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Development and Testing of a Question Prompt List for Common Hand Conditions: An Exploratory Sequential Mixed-Methods Study

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Abstract

Purpose—A question prompt list (QPL) is a tool that lists possible questions a patient may want to ask their surgeon. Its purpose is to improve patient-physician communication and increase patient engagement. Although QPLs have been developed in other specialties, one does not exist for hand conditions. We sought to develop a QPL for use in the hand surgery clinic using a mixed-methods design.

Methods—We drafted a QPL based on prior work outside of hand surgery and then used an exploratory sequential mixed-methods design (both qualitative and quantitative methods) to finalize the QPL. Qualitative evaluation included both a written questionnaire completed by a patient advisory board, hand therapists, and hand surgeons, as well as cognitive interviews conducted with clinic patients using the tool. Revisions to the QPL were made after each phase of qualitative analysis. The final QPL was then evaluated quantitatively using the system usability score (SUS) questionnaire to assess its usability.

Results—A patient advisory board consisting of 6 patients, 5 hand therapists, and 6 hand surgeons completed the written questionnaire. Thirteen patients completed a cognitive interview of the QPL. We completed a content analysis of the qualitative data and incorporated the findings into the QPL. Twenty patients then reviewed the final QPL pamphlet and completed the SUS questionnaire. The resulting SUS score of 78.8 indicated above-average usability of the QPL tool.

Conclusions—The QPL developed in this study, from the perspective of multiple stakeholders, provides a usable tool to engage and prompt patients in asking questions during their visit with their hand surgeon with the potential to improve communication and patient-centered care.

Clinical relevance—This study provides clinicians with a QPL developed for use in the hand surgery clinic setting, aimed at facilitating more thorough patient-provider discussion.

Keywords

Hand surgery; patient satisfaction; patient-physician communication; quality; question prompt list

ENSURING THAT PATIENTS receive and understand the appropriate information regarding their care helps establish expectations and improve patient-centered care. Asking questions during a clinic visit has been shown to increase the quality of information that a patient receives.^{1,2} As most hand surgeons have experienced, some patients may not know what questions to ask (often asking, “What questions should I ask?”). Patients with limited health literacy are particularly less likely to ask their health care provider questions during their visit.³

A question prompt list (QPL) is a tool to help encourage patients to ask questions and potentially reduce health care disparities related to patient-physician communication.⁴ A QPL is a list of suggested questions for the patient to consider asking during a visit. Use of this tool has been shown to engage patients and increase question-asking in other fields, such as oncology.⁵ The QPLs have also been shown to increase patient satisfaction and decrease anxiety.^{6,7} Whereas the use of QPLs has been explored in other fields, relatively few studies evaluate their use in surgery.^{6,8}

For patients considering surgery, QPLs also have the potential benefit of improving communication to better establish a patient’s preoperative expectations, which have been shown to have an impact on post-operative functional outcomes, quality of life, and satisfaction in orthopedic surgery.^{9–13} Setting these expectations in the clinic visits prior to surgery is critical because over 80% of patients identify their surgeon as the major source of their preoperative expectations.¹⁴

This study sought to develop a QPL applying a mixed-methods design for use as a tool to engage patients presenting to the hand surgery clinic to increase question-asking, improve patient-centered care, and set appropriate expectations.

METHODS

An institutional research board–approved, exploratory sequential mixed-methods study was designed to obtain both qualitative and quantitative feedback for use in developing a QPL for patients presenting to the hand surgery clinic. Figure 1 summarizes the sequence of QPL development, qualitative evaluation steps, and the final quantitative evaluation step.

Exploratory sequential mixed-methods design

QPL draft development with qualitative analysis: First, an initial QPL was developed by the research team based on a thematic analysis of previously published QPLs, primarily in the oncology and palliative care literature.^{1,4,6–8,15–25} We first identified relevant domains and then questions for hand conditions. Questions in each domain were written based both on literature review and all of the authors’ experiences with questions asked by patients in the clinic setting (senior surgeon, fellow, residents, and researcher). The

questions were designed to be generalizable and applicable to any diagnosis evaluated in a hand surgery clinic, with a focus on both surgical and nonsurgical treatment options.

