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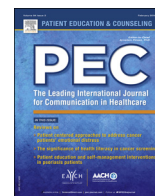
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# Agenda-setting revisited: When and how do primary-care physicians solicit patients' additional concerns?

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### ABSTRACT

**Objective:** Soliciting patients' complete agendas of concerns (aka. 'agenda setting') can improve patients' health outcomes and satisfaction, and physicians' time management. We assess the distribution, content, and effectiveness of physicians' post-chief-complaint, agenda-setting questions.

**Methods:** We coded videotapes/transcripts of 407 primary-, acute-care visits between adults and 85 general-practice physicians operating in 46 community-based clinics in two states representing urban and rural care. Measures are the incidence of physicians' questions, their linguistic format, position within visits, likelihood of being responded to, and the nature of such responses.

**Results:** Physicians' questions designed to solicit concerns additional to chief concerns occurred in only 32% of visits ( $p < .001$ ). Compared to questions whose communication format explicitly solicited 'questions' (e.g., "Do you have any questions?"), those that were formatted so as to allow for 'concerns' (e.g., "Any other concerns?") were significantly more likely to generate some type of agenda item ( $\text{Chi}^2(1, N = 131) = 11.96, p = .001$ ), and to do so more frequently when positioned 'early' vs. 'late' during visits ( $\text{Chi}^2(1, N = 73) = 4.99, p = .025$ ).

**Conclusions:** Agenda setting is comparatively infrequent. The communication format and position of physicians' questions affects patients' provision of additional concerns/questions.

**Practice implications:** Physicians should increase use of optimized forms of agenda setting.

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## 1. Introduction

The majority of primary-care patients bring more than one distinct concern to visits [1–4]. In contrast, primary-care visits are ordinarily structured in terms of singular, chief concerns [5,6]. In this time-pressured context—where patients have about 20 s to present their chief complaints before physicians begin the history [7–9]—patients' *additional* concerns tend to emerge late during visits [10,11] or not at all [4]. These late-breaking concerns can burden physicians' time management, while unmet/unvoiced concerns can burden patients' physical and psychosocial health and contribute to the rising cost of healthcare [12,13].

To address these issues, physician educators have long advocated communication strategies related to a process frequently referred to as 'agenda setting' [14–17], or more broadly as 'agenda mapping' [18,19]. Of course, an initial strategy is soliciting patients' chief complaints with open-ended question formats such as "What can I do for you?" or "How can I help" [9]? But, as

indicated above, this strategy typically generates single concerns, and is not effective in soliciting additional concerns beyond the chief complaint. Thus, a second strategy, and the focus of this article, involves physicians continuing to solicit patients' concerns 'to exhaustion' [5,8,20–22], for example with questions such as "Are there any other issues you'd like to address"? This type of agenda pursuit has its greatest effects when performed 'early' or 'up front' during visits (i.e., no later than history taking, and preferably immediately after patients' presentations of their chief concerns) [15,21]. As a component of patient-centered communication [15,23–25], and ultimately of shared decision making [26], agenda pursuit is now a staple of textbooks on medical interviewing [27–29] and is a frequent component of physician-training programs [5,18,22,30–35]. It has also been integral to innovations in medical interviewing, such as the 'four-habits model' [26,36] and the 'establishing-focus protocol' [16,21,37]. In addition to reducing the incidence of unmet concerns [2], up-front agenda pursuit is associated with patient satisfaction [14], improved physician understanding of patients' concerns [12], and a decreased incidence of late-emerging concerns [8,38]. Up-front agenda pursuit does not appear to significantly affect visit

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length [2,8,21], perhaps because it facilitates effective time management [39,40].

Notwithstanding the documented value of up-front agenda pursuit, and despite some investigations in specialist care [16], no studies have attempted to estimate its incidence and quality in actual (i.e., videotaped) behavior during ordinary (i.e., non-manipulated), primary-care practice. In this article, we describe the distribution, content, and effectiveness of physicians' questions designed to solicit concerns that are additional to patients' chief concerns (hereafter referred to as physicians' questions).

