Sequenced Questioning to Elicit the Patient’s Perspective on Illness: Effects on Information Disclosure, Patient Satisfaction, and Time Expenditure

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**Background:** During the medical interview, clinicians frequently overlook the patient’s perspective on illness (PPI), i.e., the patient’s explanations and concerns about the cause of the illness, and expectations for the encounter. Without special efforts, the PPI surfaces spontaneously in only about one fourth of medical interviews. We determined whether asking the patient a series of sequenced questions would elicit the PPI and what effect such questioning would have on patient and physician satisfaction and on the length of the clinical encounter. **Methods:** Fifty-five interviews in a family practice clinic setting were studied by videotape and post-interview debriefings. On a random basis, 29 patients were asked sequenced questions at the end of the history, while 26 experienced usual medical interviews. Measures of patient and physician satisfaction were compared by descriptive statistics and the Mann-Whitney test for ordinal data. **Results:** In response to sequenced questioning, 44% of patients revealed specific, significant concerns that had not been otherwise disclosed. Among patients without prior contact with their provider, satisfaction with the encounter was significantly higher when the sequenced questions were used than when they were not; perception of time spent in discussion with the physician was also higher. Paradoxically, resident physicians expressed lower confidence that they had helped the patient when the sequenced questions were used to elicit the PPI. **Conclusions:** Use of sequenced questions to elicit the PPI results in significant sharing of new information and increased patient satisfaction and requires only a modest investment of time.

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Each patient brings into the clinical interview a unique perspective on his or her illness (the patient’s perspective on illness [PPI]), which includes the patient’s concerns, explanations about the cause of the illness, and expectations for the doctor-patient encounter. The PPI arises from a personal, familial, and cultural context of which the physician typically is unaware. Thus, the PPI usually differs markedly from the physician’s diagnostically oriented, decision-making perspective. Numerous authors have noted that facilitating patients’ sharing of their PPI results in improved disease outcomes and higher levels of patient satisfaction and adherence with therapy. Yet, despite its significance, the PPI frequently remains unstated during the typical medical interview.

The PPI can be elicited by various means. Nondirective facilitating techniques, especially early in the interview, can encourage patients to share more of their concerns. Unfortunately, physicians on the trail of medical diagnosis usually redirect the patient’s flow of ideas and concerns to ask questions directed at the history of present illness. Using a second technique, physicians may astutely identify and explore clues (statements that imply, but do not explicitly state, the patient’s concerns) communicated by the patient as a way to understand the PPI. However, as the Toronto Consensus (a review of evidence-based principles and recommendations made by a convocation of international experts) notes and as Levinson’s recent article confirms, “active listening” to explore these clues is often an undeveloped clinical skill.

A third approach to identify the PPI is asking focused questions, a method that parallels physicians’ usual method of collecting information. Kleinman first
delineated a number of important aspects of the patient’s perspective with a set of eight focused questions.21 With similar intent to better understand the patient’s perspective, several authors have advocated asking the patient a single question, “What do you believe is causing your symptoms?”1,2,24-29 Additionally, several authors have commented on the need to go beyond a single opening question to adequately encourage expression of the PPI.1,9,24-27 (Table 1).

Over our years of teaching medical interviewing, we encountered many clinicians who have tried asking a single question about the patient’s attributions of illness. Their experience was decidedly negative, either because the question elicited no meaningful response or because many patients respond to a solitary inquiry with statements like, “I don’t know [what’s causing my symptoms] . . . that’s why I came in.” Such responses typically result in clinicians feeling awkward. Few affirmed the usefulness of directly eliciting the PPI.

Because of the failure of such patient-centered explorations to gain widespread acceptance and because there has been no empiric evidence of the benefit of such questioning, we decided to study how asking a sequence of questions aimed at the PPI would (1) be received by patients, (2) facilitate disclosure of important clinical information, (3) affect patient and physician satisfaction, and (4) affect the length of the interview. The press for efficiency in today’s practice further emphasizes the importance of identifying the patient’s perspective in a time-efficient manner.

Methods
The Sequenced Questions
In selecting appropriate sequenced questions focused on the PPI, we began with a straightforward exploration of causation attribution (Figure 1). Next, we searched for questions that might overcome some of the barriers, which Maguire identified, to patients sharing their PPI.20 Seeking to include a question that might decrease the patient’s likelihood of feeling foolish or silly, we decided on, “I know you may not know the cause of your symptoms, but it would be helpful to me [the interviewer] if you could share any ideas that may have crossed your mind.” With such a statement, the clinician states an unequivocal interest in the patient’s perspective.