Next, qualitative feedback was obtained by administering an electronic, free-response questionnaire containing questions about each of the 4 domains of the initial QPL sequentially to 3 groups—patients, hand surgeons, and hand therapists. The QPL was revised after each group completed the questionnaire to limit redundancy in feedback.

The questionnaire was first administered to a previously established Patient Advisory Board consisting of 6 hand clinic patient volunteers committed to guiding tool and study development at our hand surgery center. This group of volunteers included 4 men and 2 women who ranged in age from 35 to 82 years (average, 66 years). All had previously undergone surgical or nonsurgical treatment in our hand surgery clinic for conditions including carpal tunnel syndrome, trigger finger, hand or wrist fracture, tendon laceration, and finger amputation. The questionnaire was then administered to 6 fellowship-trained hand surgeons, and finally to 5 certified hand therapists. After each round of qualitative feedback, the written responses were reviewed by the research team and the QPL modified. A consensus was reached among all authors whether to add, remove, or rephrase questions based on the responses.

Qualitative feedback—cognitive interview: After the 3 rounds of written qualitative feedback concluded, the revised QPL was utilized in the setting of cognitive interviews to obtain further qualitative feedback. Cognitive interviewing is a technique developed to learn patients' opinions by asking them to think aloud while reviewing the tool.²⁶ Cognitive interviewing helps improve patient educational materials by evaluating how language is interpreted by patients.^{27–29} After obtaining informed consent, hand clinic patients participated in cognitive interview sessions, which involved a series of open-ended questions eliciting feedback on the QPL. The cognitive interview questions were aimed at determining whether questions should be added/removed or if the wording was difficult to understand. Patients were encouraged to think aloud while reading the handout and to convey any feedback they had regarding language, formatting, and general flow. Notes were taken by the interviewer to document patient responses and the interviews were transcribed. Interview transcriptions were reviewed and coded using the constant comparative method by researchers with prior experience and training in content analysis (A.K.R. and S.L.E.). The constant comparative method is a qualitative analytic technique used in cognitive interview data in which analysts perform coding and analysis of the data in real time to inform future interviews.²⁹ Themes were developed based on these codes to inform changes to the tool.

Quantitative feedback—SUS: Lastly, the final, revised QPL, based on both phases of qualitative evaluation, was evaluated quantitatively with the System Usability Scale (SUS). The SUS is a validated, 10-item questionnaire in which scores range from 0 to 100 and a score of 68 or greater signifies above-average usability.^{30,31} After reviewing the QPL, 20 patients were asked to complete the SUS, and the scores were recorded and averaged to determine the usability score of the QPL. A sample of 20 patients was chosen based on prior literature which suggests that 6 to 12 participants is adequate for usability testing.^{32–34}

RESULTS

QPL development

Thematic analysis of previously published QPLs^{1,4,6-8,15-25} identified 4 question domains—Diagnosis, Treatment Options, Prognosis, and Support. Within each domain, a series of questions were written based on both literature review and clinical experience, resulting in the initial QPL shown in Table 1.

Qualitative feedback—written questionnaire: The electronic, written questionnaire was administered to an expert panel consisting of a Patient Advisory Board, certified hand therapists, and hand surgeons, with revisions to the QPL following each round of feedback. The demographics and feedback for each phase of expert panel review are summarized in Table 2.