## 2. Methods

This is a secondary analysis of three data sets (collected between 2000 and 2005) [2,9,41] comprising videotapes and complete transcripts of 407 primary-care, acute visits (i.e., ones for relatively new problems) between adults and 85 general-practice physicians operating in 46 community-based clinics in two states representing urban care (West-Coast California; 39 clinics) and rural care (Central Pennsylvania; 7 clinics), respectively (Because we were interested in natural care, intervention visits from Heritage et al. [2] were not included). Patients were recruited consecutively by on-site research assistants, who were not present during visits. Physicians and patients were either told that the purpose of the study was to examine patterns of communication that might lead to improved care ( $N=330$ ), or to examine how patient concerns were expressed in primary care ( $N=77$ ). Participants were aware that visits were videotaped with a single, small, wireless camera positioned unobtrusively in a ceiling corner. Research suggests that any Hawthorne effect from such observation will increase physicians' adherence to normative standards of medical practice, making our findings conservative. Physicians were offered \$300 for their participation, and patients were offered \$10. All study procedures were reviewed and approved by the

Institutional Review Boards of the University of California, Los Angeles, the Pennsylvania State University, and participating health care organizations.

### 2.1. Coding

Two coders (A.T. and a research assistant who was blinded to the purpose of this study) were initially trained on 10% of the data (i.e., 41/407 randomly selected visits). Coding involved reading transcripts in tandem with watching videos. We assessed inter-coder reliability on 20% of the non-training data (i.e., 74/366 randomly selected visits) using the Kappa statistic ( $K$ ) for 5 communication variables (see below). Having achieved acceptable reliability, the remaining data were coded and discrepancies were discussed and resolved by the authors.

#### 2.1.1. Incidence of questions

Prior observational studies of actual care have demonstrated that agenda pursuit can take a variety of forms [8,16,21,37]. We focused on 'essential elements' [16] involving physicians' questioning strategies for eliciting additional concerns that occurred after patients' presentations of their initial or chief concern. Recognizing that patients' definitions of 'agendas' extend beyond biomedical concerns [42], we allowed for questions that broadly targeted additional 'issues', 'concerns', or 'questions' (see Section 2.1.2 below for examples). Importantly, we were interested in questions that potentially allowed for the presentation of additional, distinct concerns relative to patients' initial concern. Thus, we did not code for questions that explicitly targeted aspects of patients' initial concern, including standard history-taking questions (e.g., *How long have you had this back pain?*), questions about patients' perceptions of their initial concern (e.g., *What do you think is causing your back pain?*), and questions about patients' expectations regarding care for their initial concerns (e.g., *How do*

<p>Example 1 [Case #31]</p> <p>Context: Immediately after patient presents chief concern.</p> <p>PAT: ...Well anyway I'm here for a referral. DOC: Yeah. We can definitely push you in to see ortho. PAT: Okay. DOC: That's no problem. PAT: Alright. --&gt; DOC: How are you otherwise? Any other concerns? PAT: I'm doing fine, I had a slight reaction to the flu shot, you know I woke up with kinda sore throat.</p>
<p>Example 2 [Case #190]</p> <p>Context: As physician completes treatment discussion.</p> <p>DOC: You can go to work. Okay? PAT: Okay. --&gt; DOC: Any other medical problems? PAT: No.</p>
<p>Example 3 [Case #404]</p> <p>Context: As physician begins to close visit and stand up to leave room.</p> <p>DOC: Let's go see if those things printed. PAT: Okay. --&gt; DOC: Did you have any other questions about anything? PAT: No.</p>

Fig. 1. Transcript examples of question asking.

you feel about back surgery?). Coders were able to reliably identify the same speaking turns in transcripts as containing instances of questions targeting additional concerns ( $K = .86$ ).

