <.001.$	3.00;3.63	3.00;3.21	U(NSwedish = 106, Nother language=26)= 1820.0, z = 3.18, p = .001.	3.00;3.29	4.00;3.81
(Q6)….know what questions you can ask the pharmacist about your medicines?	$U(N_{self\text{-}reported\ users}= 71, N_{self\text{-}reported\ nonusers}=65)= 1508.5, z = -3.85, p = <.001$	4.00;3.89	3.00;3.35	-	-	-	$U(N_{Swedish} =110, N_{other\ language}=26)= 1992.0, z = 3.43, p = <.001$	3.00;3.54	4.00;4.08

Table D.2
A Kruskal-Wallis H test describing patients perceived level of knowledge about medicines after the pharmacists meeting between for the various age-groups.

Question	Kruskal-Wallis H test	Mean; median (age groups years)
(Q3)…. know what to do if you get a side effect from your medicines?	(N = 126), $\chi 2(3) = 8.73$ p = 0.033	18–35 (n = 26): 3.50;3.0 36–50 (n = 19): 3.11;3.0 51–65 (n = 31): 3.74;3.0 66 > (n = 50): 3.30;3.0
(Q5)….know when and how you get effect from your medicines?	(N = 132), $\chi 2(3) = 10.93$, p = 0.012	18–35 (n = 26): 3.63;3.0 36–50(n = 19): 3.16;3.0 51–65(n = 35): 3.69;3.0 66 > (n = 52): 3.17;3.0
(Q6)….know what questions you can ask the pharmacist about your medicines?	(N = 136) $\chi 2(3) = 10.41$, p = 0.015	18–35 (n = 26): 3.88;4.0 36–50(n = 20): 3.45;3.0 51–65(n = 35): 3.91;4.0 66 > (n = 55): 3.42;3.0

"I didn't think, it was a question I wondered about, but I don't think I would have asked it in the pharmacy. Instead in such cases I would have contacted the person who prescribed the medication. I know it was there (in the list)…Then I realized that you can actually ask for advice also at the pharmacy." (Patient 1)

The part of the QPL described as most useful was the "Best usage" part, while the "Follow up" part was appreciated for addressing side-effects. Participants desired more information regarding side effects, and they perceived that pharmacist had a lot of knowledge about this. The "My medicines" part was described as the least useful. The pharmacist often talked about generic substitutions, and if any medication changed the prescriber would provide that information.

3.2.4. The perceived ease of use of the QPL

There was a wish for the questions to be shorter and with more symbols to make it more readable in a brief encounter. The colors were appreciated with different colors for different types of questions. Many waiting in line, i.e., time constraints, and language difficulties were mentioned as barriers. A potential improvement for the ease of use would be the possibility to read the QPL beforehand. It was suggested it could be available at the queue ticket machine or in the prescriber's office because that would allow more time to think.

3.3. Free-text comments in the questionnaire

The participants could express their opinions in free-text, which 27 did. Positive remarks were made, e.g., good questions/length/learned something new, but some wanted it shorter. One person mentioned a more specific list with detailed side effects, a question about when the medication stops working, and translations into other languages, as well as having the QPL in other places in the pharmacy because one might reflect on the questions while waiting.

4. Discussion and conclusion

4.1. Discussion

The objective of this study was to investigate the usage of a QPL by patients during encounters at community pharmacies. The study aimed to examine factors behind usage rate of the QPL and to evaluate its perceived usefulness. In relation to the TAM, the participants were positive to using the QPL both in terms of ease of use and usefulness (benefits). In this study, half of the patients self-reported the use of the QPL, indicating a reasonable usage rate for the pharmacy context. According to the TAM, because many patients appear to have had positive experiences with the QPL, and these findings suggest a potential for patients in community pharmacies to accept the QPL. This is interesting because, in contrast to a physician's private office, a pharmacy setting can be characterized by high levels of noise and disruption.

The QPL can be useful in many ways, including as a checklist for one's own knowledge. In our study, about 40% of the patients reading the list agreed with the statement that they asked more questions. This is similar to cancer patients where 41% reported that a QPL helped them ask their clinicians more questions [16]. Sixty-five percent could imagine using the QPL again, which is lower compared to the above cancer population where 80% probably or definitely would use it again [16]. It is, however, easy to imagine that having a serious disease might make patients more active in counselling.

A previous qualitative study in health care highlighted empowerment and how the QPL helped patients understand the impact of asking questions [19]. The aspect of empowerment might be why people filling a new prescription as well as non-native Swedish speakers reported more frequent use of the QPL in our study. Having written suggestions might have enabled these sub-populations to ask more questions. A new medication could increase the need for information, and in parallel with this a previous study saw no need for counseling on refill prescriptions [31].

Regarding the contents, counselling in pharmacies often focuses on medication use rather than medication safety, even though safety issues are a major concern for patients [31–33]. The desire to learn more about side effects was also discussed in our interviews and was an appreciated part of the QPL. The QPL might be a way of increasing counselling on medication safety and addressing concerns.