Qualitative feedback—cognitive interview: Thirteen patients completed cognitive interviews, at which point they were discontinued owing to redundant responses with no new suggested changes. Demographic characteristics of these patients are found in Table 3. Three major themes were identified based on the cognitive interviews: (1) content of handout; (2) delivery of handout; (3) design of handout. Most patients felt that the QPL adequately covered all topics and that no questions needed to be added. In terms of delivery, many patients expressed a desire to receive the QPL earlier to have more time to read it. Patients also indicated that the purpose of the QPL was not clear. Based on this feedback, the QPL's title page and purpose statements were changed to emphasize what the QPL should be used for. A number of patients also expressed concern that the domain title "Prognosis" would be confusing to some patients, so this was changed to "Outcomes." The QPL pamphlet's formatting and visual layout were modified based on patient feedback about design. Common comments included the amount of text on each page, shortening question length to fit on 1 line, and adding more images. Revisions made on this feedback resulted in the final QPL (Table 4) and the final pamphlet for use of the QPL in the clinic setting (Fig. 2).

Quantitative feedback—SUS: Twenty hand surgery clinic patients completed the SUS questionnaire after reviewing the final pamphlet in Figure 2. Demographic characteristics for these patients can be found in Table 3. The average usability score was 78.8, and 18 patients (90%) scored it above the target score of 68 or greater, signifying that the final QPL had above-average usability.^{30,31}

DISCUSSION

Although QPLs have been developed in a variety of other medical specialties,^{1,4,6-8,15-25} currently none exist for use with hand surgery patients. We present the development of such a QPL to provide patients with a tool to optimize the questions asked and information received during their clinic visit. Using qualitative methods to obtain feedback from patients, hand surgeons, and hand therapists, the final QPL represents questions that all stakeholders considered potentially beneficial. The SUS score of 78.8 suggests that the final result is a tool that is usable in the clinic setting. The Flesch Kincaid Reading Grade Level of the final QPL is 4.8. This is below the maximal sixth to 8th grade readability level recommended by

the Centers for Disease Control and Prevention, Institute of Medicine, and American Medical Association.³⁵

Based on these findings, we propose our QPL as a user-friendly means of increasing patient activation and engagement in their care. The QPLs have previously been demonstrated to increase the number of questions that patients ask.^{16,36,37} Question asking has been shown to improve the amount and quality of information that physicians deliver.^{1,2,16,38} Furthermore, communication tools like QPLs have been shown to improve patient involvement in the shared decision-making process and in providing realistic expectations about anticipated outcomes.^{2,39} For example, a randomized controlled trial looking at the use of a QPL in the oncology clinic found that patients and caregivers receiving the QPL prior to their visit asked twice as many questions and discussed 23% more issues during the clinic encounter. Patients receiving the QPL were also less likely to report having unmet information needs compared with control patients who did not receive the QPL, which the authors suggest indicates a more thorough patient-physician discussion. Whereas much of the current literature evaluates the use of QPLs in the oncology clinic setting, where patient information needs and the gravity of decision making are quite different than those in a hand surgery clinic, the basic tenants of informed consent, shared decision-making, and managing patient expectations still apply.

Asking more questions during a clinic visit is also an attribute of an activated patient, someone who is willing and able to play an active role in their health care.^{3,40} Studies have shown that activated and engaged patients have improved health care outcomes and satisfaction, as well as lower health care costs.⁴⁰⁻⁴² For example, patients with a higher activation score are more likely to have a body mass index, hemoglobin A1c, blood pressure, and/or cholesterol in the normal range than patients with lower activation scores.⁴⁰ Asking questions has been identified as a form of active patient participation.⁴³ Encouraging patients to ask questions with tools like a QPL may be 1 means of fostering patient activation in the hand surgery clinic setting and potentially improving health care outcomes.