Another reason that patients fail to share their PPI is that overtly stating such ideas can create anxiety as concerns take on a reality through verbal expression. Stoelckle and Barsky’s27 question, “What does your husband, wife, or family think?”, attempts to identify the patient’s diagnostic attribution through displacing the concern onto another person. Given the fact that in today’s culture such attributions might just as likely come from television or magazines, we updated this question: “Today, people hear, see, and read a lot about health problems. I wonder if there is anything you have seen, read about, or heard someone mention that you connected with your symptoms?” Several of our group field tested these questions, and our experience suggested that they facilitated expression of the PPI in a variety of situations when the PPI was not disclosed spontaneously.

We were also concerned with the appropriate time to ask such questions. Several patients shared with us their dismay at being asked this type of question before the clinician had done a thorough history, fearing that the physician might be attempting to “give me what I wanted but not find out what’s really wrong.” Thus, we decided to ask the sequenced questions at the end of the history before the physical exam (Figure 1).

A 2-hour workshop (conducted by two of the authors) introduced the residents to concepts of the PPI. The residents were advised that with some of their patients, they would directly explore the PPI by means of sequenced questions, regardless of whether they felt the patient had shared all of his or her concerns. With other patients in the study, they would proceed with their usual medical history.

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<th>Table 1</th>
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<td>Examples of Previously Referenced Sequenced Questions</td>
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- Weston, Brown, and Stewart1
  - What do you think is causing the headaches?
  - Have any idea or theories about why you might be having them?
  - Do you think there is any relationship between the headaches and current events in your life?

- Yudkin24
  - What is particularly bothering you about the condition?
  - What do you think might have caused the trouble?

- Bass and Cohen9
  - What are you concerned about?
  - Is there anything special about [your condition] that causes you concern?

- Lipkin25
  - What do you think is the matter with you?
  - What does the name of the disease mean to you?
  - What is your idea of what the sickness does to people?
  - Have you known anybody who had the same trouble?
  - What happened to that person?

- Martin26
  - How do you explain this illness?
  - What diagnosis have you thought of?
  - Are you concerned that this is cancer?
  - Has anyone you have known ever had similar symptoms?

- Stoelckle and Barsky27
  - Most people have some ideas of their own about what brought on their sickness.
  - What does your husband, wife, or family think is the cause?
Subjects

Residents. We recruited residents willing to participate in the study from third-year residents from two family practice residencies at East Tennessee State University. Five residents, all male, agreed to participate during June prior to their graduation.

Patients. Because of concerns about the impact of an established doctor-patient relationship on satisfaction with the visit, the study was initially designed to involve only patients who had not been previously seen by that resident. However, due to small numbers of patients who met this criterion, it was necessary to broaden the criteria to include new and established patients. For the purposes of this study, new patients were defined as those who had never seen that resident (even if they had seen other physicians in the practice). Established patients were defined as having previously seen that resident but who were presenting with a new symptom or acute problem. All patients who met the criteria were approached and asked to participate. Patients were told that the study would address doctor-patient communication, that the doctor-patient interview would be videotaped for later review, that no part of the physical exam would be videotaped, and that following the office visit, they would be interviewed for additional information for about 5 minutes.

Procedures

Two summer research assistants (medical students) were trained to use videotaping equipment and to administer the post-interview debriefing instruments described below. Once the patient’s consent was obtained, the resident was informed that the interview would be videotaped. Using a table of random numbers, the resident was instructed either to proceed with his typical medical history or to include, toward the end of the interview, the three sequenced questions aimed at exploring the PPI. The portion of the encounter preceding the physical exam was videotaped.

On completion of the office visit, the research assistants debriefed all patients, verbally administering a survey combining the following established scales: a modified Arizona Clinical Interview Rating Scale, Masier Patient Satisfaction Scale, and Patients’ Illness Concerns Scale. In addition, the research assistant asked each patient the same series of questions directed toward eliciting the PPI, regardless of whether the resident had used the questions during the interview.

Residents were debriefed after each patient encounter, assessing physician satisfaction in the following categories: physician perception of patient characteristics, adequacy of information acquired from the patient, affective responses to patient, overall satisfaction with the visit, and clinical significance of identifying the PPI.

Videotapes were reviewed to verify the residents’ use or nonuse of the sequenced questions, to identify spontaneous disclosure of the PPI, and to determine and characterize response to the sequenced questions.

Descriptive statistics were computed for variables from the debriefing instruments. Associations between variables were tested for significance using the Mann-Whitney test for ordinal data.

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**Figure 1**

Sequenced Questions to Determine the Patient’s Perspective on Illness

When the history is complete, ask: Question 1

“What ideas or thoughts have you had about the possible cause of today’s problem?”