A previous study saw no effect on self-efficacy on asking questions with the use of a QPL for palliative patients [15]. However, the present study saw an increased self-perceived knowledge, and it can be hypothesized that this could improve self-efficacy. According to theory, self-efficacy is based on, among other things, performance accomplishments (previous success or failure) and verbal persuasion (others' reassurance) [34]. If a patient reaches higher self-perceived knowledge, this could strengthen the patient's sense of accomplishment. A QPL could also facilitate verbal persuasion, such as encouragement. Improved self-efficacy in managing medications could in turn potentially promote medication adherence [35].

This study focused on the patients' experiences. A Dutch study found good concurrence between patients' (recent) experiences and video observations, arguing that patient's perceptions of the quality of a meeting can be accurate [7]. Both patients and pharmacists are in general dissatisfied with the counselling being provided, and patients need to be more involved in the counselling process [36]. In our interviews, however, no immediate dissatisfaction was expressed and pharmacists were described as knowledgeable.

4.1.1. Strengths and limitations

One strength of this study is that it combined questionnaires and interviews, thus exploring the findings in more depth. Recruiting and conducting qualitative interviews in pharmacies was, however, challenging, and patients wanted to leave quickly, perhaps also out of fear of COVID-19. Saturation was not reached, but the qualitative data complemented the data from the questionnaire. The different methods thus validated the findings and can be seen as a between-methods triangulation [23].

It is possible that our participants showed an interest in using the QPL out of social desirability and the wish to comply with the study. The participants might also have been more interested in counselling than the general population. The recruitment took place in only seven pharmacies; thus, extrapolation to the general Swedish population should be done keeping these limitations in mind. Our sample aligns with the gender distribution of medication users in the general Swedish population. However, our sample was slightly younger than the overall population, where more are aged 80 + . This is expected because the very old do not handle their own medication to the same extent as younger age groups.

4.1.2. Future research

Our findings indicate that patients appear to find a QPL in community pharmacy useful and easy to use. Future studies could examine active use over time and improved relevance for chronic medication users. Patients often visit the pharmacy more often than they visit the prescriber, and considering the ambiguity patients have regarding the pharmacist's role and how concerns often play a significant role in medication non-adherence [37], a QPL could make it easier to raise concerns with the pharmacist. For example, an idea could be a QPL focusing on adherence and motivation. Additionally, further research is warranted to investigate potential outcomes of a QPL in pharmacies, for example, validating an instrument for measuring self-efficacy.

5. Conclusions

The implementation of a QPL in community pharmacies can contribute to increased patient knowledge about medications. In the context of a short encounter in a hectic environment, a QPL helps to keep the focus on medication counseling. Also, the TAM framework can be applied to understand patients' acceptance of a QPL. In our study, patients appeared to be willing to use a QPL, and several also stated that they asked more questions. The QPL increased their awareness of what one could ask the pharmacist about. A QPL might therefore be a useful tool in community pharmacies, especially for those picking up new medications and for non-native speakers.

Practice implications

Implementing a QPL in community pharmacies can be a straightforward strategy for enhancing patient engagement. This could possibly be generalized to other settings where patient involvement is desirable during brief encounters, thus making a QPL useful in more contexts than just the doctor-patient relationship. Providing patients with a tool to actively participate in counseling could help in addressing the patients' concerns and identifying medication-related issues, thus leading to improved medication use. Moreover, a QPL can help clarify the role of pharmacists and raise expectations regarding counseling in community pharmacies.

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CRediT authorship contribution statement

Christina Ljungberg Persson: Methodology, Formal analysis, Investigation, Resources, Data curation, Writing – original draft, Writing – review & editing, Supervision, Project administration. **Ateka Al-Nuaimi:** Formal analysis, Investigation, Data curation, Writing – review & editing, Visualization. **Nahid Esmaeili:** Formal analysis, Investigation, Data Curation, Writing – review & editing. **Karin Svensberg:** Conceptualization, Methodology, Formal analysis, Investigation, Resources, Writing – original draft, Writing – review & editing, Visualization, Supervision, Project administration, Funding acquisition.

Declaration of Competing Interest

Declarations of interest: none. The other authors declare that they have no competing interests.

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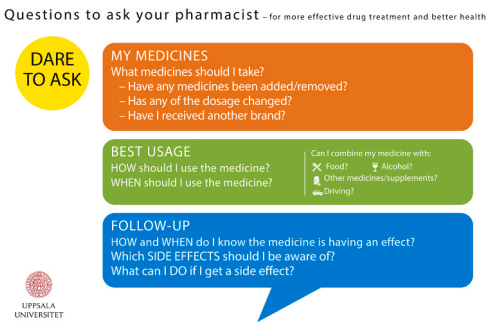
Appendix A. Question Prompt List (QPL) used in the study [26]



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Appendix B. Questionnaire to patients about the QPL

Part 1. Patients' acceptance and of the QPL.