Furthermore, multiple studies have shown that minorities and patients with low health literacy are less likely to ask questions and actively participate in their care during a clinic visit.^{3,4,43,44} One study evaluating 84 new patient hand surgery visits found that patients classified as “nonwhite” or having “limited health literacy” asked about half as many questions as patients classified as “white” or having “adequate health literacy.” This included specifically asking fewer questions regarding their medical condition and therapeutic regimen.³ Use of a QPL has been proposed as a means to increase question asking in these patient populations with the potential to help reduce associated health care disparities.⁴

One limitation of this study is that the qualitative feedback is specific to the patient population at our institution and may not be generalizable in more diverse settings, particularly given the lack of racial diversity and high education level among patients completing the cognitive interview and SUS portions of the study. Notably, the 4 patients with a high school diploma or less all scored the QPL above the target SUS of 68. Nevertheless, different groups of patients may find different prompt questions beneficial. An

additional limitation is that this study does not validate use of the QPL or determine what impact its use may have on treatment outcomes, patient question asking, patient satisfaction, and patient activation.

Further studies to delineate the effects of QPL use in the hand clinic setting would be beneficial because this preliminary study focused only on the development and usability assessment of the tool. Such studies could include evaluation of patient and physician satisfaction with use of the tool and measures to compare patients' understanding of their condition and treatment options with and without QPL use. There are also potential barriers to QPL implementation, including disruption of clinic workflow, resources to provide a paper or electronic copy of the tool, time required for staff to explain its use, and potentially longer clinic visit duration due to increased question asking, all of which warrant consideration.

In conclusion, this study used multiple stakeholders and a mixed-methods approach to develop a QPL for use in hand surgery. The tool was also shown quantitatively to be useable by patients. In clinical practice, the QPL can be provided to new patients via mail or electronically prior to their first visit or for review while waiting to be seen by their hand surgeon in order to engage and prompt patients in asking questions during their visit. Future studies may focus on how its use changes patient-physician communication and patient-centered care.

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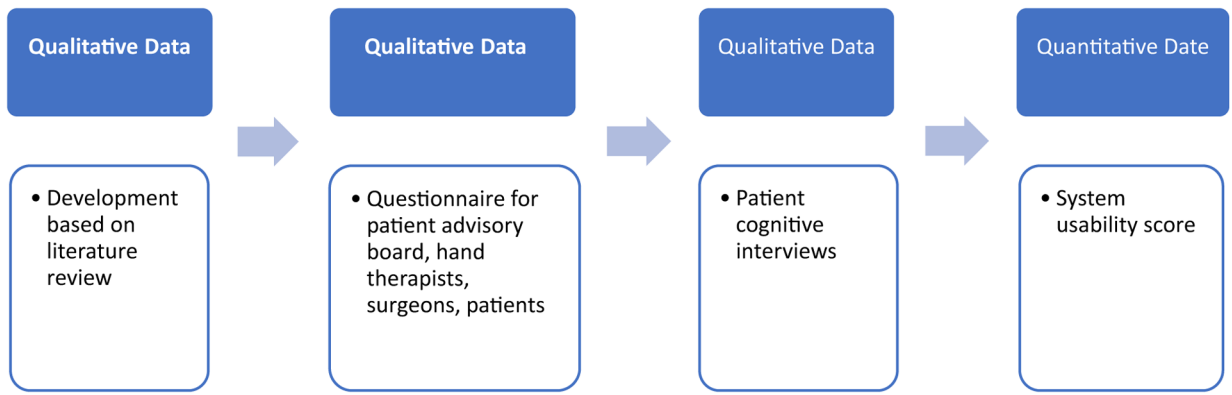


FIGURE 1:
Exploratory sequential mixed-methods design.

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What questions should I ask my hand surgeon?

The purpose of this list of questions is to:

- Act as a resource in asking relevant and important questions about your hand condition.
- Assist you to make an informed decision regarding your treatment.

Notes:

VOICES

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QUESTIONS YOU CAN ASK YOUR HAND SURGEON



DIAGNOSIS

- What are the possible diagnoses for my symptoms?
- What is the most likely diagnosis?
- Are there tests that can help confirm the diagnosis?
- Are there things that might make my diagnosis worse or spread to other areas?
- What caused me to get this diagnosis?
- Is my diagnosis common or uncommon?