### 2.1.2. Type of question

In an attempt to identify canonical forms of questions, and guided by prior work on how the format of questions can influence responses [2,9], coders distinguished between questions whose communication format explicitly invited patients to ask 'questions', per se, and those that explicitly sought or allowed for 'concerns' (i.e., a dichotomous code;  $K = 1.0$ ). Solicitations that were explicitly formatted as seeking only 'questions'—which we refer to as 'question-seeking questions'—are non-canonical, agenda-setting questions that nonetheless appear in medical-training literature [16]. Examples of 'question-seeking questions' included: "(Do you have) Any (other) questions (at all, so far, for me, about that, today)?", "What other questions do you have?", and "Anything (else) you want to ask me?" (see Fig. 1, Example 3). In contrast, 'concern-seeking questions' were either explicitly formatted as seeking 'concerns', 'problems', or 'issues'—such as "(Do you have) (any, some) other concerns?", "(Was there) anything else you're concerned about?", "(Have you had) any other (medical) problems (at all, at this time, you want to address)?", and "Any other issues (you would like to discuss today)?"—or formatted in ways that allowed for the relevance of concerns/problems/issues, such as: "(Was there) anything else (I can do for you, you needed today, you wanted to talk to me about, I should know about)?", "Otherwise you feel fine (today)?" "Everything else going okay?", "Is there something else?", and "What else?" (see Fig. 1, Examples 1 and 2).

### 2.1.3. Position of question

Coders distinguished between questions that were asked 'early' (i.e., before the completion of history taking, which is a minimum 'best-practice'; see Fig. 1, Exemplar 1) and those asked 'late' (i.e., after history taking, e.g., during diagnosis, treatment/counseling, or closing; see Fig. 1, Exemplars 2 and 3). This was a dichotomous code ( $K = .90$ ).

### 2.1.4. Response incidence

Coders identified when patients either responded to agenda-setting questions with any agenda item (which included new medical concerns relative to patients' chief complaints, but also requests for prescriptions and test results, as well as questions seeking medical information; see Fig. 1, Exemplar 1) or declined to present any agenda (see Fig. 1, Exemplars 2 and 3). This was a dichotomous code ( $K = 1.0$ ).

### 2.1.5. Response content

In order to gauge the efficacy of agenda-pursuing questions, when patients responded with any agenda item (see above), coders were trained to distinguish between new medical concerns, issues, or problems relative to their chief concerns, or 'other' (e.g., information questions, or requests for prescriptions, tests, or test results that were unrelated to new medical concerns). This was a dichotomous code ( $K = .76$ ).

## 2.2. Analysis

Analysis consisted of non-parametric testing (binomial probability and Chi-square), and parametric testing (logistic regression). For each logistic-regression outcome, five demographic covariates were screened in bivariate analogues of the corresponding multivariate models for inclusion in the multivariate models: patient age (continuous), patient sex (dichotomous), patient race (dichotomous as white/non-white), physician sex (dichotomous),

and urban/rural practice (dichotomous). For parsimony, we estimated the bivariate association of each covariate with each outcome and only retained those for which  $p < .20$ , a standard screening threshold designed to prevent the premature elimination of variables with stronger multivariate than bivariate effects [43]. All analyses were conducted in STATA 12.1 and corrected for the clustering of patients within physicians.

## 3. Results

As seen in Table 1, data represented: 407 patients (63% female) with a mean age of 44.5 (Range = 18–86; SD = 16.39) who self identified as either white/Caucasian (65%) or other race (35%); 85 doctors (65% male) who saw an average of 4.8 patients each (Median = 4; Mode = 4; Range = 1–14); 277 (68%) urban visits and 130 (32%) rural visits.

### 3.1. Incidence of questions

The general incidence of physicians' questions designed to solicit concerns additional to chief concerns—including both 'question-seeking questions' and 'concern-seeking questions'—was significantly low, occurring in only 131/407 (32%) visits (binomial probability test;  $p < .001$ ; Table 1). Incidence was not significantly predicted by demographic variables (Only physician sex met the threshold to be retained in the model; Table 2). In a small minority of cases (25/407; 6%), physicians asked agenda-pursuing questions a second or third time later in visits. These attempts were uniformly unsuccessful in eliciting further agenda items (0/25), and thus will not be considered further in this article.

**Table 1**  
Characteristics of study visits.

Characteristic	Mean (range)	N (percentage)
Patient age <sup>a</sup>	44 (18–86)	
Patient sex		
Male		150 (37%)
Female		257 (63%)
Patient race <sup>b</sup>		
White/Caucasian		252 (65%)
Other		136 (35%)
Physician sex		
Male		288 (71%)
Female		119 (29%)
Practice site		
Urban		277 (68%)
Rural		130 (32%)
Incidence of agenda-setting question		
No		276 (68%) <sup>c</sup>
Yes		131 (32%)
Position of agenda-setting question		
Early		23 (18%) <sup>d</sup>
Late		108 (82%)
Type of agenda-setting question		
Question-seeking		58 (44%) <sup>e</sup>
Concern-seeking		73 (56%)

<sup>a</sup> 42 missing cases.

