The Effect of Physician Solicitation Approaches on Ability to Identify Patient Concerns

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CONTEXT: Studies showing that physicians often interrupt the patient's opening statement assume that this compromises data collection.

OBJECTIVE: To explore the association between such interruptions and physician accuracy in identifying patient concerns.

DESIGN: This study replicates the Beckman-Frankel methodology and adds exit interviews to assess physician understanding. The authors audiotaped a convenience sample of 70 encounters and surveyed both parties following the visit.

SETTING: A community-based ambulatory clinic.

PARTICIPANTS: Internal medicine residents (77%) and attending physicians and their adult, English-speaking patients who were primarily low income and ethnic minority.

OUTCOME MEASURE: The Index of Understanding measures patient-physician problem list concordance. It is the percentage of patient problems, obtained on exit, that the physician correctly identifies.

RESULTS: In 26% of the visits, patients were allowed to complete their agenda without interruption; in 37% the physicians interrupted; and in 37% no inquiry about agenda was made in the first 5 minutes. Neither physician experience nor their assessment of time pressure or medical difficulty was associated with these rates. Exit interviews showed no significant difference in Index of Understanding between those involving completion of agenda (84.6%) and those involving patient interruption (82.4%) ($P=.83$). But when the physician did not solicit an agenda, the concordance was 59.2%, significantly lower than either the completion ($P=.014$) or the interruption group ($P=.013$).

CONCLUSION: Interruption as defined by Beckman-Frankel does not curtail ability to identify patient concerns, but failure to ask for the patient's agenda associates with a 24% reduction in physician understanding.

T he communication between patient and physician, as with all human interaction, yields but stubbornly to scientific analysis. Despite sophisticated methodologies for teasing apart the critical elements of discourse in a medical encounter, clear links to health outcomes prove elusive.[1–4] In this study, we examined physician approaches to the beginning of the medical interview and the effect these have on the accuracy of data gathering.

The medical interview is often divided into phases for purposes of study and teaching. The survey phase is that in which the physician usually obtains the patient concerns or patient agenda. In a well-known study of the survey phase, Beckman and Frankel[5] found that physicians prevented patients from completing an opening statement 77% of the time. Those who interrupted their patients did so in a mean time of 18 seconds. They concluded, "There is little doubt that the physician response and, in particular, early termination or interruption of patients during their initial expression of concerns at a time of the visit specifically reserved for such discourse, inhibits further patient identification of additional concerns." Marvel et al.[6] repeated the study with a larger sample and found that physicians prevented a completed opening statement in 72% of the visits. Those who interrupted did so in a mean time of 23 seconds. Twenty-five percent did not solicit the patient agenda at all.

Numerous authors have emphasized the importance of the physician taking a careful survey of patient concerns,[7–9] and many cite the Beckman-Frankel study of physician interruption as evidence of physician difficulty with listening.[10–13] Yet the templates developed for taking a survey of patient concerns sometimes recommend physician activity that would constitute interruption by the Beckman-Frankel definition.[14,15] Further, Beckman and Frankel themselves acknowledge that physician interruption might sometimes help patients formulate their concerns (p. 695).[5] Marvel et al. found in their study that physicians with the most training in interviewing tended to interrupt with focused questions and then resume solicitation (p. 286).[6]

To date, there have been no studies to determine whether physician interruption compromises physician understanding of patient concerns or patient satisfaction, or to explore why some physicians interrupt so quickly. We hypothesized that physicians who solicit an agenda from their patients and who allow them to complete a statement of their concerns would have a better understanding of their patient's problems than those who do not, and that patients would have a higher rate of satisfaction if they are allowed to complete their opening statement. We also hypothesized that physician experience would associate positively with solicitation and completion rates and that physician concern about time pressure and medical difficulty would associate negatively.

METHODS

During the period from June 2001 to March 2002, the authors audiotaped a convenience sample of 101 patient-physician encounters by placing a recorder in the physician's office. The sample included resident and attending internal medicine physicians and their English-speaking patients. The study was conducted in an inner-city neighborhood health center affiliated with a large teaching hospital. The project was approved by the Institutional Review Board of Montefiore Medical Center. The research was described to participants as a study of patient-physician communication. Consent for participation was obtained from both physicians and patients by one of the authors or a research assistant. Physician subjects were recruited to represent all levels of experience, and an effort to obtain sample encounters from a large number of physicians

Table 1. Patient Exit Interview

What concerns did you want to speak to the doctor about on this visit, whether or not you were able to:

1.
2.
3.
4.