Notes:

TREATMENT OPTIONS

- Do I need to treat my diagnosis?
- What are my treatment options?
- What are their expected benefits?
- What are their risks?
- Who can I talk to about the costs of the treatment options?
- Will I need a splint or cast?
- If hand therapy is a treatment option:
 - o How many visits will I need?
 - o Will therapy help me avoid surgery?
- If surgery is a treatment option:
 - o What does the surgery involve?
 - o What type of anesthesia will I need for my surgery?
 - o Can I go home the same day?
 - o What will recovery be like?
 - o How much pain will I have?
 - o Will I need a splint or cast?
 - o Will I need hand therapy after?
 - o What restrictions will I have?
 - o When can I return to work?

Notes:

OUTCOMES

- What will happen if I do nothing to treat my diagnosis?
- What are the goals or expected outcomes of each treatment option?
- How long before I feel better?
- How will my hand work after treatment?
- What can I do to improve my outcome after treatment?
- What future problems might I have because of my diagnosis?
- Could my diagnosis come back?
- Are there tests I will need in the future related to my diagnosis?

SUPPORT

- Are there services (therapy, financial assistance) available for my diagnosis?
- Are there informational materials available about my diagnosis?
- How do I reach you or your staff if I have a question or concern?

Notes:

FIGURE 2:
Final question prompt list (QPL) pamphlet.

TABLE 1.

Initial Question Prompt List (QPL)

Domain 1: Diagnosis	
1	What are the possible diagnoses for the symptoms/problems I am having?
2	What is the most likely diagnosis?
3	Are there tests that can help confirm the diagnosis?
4	What other symptoms/problems are associated with this diagnosis?
5	What activities should I avoid because of my diagnosis?
6	Is my diagnosis common?
Domain 2: Treatment Options	
1	What are the treatment options for my diagnosis?
2	What are the expected benefits of the different treatment options?
3	What are the risks of the different treatment options?
4	Do I need to treat my diagnosis?
5	If hand therapy is a treatment option: <ul style="list-style-type: none"> a. How many visits will I need? b. Will I need a splint or cast?
6	If surgery is a treatment option: <ul style="list-style-type: none"> a. What does the surgery involve? b. Who will perform my surgery? c. What type of anesthesia will I need for my surgery? d. What will recovery after surgery be like? e. How much pain will I have after surgery? f. Will I be in a splint or cast after surgery? g. Will I be able to drive after surgery? h. What restrictions will I have after surgery? i. When can I return to work after surgery? j. Will I need support from a caregiver after surgery?
Domain 3: Prognosis	
1	What will happen if I do nothing to treat my diagnosis?
2	Is my diagnosis harder to treat in the future if I delay treatment?

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- 3 What are the goals or expected outcomes of each treatment option?
- 4 What future problems might I have because of my diagnosis?
- 5 Could my diagnosis come back after treatment?
- 6 Are there tests I will need in the future related to my diagnosis?
- 7 How long will it take for me to feel better?

Domain 4: Support

- 1 What services (therapy, support groups, financial assistance) are available for my diagnosis?
 - 2 Are there printed or online materials available about my diagnosis and the treatment options?
 - 3 Are there patients with my diagnosis that I could talk to about it?
 - 4 What is the best way to reach you or your staff if I have a question or concern?
-

TABLE 2.