<sup>b</sup> 19 missing cases.

<sup>c</sup> Binomial probability test shows significant difference ( $p < .001$ ).

<sup>d</sup> Binomial probability test shows significant difference ( $p < .001$ ).

<sup>e</sup> Binomial probability test shows no significant difference ( $p = .221$ ).

**Table 2**  
Variables associated with incidence of any agenda-setting questions ( $N = 407$ )<sup>a</sup>.

Variables	Odds ratio	Std error	Z	P	CI
Phys. sex	1.81	.69	1.54	.123	.851–3.846

<sup>a</sup> 0 = absence of question; 1 = presence of question.

### 3.2. Positioning of questions

Physicians' questions—including both 'question-seeking questions' and 'concern-seeking questions'—were more likely to be positioned 'late' ( $N = 108/131$ ; 82%) than 'early' ( $N = 23/131$ ; 18%) (binomial probability test;  $p < .001$ ; Table 1). Positioning was not significantly predicted by any demographic variable (Only patient age met the threshold to be retained in the model; Table 3). Only 3/131 (2%) questions were positioned immediately after patients' presentations of their chief concerns (widely recognized as 'best practice' for agenda setting), 20/131 (15%) were positioned sometime during the history-taking phase (which is 'acceptable' but less optimal for agenda setting), 55/131 (42%) were positioned sometime during the diagnosis or treatment phase, and 53/131 (41%) were positioned during the closing phase (this data not in tables).

### 3.3. Question type

Physicians' agenda-pursuing questions were not significantly more likely to be 'question-seeking questions' (i.e., ones that explicitly solicited, and thus linguistically influenced responses toward, 'questions', such as "Do you have any other questions?") ( $N = 58$ ; 44%) than they were to be 'concern-seeking questions' (i.e., ones that explicitly solicited or invited concerns, issues, or problems, such as "Do you have any other concerns?") ( $N = 73$ ; 56%) (binomial probability test;  $p = .221$ ; Table 1). Type of question was significantly predicted by patient age (Only patient age and race met the threshold to be retained in the model; Table 4), such that physicians were more likely to pose 'concern-seeking questions' to older patients.

All but one of the 'question-seeking questions' (57/58; 98%) were positioned 'late' in visits (Table 5). None of the 'question-seeking questions' were responded to with new medical concerns, although in four cases patients responded by elaborating on their already-presented chief concerns. Thus, data strongly suggest that patients do not treat 'late', 'question-seeking questions' as constituting agenda-setting.

In contrast to question-seeking questions, patients responded to concern-seeking questions with new medical concerns 18% (13/73) of the time, thereby treating them as potential agenda-setting questions. On one hand, similar to 'question-seeking questions', 'concern-seeking questions' were more likely to be positioned 'late' (51/73; 70%) than 'early' (22/73; 30%) (binomial probability test  $p < .001$ ). On the other hand, compared to 'question-seeking questions', 'concern-seeking questions' were significantly more likely to be positioned 'early' ( $\text{Chi}^2 (1, N = 131) = 18.03, p < .001$ ; Table 5), and significantly more likely to generate some type of agenda item ( $\text{Chi}^2 (1, N = 131) = 11.96, p = .001$ ) (Table 6). Considering the 22 'early', 'concern-seeking questions', patients responded with some type of concern 50% (11/22) of the time (Table 7). Of

**Table 3**  
Variables associated with positioning of agenda-setting questions ( $N = 119$ )<sup>a</sup>.

Variables	Odds ratio	Std error	Z	P	CI
Pat. age	.973	.014	-1.90	.06	.948–1.00

<sup>a</sup> 0 = early; 1 = late.

**Table 4**  
Variables associated with type of agenda-setting question ( $N = 117$ )<sup>a</sup>.

Variables	Odds ratio	Std error	Z	P	CI
Pat. age	1.037	.013	2.85	.004	1.011–1.063
Pat. race	1.287	.541	.6	.549	.564–2.933

<sup>a</sup> 0 = question-seeking questions; 1 = concern-seeking questions.