Patient discloses an attribution or concern, then ask:

**Question 2A**

“That is very helpful. Besides that, did any other ideas occur to you either of a serious or non-serious nature?”

Patient denies specific attribution or concern, then ask:

**Question 2B**

“I know you may not know for sure the cause of your symptoms, but it would be helpful if you could share any ideas that may have crossed your mind.”

To further explore the patient perspective, ask:

**Question 3**

“Today, people hear, see, and read a lot about health problems. I wonder if there is anything you may have seen, read about, or heard someone mention that you connected with your symptoms?”
Results
Sixty-three patients met the criteria outlined above and were approached to participate in the study. Eight patients declined due to time constraints or discomfort with the notion of being videotaped. The final study cohort included 55 patients. Many had chronic medical problems, but all had at least one new symptom or problem to explore on the day of the visit.
The subjects represented a broad age range, from infants (in which case the mothers were the interviewees) to 86 years. Thirty-six were established patients, and 19 were new patients. Forty-one patients were women, and 14 were men.

Videotapes were made of only 46 of the 55 patient interviews; equipment problems resulted in nine encounters not being videotaped. Twenty-nine of the total 55 study patients were asked the sequenced questions, while 26 patients experienced the physicians’ usual medical interview. All 55 were debriefed. In the group of 46 who were videotaped, 27 were asked the three sequenced questions by their physician, and 19 were controls.

Disclosure of Patients’ Attributions
The group of 27 videotaped patients who were asked the sequenced questions provided us with an opportunity to observe what diagnostic attributions were offered spontaneously during the interview and how patients responded to the sequenced questions (Table 2). Six of the patients spontaneously disclosed a diagnostic attribution during routine history, which they reiterated when asked the three questions. In these cases, the attributions were not surprising, e.g., a rash attributed to poison ivy, a joint pain to arthritis, a cough due to smoking.

When asked the sequenced questions, 9 of these 27 patients denied any specific attribution to all the questions. In 12 of the 27 encounters, the patient revealed significant and unexpected concerns. For some, several different attributions surfaced in response to different questions. Examples of significant patient concerns disclosed in response to the follow-up question are listed in Table 2.

Patients’ Expectations and Satisfaction
Debriefing data from all 55 patients revealed no difference between questioned and non-questioned patients in expectations that their visit would provide them an opportunity to share their feelings and concerns with their doctor. Of 55 patients, 40 (73%) rated this expectation as “extremely important.”

In response to a single debriefing question addressing satisfaction with the encounter, new patients who were interviewed using sequenced questions (n=11) expressed greater overall satisfaction (P<.02) with the clinical encounter than those who did not receive these questions (n=8). Of 11 new patients interviewed with the sequenced questions, 10 rated their overall satisfaction with the encounter as “strongly positive.” In contrast, the patients interviewed by usual medical history expressed satisfaction ratings over a wider range, including “slightly,” “moderately,” and “strongly” positive.

Satisfaction levels for established patients did not differ between those who were interviewed with the sequenced questions and those who were not; 31 of 36 patients (86%) gave “strongly positive” satisfaction ratings regardless of the style of interviewing. One of the established patients receiving the sequenced question responded to this satisfaction question with the lowest score, i.e., most negative.

One significant (P<.005) difference between questioned and non-questioned new patients was a perception of greater time spent with the doctor “discussing worries and concerns.” Of 11 new patients interviewed with sequenced questions, seven responded that discussion of worries lasted for 16 to 30 minutes, whereas none of the non-questioned patients estimated that the discussion of concerns lasted as long as 16 minutes. A similar, but not statistically significant, trend occurred among established patients.

Observation of the videotaped interviews revealed that the length of the interview occurring prior to the physical examination averaged 10.0 minutes for patients experiencing the residents’ usual interview approach and 13.8 minutes for those to whom the three questions were posed. The time taken for asking and re-

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<th>Table 2</th>
<th>Patient Concerns Disclosed Spontaneously and In Response to Sequenced Questioning*</th>
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<tr>
<td></td>
<td>Spontaneous</td>
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<td></td>
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<tr>
<td>Patient concerns in response to Question 1:</td>
<td></td>
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<tr>
<td>• Infertility</td>
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<td>• Chest pain secondary to scar tissue</td>
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<td>• Gall bladder disease or gastrointestinal cancer</td>
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<td>• Heart attack</td>
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<td>• Inability to work</td>
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<td>• Pneumonia</td>
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<td>• Liver problems</td>
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<td>Patient concerns in response to Question 2 but not spontaneously and not to Question 1:</td>
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<tr>
<td>• Fear that swelling of legs might cause congestive heart failure</td>
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<tr>
<td>• The possibility of pancreatic cancer, like the patient’s brother</td>
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<td>• Fear of stroke, like the patient’s paternal grandfather</td>
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<tr>
<td>• Fear of sudden infant death</td>
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<td>• Heart failure</td>
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<td>• Brain tumor (the patient’s husband initiated this concern)</td>
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* n=27
sponding to the three questions averaged 1 minute and 48 seconds.