Qualitative Analysis—Expert Panel Written Questionnaire

	Patient Advisory Board		Hand Therapists		Hand Surgeons	
Number	6		5		6	
Age (y), n (range)	64 (35–82)		NA		NA	
Years in practice	NA		6 to >25		<1 to >25	
Summary of comments and suggested additional questions	Diagnosis		Diagnosis		Diagnosis	
	• Will I make it worse?		• How did I get this?		• Why do I have this?	
	• Is it genetic?		• Is treatment urgent?		• Remove “Is this diagnosis genetic?”	
	• Will it occur elsewhere?				• Simplify language	
	• Do you treat this often?					
Treatment options		Treatment options		Treatment options		
• Will I have full function?		• What is recovery time?		• How long is recovery?		
• Can I accelerate recovery?		• How will therapy help?		• Can I shower after surgery?		
		• Will I have full recovery?		• Can I go home after surgery?		
		• What will pain be like?		• Include cost questions		
		• Too many questions		• Questions too long		
Prognosis		Prognosis		Prognosis		
• Is there risk of not regaining full function?		• How can I prevent recurrence?		• Will I have full function?		
		• Are there future tests?				
		• Redundant questions				
Support		Support		Support		
• Recommend a visual flyer		• Help for work leave and disability paperwork?		• Surgeon may not know answers to financial questions		
• Clarify “treatment” versus “surgery”				• No current system for talking to other patients		
• Are there out-of-pocket costs?						

TABLE 3.

Demographics for Patients Completing Cognitive Interview and SUS

	Cognitive Interview Patients	SUS Patients
Number	13	20
Sex, n (%)		
Male	8 (61.5)	13 (65)
Female	5 (38.5)	7(35)
Average age (y), n (range)	46.3 (20–77)	48.1 (24–80)
Race/ethnicity, n (%)		
Asian	1 (7.7)	4 (20)
Black	0	1 (5)
Hispanic	1 (7.7)	2(10)
Other	1 (7.7)	1 (5)
White	10 (76.9)	12 (60)
Work status, n (%)		
Full-time	6 (46.2)	12 (60)
Part-time	2 (15.4)	2(10)
Retired	3 (23.1)	4 (20)
Unemployed	0	0
Disabled	1 (7.7)	1 (5)
No work outside home	0	1 (5)
Student	1 (7.7)	0
Highest education level, n (%)		
Some high school	0	1 (5)
High school degree	3 (23.1)	3 (15)
Bachelor’s degree	4 (30.7)	6 (30)
Master’s degree	6 (46.2)	7 (35)
Doctorate degree	0	3 (15)

TABLE 4.

Final Question Prompt List (QPL)

Domain 1: Diagnosis	
7	What are the possible diagnoses for my symptoms?
8	What is the most likely diagnosis?
9	Are there tests that can help confirm the diagnosis?
10	What problems are a part of this diagnosis?
11	Are there things that might make my diagnosis worse or spread to other areas?
12	What caused me to get this diagnosis?
13	Is my diagnosis common or uncommon?
Domain 2: Treatment Options	
7	Do I need to treat my diagnosis?
8	What are my treatment options?
9	What are their expected benefits?
10	What are their risks?
11	Who can I talk to about the costs of the treatment options?
12	If hand therapy is a treatment option: <ul style="list-style-type: none"> a. How many visits will I need? b. Will I need a splint or cast? c. Will therapy help me avoid surgery?
13	If surgery is a treatment option: <ul style="list-style-type: none"> a. What does the surgery involve? b. What type of anesthesia will I need for my surgery? c. Can I go home the same day? d. What will recovery be like? e. How much pain will I have? f. Will I need a splint or cast? g. Will I need hand therapy after? h. What restrictions will I have? i. When can I return to work?

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Domain 3: Outcomes

- 8 What will happen if I do nothing to treat my diagnosis?
- 9 What are the goals or expected outcomes of each treatment option?
- 10 How long before I feel better?
- 11 How will my hand work after treatment?
- 12 What can I do to improve my outcome after treatment?
- 13 What future problems might I have because of my diagnosis?
- 14 Could my diagnosis come back?
- 15 Are there tests I will need in the future related to my diagnosis?

Domain 4: Support

- 5 Are there services (therapy, financial assistance) available for my diagnosis?
 - 6 Are there informational materials available about my diagnosis?
 - 7 How do I reach you or your staff if I have a question or concern?
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