**Table 5**  
Association between type of agenda-setting question and its position.

	Positioned early	Positioned late	Total
Question-seeking question	1 (1.72%)	57 (98.28%)	58
Concern-seeking question	22 (30.14%)	51 (69.86%)	73
Total	23	108	131

Note:  $\text{Chi}^2 (1, N = 131) = 18.03, p < .001$ .

these 11 responses, 64% (7/11) involved new medical concerns (this data not in table). Finally, compared to 'late', 'concern-seeking questions', 'early' ones were significantly more likely to generate some type of agenda item ( $\text{Chi}^2 (1, N = 73) = 4.99, p = .025$ ) (Table 7).

### 3.4. Agenda-setting habits

As noted above, no patient or physician demographic variables were significantly associated with the general incidence of physicians' agenda-pursuing questions. However, individual physicians varied dramatically in terms of their frequency of engaging in any agenda pursuit (i.e., asking any type of 'question-seeking' or 'concern-seeking' question). As seen in Table 8, 34/85 (40%) physicians *never* engaged in any form of agenda pursuit with any of their patients, compared to 8/85 (9%) physicians who *always* engaged in some type of agenda pursuit with every patient. The remaining 43/85 (51%) physicians engaged in some type of agenda pursuit 'sometimes', with the mean likelihood of doing so being below 50% (44%), and the mode likelihood being substantially lower (25%). However, among this group, 12/43 physicians engaged in some type of agenda pursuit 'frequently' (i.e., with a mean 71.38% of their patients; mode = 75%), while 31/43 physicians did so 'infrequently' (i.e., with a mean 33.71% of their patients; mode = 25%).

## 4. Discussion and conclusion

### 4.1. Discussion

In a context where patients frequently bring multiple, distinct concerns to visits, this article examined a central feature of the larger processes of agenda setting and mapping, which is physicians' pursuit of additional concerns beyond patients' chief concerns. This article documented the significant infrequency of primary-care physicians' attempts to solicit, in any fashion, the full range of patients' concerns in actual (i.e., video-recorded), ordinary (i.e., non-manipulated), acute care. Previous work has suggested that agenda pursuit is most effective when performed 'early' or 'up front' (i.e., before the completion of history taking), and when questions are designed with communication formats that are 'concern-seeking questions' that explicitly solicit, or allow for, the presentation of concerns (e.g., "Do you have any other concerns?"), as opposed to merely 'question-seeking questions' (e.g., "Do you have any other questions?"). Our results strongly support the relevance of both these characteristics. Almost all 'question-seeking questions' were issued 'late' (i.e., after history taking, e.g., during diagnosis, treatment/counseling, or closing), and of the very



**Table 6**  
Association between type of agenda-setting question and presentation of some agenda.

	No agenda presented	Some agenda presented	Total
Question-seeking question	54 (93.10%)	4 (6.90%)	58
Concern-seeking question	50 (68.49%)	23 (31.51%)	73
Total	104	27	131

Note:  $\chi^2 (1, N = 131) = 11.96, p = .001$ .

**Table 7**  
Association between position of 'concern-seeking questions' and presentation of some agenda.

	No agenda presented	Some agenda presented	Total
Positioned early	11 (50.00%)	11 (50.00%)	22
Positioned late	39 (76.47%)	12 (25.53%)	51
Total	50	23	73

Note:  $\chi^2 (1, N = 73) = 4.99, p = .025$ .

few that received some type of affirmative response, none elicited the presentation of new medical concerns. The fact that patients did not treat 'late', 'question-seeking questions' as soliciting additional concerns suggests that patients do not treat these questions as involving agenda setting or pursuit as it is understood in the literature. By contrast, 'concern-seeking questions' elicited some type of affirmative response (i.e., some type of agenda) almost one-third of the time, of which half constituted the presentations of new medical concerns. When these 'concern-seeking questions' were posed 'early', they elicited some type of agenda half of the time, whereas 'late' ones only did so one-quarter of the time.