Initial acceptance
I read the list with "dare-to ask" questions (the QPL)

- Yes/No

Usage rate
I used the list with the "dare-to ask" questions when talking to the pharmacy staff

- Yes/No

Reasons for not reading (accepting) or using the QPL
[If no to question 1/2] - Why did you not use/read it (the QPL)?

- I did not see the questions
- I did not have time
- The pharmacist never asked me
- I do not think pharmacies are the right place to discuss medicines
- I think it was difficult to understand the questions
- I have used medicines for so long so I do not need information
- I feel that I already knew the answers
- Other

Part 2. User-friendliness and impact on asking questions.
Perceived ease of use
I feel that the time it took to read the questions was sufficent

o Strongly disagree; Disagree; Neutral; Agree; Strongly Agree

Perceived ease of use
I think the questions were easy to understand

o Strongly disagree; Disagree; Neutral; Agree; Strongly Agree

Perceived usefulness and benefits
The list made me ask more questions to the pharmacy staff

o Strongly disagree; Disagree; Neutral; Agree; Strongly Agree

Perceived usefulness and benefits
I feel that the questions helped me to know what I could ask

o Strongly disagree; Disagree; Neutral; Agree; Strongly Agree

Perceived usefulness and benefits
I already knew that I could get answers to these questions at the pharmacy

o Strongly disagree; Disagree; Neutral; Agree; Strongly Agree

Perceived usefulness and benefits
I would like to use the list in future encounters

o Strongly disagree; Disagree; Neutral; Agree; Strongly Agree

Part 3. Perceived level of knowledge about medicines after the encounter with the pharmacist.
Perceived benefits
As a result of your conversation/encounter today, to which degree do you feel that you:

o ….know how to take your medicines?
  o Much less than before; Less than before; Same degree as before; Better/More than before; Much better/much more than before

o ….know when to take your medicines?
  o Much less than before; Less than before; Same degree as before; Better/More than before; Much better/much more than before

o …. know what to do if you get a side effect from your medicines?
  o Much less than before; Less than before; Same degree as before; Better/More than before; Much better/much more than before

o ….know that your medicines fit together?
  o Much less than before; Less than before; Same degree as before; Better/More than before; Much better/much more than before

o ….know when and how you get effect from your medicines?
  o Much less than before; Less than before; Same degree as before; Better/More than before; Much better/much more than before

o ….know what questions you can ask the pharmacist about your medicines?
  o Much less than before; Less than before; Same degree as before; Better/More than before; Much better/much more than before

Perceived ease of use
Perceived usefulness and benefits
Do you have other ideas / views regarding the < < dare-to ask question > > list? Something missing /suggestions for improving the list?

Part 4. Sociodemografic factors.
Today I collected at least one new medicine
o Yes/No
Gender
o Male/Female

(*continued on next page*)

(*continued*)

Part 1. Patients' acceptance and of the QPL.
How old are you? o 18–35; 36–50; 51–65; 66–80; > 81; Did not want to answer What is your highest completed education o Public school; High school; University/College Is your mother tongue Swedish? o Yes/No How many different prescription medications do you take regularly each day? o None; 1–2; 3–4; > 5

Appendix C. Interview guide

Themes in bold, with suggested questions below each theme.

- **How did you perceive the meeting with the pharmacist today?**
- **What do you usually ask the pharmacist about?**
- **Did you notice this? *Showing the list***
- **How did using the list work for you in the conversation with the pharmacist?**
  - o How did it affect the conversation - was something (if anything) different?
  - o Did you perceive that it was easier to ask the pharmacist questions with the list?
    - ■ Difficult/easy to use?
    - ■ Did the list help/disrupt the conversation? No difference?
    - ■ Time use
    - ■ Did you know that you could ask these questions at the pharmacy?
  - o Did you perceive that you received more information about your medicines?
  - o Why/why not was the list used?
  - o Which advantages/disadvantages do you see with the list?
  - o Would you have wanted to have the list before the meeting? On your phone?

- **What is your overall impression of the list?** **Questions and design of the list, go through item by item* :*
  - o What are your thoughts around: The content? The length of the questions?
  - o Which questions do you think were most important in the list?
  - o What can be removed? Comments about the language?
  - o How can the list be improved?

- **What do you think about the pharmacy as a place for counselling about medicines?**
  - o Who should give advice on medicines?
  - o Whose responsibility is it to initiate the counseling?
    - ■ How can the pharmacist contribute better?
    - ■ How can patients be more active in the meeting with the pharmacist?
  - o How do you want to receive counseling on medicines in pharmacies?
    - ■ What kind of barriers/ opportunities for counseling in pharmacies do you perceive?
    - ■ Do you have any thoughts about how counseling in pharmacies can be improved?

Appendix D. Mann Whitney U tests Kruskal-Wallis H test

See Table D.1, Table D.2.

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