Resident Physician Responses

Residents were debriefed after 43 of the 55 interviews. In 8 of 25 encounters (32%) that included sequenced questions, the clinical significance of the PPI was judged “important” or “very important” by physicians. In an additional 13 encounters (52%), physicians described the PPI as being of “some use” (resident data missing for four cases.) By contrast, with patients interviewed by the usual medical history, physicians reported the PPI as clinically “important” or “very important” in only two of 18 encounters. This result is understandably low, since PPI surfaced spontaneously only rarely in these encounters.

Resident physicians noted more “understanding of the patient’s concerns” when PPI was deliberately elicited with sequenced questioning than when they used their typical method of interviewing (P<.04). Whether or not residents included the sequenced questions, they found the visits equally stimulating intellectually and would be equally pleased to see the patient again. Differences were apparent, however, for one aspect of physician response to the encounters. Specifically, resident physicians were more likely to feel they had “helped the patient” when the interview was conducted without explicitly eliciting the PPI (P<.03).

Discussion

This study confirms published findings that many of a patient’s concerns, explanations, and expectations fail to surface during a routine medical interview. Korsch demonstrated that in only 24% of all encounters do patients specifically mention their main concern to the doctor. Bass discovered that 34% of parents of ill children had non-verbalized fears that something much more serious was wrong with their child than their physician anticipated from the ostensible reason for seeking assistance. Our findings suggest that this may be equally true in the outpatient offices of family physicians.

This study confirms the usefulness of sequenced questions for eliciting the PPI in terms of both patient satisfaction and time efficiency. Only about one fourth of the patients responded to a single request to share this information, but we have documented considerable benefit to asking a sequence of questions rather than a single question. Follow-up questions add valuable information not acquired by spontaneous disclosure or a single question. Clinicians frequently express concern that follow-up questions may feel like badgering to the patient. The patient satisfaction data from our study negate this concern and should encourage clinicians to respectfully pursue the PPI with follow-up questions.

It remains undetermined whether the improved satisfaction of new patients comes about by facilitation of expression of ideas and concerns that the patient hoped would surface, or if it is mediated by the increase in perceived personal attention from the physician. Efficient use of time is important, and the increased perception by patients of time spent in discussion with the physician and the effect on satisfaction suggest that the average of 1 minute and 48 seconds spent in eliciting the PPI is well worth the effort.

We were somewhat surprised that residents found interviews with rich, elicited attributions no more interesting than usual interviews. It may also seem paradoxical that resident physicians felt less helpful to patients who revealed their ideas and concerns during the sequenced question interview and especially so when compared to reported increased patient satisfaction with these encounters. This may have been a result of being told by the research team to add additional interview questions that were not of their own formulation. Another explanation is that these residents may have felt less effective when patients disclosed information lying outside of their usual comfort zone. Training in ways to respond to expression of feelings and in how to negotiate toward common ground may be helpful in increasing physicians’ feelings of effectiveness. Lack of training in these complementary skills may be one reason why clinicians who begin to explore the PPI frequently abandon such efforts for more traditional, purely diagnostic interviewing.

One limitation of this study is the small number of participants involved and, in particular, the small number of truly new patients. The high satisfaction level among established patients, even if they have new problems and regardless of interview style, confirms the benefit of an established doctor-patient relationship on patient satisfaction. This factor should be considered in future research on how satisfaction relates to the use or nonuse of certain communication techniques. Another unanswered question concerns the relative effectiveness of direct questioning as a means of identifying the PPI, compared with careful observation and follow-up of clues (ie, active listening) expressed during an interview. Comparison of these two methods of eliciting the PPI merits further study.

In making the decision to routinely explore the PPI with sequenced questions, considerations remain regarding how to best segue to the questions. We encourage clinicians to begin the sequence of questions with a transitional ubiquity statement, which suggests that these questions are a regular part of the physician’s medical history. Using an ubiquity statement may prevent patients from feeling that they have been singled out for any reason when the physician requests their personal perspectives. Even if clinicians have been previously frustrated in seeking unspoken patient attribu-
tions, we encourage sequenced questioning of the PPI. In doing so, we expect better and more satisfying communications between clinicians and their patients while maintaining a commitment to efficiency.

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