If we follow our data (and prior research) and restrict the definition of agenda setting to the asking of 'concern-seeking questions' only, then physicians engaged in agenda setting in only 18% of visits. Previous research and the present study support the view that, when 'concern-seeking questions' are asked 'early', they are most effective. However, 'concern-seeking questions' were asked early in only 5% of visits. It may be added that 'concern-seeking questions' can be linguistically formatted in at least two different ways. That is, they can be formatted with words that bias answers toward 'no' responses (as does the word 'any', as in "Do you have *any* other concerns?"), or with words that bias answers toward 'yes' responses (as does the word 'some', as in "Do you have *some* other concerns?"). Recent literature [2] suggests that 'concern-seeking questions' are more effective if they are linguistically formatted so as to prefer 'yes' (vs. 'no') responses. However, in our entire sample, only 3% of visits benefitted from a completely optimized process of agenda pursuit (i.e., the 'early' asking of a 'concern-seeking question' that is linguistically formatted so as to favor a 'yes' response).

#### 4.2. Limitations

This study has several limitations. First, it was conducted in Los Angeles, CA, and rural portions of Pennsylvania, and the results may not be generalizable to different populations of physicians and patients in different geographic locations. Second, our physician population underrepresented females, although physician sex did not appear to be an important predictor of the observed outcomes. Third, as a secondary analysis of three data sets, our demographic and other predictor variables were limited to those collected uniformly across studies, and our data are slightly dated (2000–2005). Finally, as is always the case with observational data, other unmeasured factors that may be associated with both the use of these communication practices and the outcomes of interest may be responsible for some of the observed associations.

#### 4.3. Conclusion

This study documents that, while infrequent, early positioned, concern-seeking questions are effective in soliciting new medical concerns and can assist physicians in the larger processes of agenda mapping and setting. The overall rarity of agenda pursuit, in any form, is somewhat unexpected given the attention devoted to it in the training literature predating the collection of our data [27,29,30,35]. Certainly, those training programs have continued to gain traction in medical education, and future research needs to continue to document the incidence, nature, and effects of physicians' agenda pursuit [44].

#### 4.4. Practice implications

As previously noted (Table 8), the skewed distribution across physicians regarding their likelihood of engaging in any type of agenda pursuit (with a clear distinction between 'frequent' and 'infrequent' askers) suggests that individual habits of medical interviewing are a critical factor in whether or not agenda setting occurs. There is general consensus that the inclusion of agenda pursuit into the routine of medical interviewing is important, and this, in turn, highlights the significance of training. The methods for training physicians to implement the practice of up-front agenda pursuit, in its fully optimized form, already exist and are relatively inexpensive [2]. Given the documented benefits of up-

**Table 8**  
Frequency of engaging in any agenda setting by physicians (N = 85).

Frequency of asking patients	Number (%) of physicians	Mean (mode) percentage of patients asked	Mean (mode) number of visits/physician
Never	34 (40%)	0%	3.9 (3.0)
Sometimes	43 (51%)	44% (25%)	6.0 (4.0)
• ≤50% Patients	• 31 (37%)	• 33.71% (25%)	• 5.90 (4.0)
• >50% Patients	• 12 (14%)	• 71.38% (75%)	• 6.25 (4.0)
Always	8 (9%)	100%	2.25 (1.0)

front agenda pursuit, medical educators and physicians may wish to invest more in its development and implementation.

### Conflict of interest

None of the authors have conflicts of interest.

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### References

- [1] C.H. Braddock III, K.A. Edwards, N.M. Hasenberg, T.L. Laidley, W. Levinson, Informed decision making in outpatient practice: time to get back to basics, *Jama* 282 (24) (1999) 2313–2320.
- [2] J. Heritage, J.D. Robinson, M.N. Elliott, M. Beckett, M. Wilkes, Reducing patients' unmet concerns in primary care: the difference one word can make, *J. Gen. Intern. Med.* 22 (10) (2007) 1429–1433.
- [3] J. Middleton, R.K. McKinley, C.L. Gillies, Effect of patient completed agenda forms and doctors' education about the agenda on the outcome of consultations: randomised controlled trial, *BMJ* 332 (7552) (2006) 1238–1242.
- [4] K. Rost, R. Frankel, The introduction of the older patient's problems in the medical visit, *J. Aging Health* 5 (3) (1993) 387–401.
- [5] E. Krupat, R. Frankel, T. Stein, J. Irish, The Four Habits Coding Scheme: validation of an instrument to assess clinicians' communication behavior, *Patient Educ. Couns.* 62 (1) (2006) 38–45.
- [6] J.D. Robinson, An interactional structure of medical activities during acute visits and its implications for patients' participation, *Health Commun.* 15 (1) (2003) 27–59.
- [7] H.B. Beckman, R.M. Frankel, The effect of physician behavior on the collection of data, *Ann. Intern. Med.* 101 (5) (1984) 692–696.
- [8] M.K. Marvel, R.M. Epstein, K. Flowers, H.B. Beckman, Soliciting the patient's agenda: have we improved? *Jama* 281 (3) (1999) 283–287.
- [9] J. Heritage, J.D. Robinson, The structure of patients' presenting concerns: physicians' opening questions, *Health Commun.* 19 (2) (2006) 89–102.
- [10] J. White, W. Levinson, D. Roter, Oh, by the way . . . , *J. Gen. Intern. Med.* 9 (1) (1994) 24–28.
- [11] J.C. White, C. Rosson, J. Christensen, R. Hart, W. Levinson, Wrapping things up: a qualitative analysis of the closing moments of the medical visit, *Patient Educ. Couns.* 30 (2) (1997) 155–165.
- [12] L. Dyche, D. Swiderski, The effect of physician solicitation approaches on ability to identify patient concerns, *J. Gen. Intern. Med.* 20 (3) (2005) 267–270.
- [13] M. Peltenburg, J.E. Fischer, O. Bahrs, S. van Dulmen, A. van den Brink-Muinen, The unexpected in primary care: a multicenter study on the emergence of unvoiced patient agenda, *Ann. Fam. Med.* 2 (6) (2004) 534–540.
- [14] H.P. Rodriguez, M.P. Anastario, R.M. Frankel, et al., Can teaching agenda-setting skills to physicians improve clinical interaction quality? A controlled intervention, *BMC Med. Educ.* 8 (1) (2008) 3.
- [15] R.M. Epstein, L. Mauksch, J. Carroll, C.R. Jaén, Have you really addressed your patients' concerns? *Fam. Pract. Manag.* 15 (3) (2008) 35–40.
- [16] R.M. Frankel, M.P. Salyers, K.A. Bonfils, S.K. Oles, M.S. Matthias, Agenda setting in psychiatric consultations: an exploratory study, *Psychiatr. Rehabil. J.* 36 (3) (2013) 195–201.
- [17] L.J. Haas, J. Houchins, J.P. Leiser, Changing family physicians' visit structuring behavior: a pilot study, *Fam. Med.-Kans. City* 35 (10) (2003) 726–729.
- [18] N. Gobat, P. Kinnersley, J.W. Gregory, T. Pickles, K. Hood, M. Robling, Measuring clinical skills in agenda-mapping (EAGL-I), *Patient Educ. Couns.* 98 (10) (2015) 1214–1221.
- [19] N. Gobat, P. Kinnersley, J.W. Gregory, M. Robling, What is agenda setting in the clinical encounter? Consensus from literature review and expert consultation, *Patient Educ. Couns.* 98 (7) (2015) 822–829.
- [20] P. Bower, W. Macdonald, E. Harkness, et al., Multimorbidity, service organization and clinical decision making in primary care: a qualitative study, *Fam. Pract.* 28 (5) (2011) 579–587.
- [21] D.M. Brock, L.B. Mauksch, S. Witteborn, J. Hummel, P. Nagasawa, L.S. Robins, Effectiveness of intensive physician training in up-front agenda setting, *J. Gen. Intern. Med.* 26 (11) (2011) 1317–1323.
- [22] L. Wissow, A. Gadowski, D. Roter, S. Larson, B. Lewis, J. Brown, Aspects of mental health communication skills training that predict parent and child outcomes in pediatric primary care, *Patient Educ. Couns.* 82 (2) (2011) 226–232.
- [23] R.M. Epstein, P. Franks, K. Fiscella, et al., Measuring patient-centered communication in patient-physician consultations: theoretical and practical issues, *Soc. Sci. Med.* 61 (7) (2005) 1516–1528.
- [24] L. Del Piccolo, M. Angela Mazzi, S. Scardoni, M. Gobbi, C. Zimmermann, A theory-based proposal to evaluate patient-centred communication in medical consultations: the Verona Patient-centred Communication Evaluation scale (VR-COPE), *Health Educ.* 108 (5) (2008) 355–372.
- [25] F. Lang, R. McCord, L. Harvill, D.S. Anderson, Communication assessment using the common ground instrument: psychometric properties, *Fam. Med.-Kans. City* 36 (3) (2004) 189–198.
- [26] M.S. Matthias, M.P. Salyers, R.M. Frankel, Re-thinking shared decision-making: context matters, *Patient Educ. Couns.* 91 (2) (2013) 176–179.
- [27] L. Bickley, P.G. Szilagyi, Bates' Guide to Physical Examination and History-Taking, Lippincott Williams & Wilkins, 2012.
- [28] A. Fortin, F. Dwamena, R. Frankel, R. Smith, Smith's Patient Centered Interviewing: An Evidence-Based Method, 3rd. Ed., McGraw Hill, New York, 2012.
- [29] J. Silverman, S.M. Kurtz, J. Draper, J. van Dalen, Skills for Communicating with Patients, 3rd ed., Radcliffe Pub., Oxford, UK, 2013.
- [30] L.H. Baker, D. O'Connell, F.W. Platt, What else? Setting the agenda for the clinical interview, *Ann. Intern. Med.* 143 (10) (2005) 766–770.
- [31] J.G. Carroll, F.W. Platt, Engagement the Grout of the Clinical Encounter, 5, JCOM, Wayne, PA, 1998, pp. 43–47.
- [32] K.J. Kemper, J.M. Foy, L. Wissow, S. Shore, Enhancing communication skills for pediatric visits through on-line training using video demonstrations, *BMC Med Educ.* 8 (1) (2008) 8.
- [33] M. Lipkin, T.E. Quill, R.J. Napodano, The medical interview: a core curriculum for residencies in internal medicine, *Ann. Intern. Med.* 100 (2) (1984) 277–284.
- [34] L.B. Mauksch, D.C. Dugdale, S. Dodson, R. Epstein, Relationship, communication, and efficiency in the medical encounter: creating a clinical model from a literature review, *Arch. Intern. Med.* 168 (13) (2008) 1387–1395.
- [35] G. Makoul, The SEGUE framework for teaching and assessing communication skills, *Patient Educ. Couns.* 45 (1) (2001) 23–34.
- [36] R.M. Frankel, T. Stein, Getting the most out of the clinical encounter: the four habits model, *Perm. J.* 3 (3) (1999) 79–88.
- [37] L.B. Mauksch, L. Hillenbur, L. Robins, The establishing focus protocol: training for collaborative agenda setting and time management in the medical interview, *Fam. Syst. Health* 19 (2) (2001) 147–157.
- [38] Z. Berger, S. Saha, P.T. Korthuis, et al., Agenda-setting in routine primary HIV care encounters, *J. Gen. Intern. Med.* 26 (2011) S242–S243.
- [39] D.C. Dugdale, R. Epstein, S.Z. Pantilat, Time and the patient-physician relationship, *J. Gen. Intern. Med.* 14 (S1) (1999) 34–40.
- [40] K. Bergh, Time use and physicians' exploration of the reason for the office visit, *Fam. Med.* 28 (4) (1996) 264–270.
- [41] J.D. Robinson, J. Heritage, The structure of patients' presenting concerns: the completion relevance of current symptoms, *Soc. Sci. Med.* 61 (2) (2005) 481–493.
- [42] C.A. Barry, C.P. Bradley, N. Britten, F.A. Stevenson, N. Barber, Patients' unvoiced agendas in general practice consultations: qualitative study, *BMJ* 320 (7244) (2000) 1246–1250.
- [43] D.W. Hosmer Jr., S. Lemeshow, R.X. Sturdivant, Logistic regression for matched case-control studies, *Appl. Logist. Regres. Third Ed.* (1989) 243–268.
- [44] J.D. Robinson, J. Heritage, How patients understand physicians' solicitations of additional concerns: implications for up-front agenda setting in primary care, *Health Commun.* (2015) 1–11.