For today's visit to the doctor, complete the following statements with:

Always	Usually	About half of the time	Occasionally	Never

1. The doctor seemed interested in me as a person_____
2. The doctor seemed in a hurry_____
3. The doctor was friendly and respectful_____
4. The doctor answered my questions_____
5. The doctor explained things in words I could understand_____
6. The doctor interrupted me_____
7. The doctor took as much time as needed_____
8. The doctor helped me explain my concerns_____

was made to compensate for a possible learning effect over the course of the study.

Following the visit, patients were interviewed by one of the authors or a research assistant and asked to list the concerns they had in mind to speak to the doctor about on that day, regardless of whether or not they were discussed. Patients were also given a patient satisfaction questionnaire (see Table 1), derived from the Press Ganey Inventory,[16] a standardized instrument for use in ambulatory settings. At the same time, physicians were given a questionnaire asking them to list the concerns the patient raised in the visit and Likert scales to rate the physician's sense of the time pressure and medical difficulty in the visit (see Table 2).

The recorded interviews were coded in a method similar to that used in the Beckman-Frankel and the Marvel et al. studies which involved the following steps:

Nonsolicitation

It was determined whether the physician solicited the patient's agenda at the beginning of the interview (in this study, the first 5 minutes) by making any open-ended inquiry regarding the patient's current concerns such as "What brings you in today?" "How can I help you?" or "Anything new?" Visits in which no such solicitation occurred within the first 5 minutes were coded as nonsolicitation.

Completed

For interviews in which a solicitation occurred, the patient's response was coded as completed or interrupted. A response was coded as completed if any of the following occurred: 1) the patient gave a negative response to the physician solicitation; 2) the patient made a statement of completion such as "That's it" or indicated the same by a significant pause; or 3) the patient stopped to address a health-related question to the physician.

Interrupted

Sequences were coded as interrupted when, prior to completion, the physician disrupted the patient's statement. Any physician interjection other than an acknowledgment such as "Okay. . ." or an open-ended question, "Anything else?" was considered an interruption. In these interrupted sequences, we measured the time to interruption (TTI), the time in seconds between the physician solicitation and the point of interruption.

Index of Understanding

To determine the degree to which the physician understood the patient's agenda, we employed a methodology similar to previous patient-physician problem identification concordance studies.[17] We began by examining the list of concerns provided by the patient in the exit interview and eliminated any that were redundant or not in the form of a problem (e.g., "I need a written excuse for today's visit"). We then examined the physician's list for matches, giving credit for any items that approximated those of the patient's by virtue of being within the same physiological area or organ system. From this we derived the degree of concordance, the outcome measure, which we refer to as the Index of Understanding (IOU). This figure is derived from the number of patient concerns correctly identi-

Table 2. MD Exit Survey

Please list (in the patient's words) the concerns raised in this encounter:

1.
2.
3.
4.

Please rate the following statements as they pertain to the patient you have just seen:

1. I had adequate time to devote to this patient encounter.

Strongly disagree	Disagree	Agree	Strongly agree

2. This patient was medically difficult.

Strongly disagree	Disagree	Agree	Strongly agree

fied by the physician, divided by the total number of patient concerns, expressed as a percentage.

RESULTS

Physicians

A total of 27 physicians contributed taped encounters to the study. No physician who was approached declined to participate. Physicians were grouped by ascending levels of experience, with 36 encounters obtained from a group of 16 postgraduate year (PGY) Is and PGY IIs, 12 encounters from a group of 6 PGY IIIs and IVs, and 22 encounters from a group of 5 senior attending physicians. Thirty-one tapes were excluded because of poor audio quality.

Patients

The sample age and ethnicity demographics of the patient sample were consistent with those of the general clinic population except that Hispanics were significantly underrepresented (52% clinic, 38% sample; $Z=2.34$; $P=.019$), probably due to the exclusion of encounters not conducted in English. There was also an overrepresentation of the Other Ethnicities category (sample 6%, clinic 2%; $Z=2.36$; $P=.018$). Patients in the study listed a mean of 2.42 problems with a range of 1 to 7.

Reliability Measures

The authors conducted all the coding and scoring. To assess interrater reliability, a sample of 10 (14%) of the audiotapes were coded independently by the authors for Nonsolicitation, Interruption, or Completion. In these, they agreed on 90% of the sample. They also scored 13 (19%) of the problem lists independently for the IOU, and here achieved 84.6% agreement. Interrater agreement here is shown in percentages because κ becomes unstable at high levels of agreement.[18]

Frequency of Solicitation Types

In 26 (37%) of the encounters, physicians made no explicit inquiry about patient concerns in the first 5 minutes. In 26 (37%) of the encounters, physicians solicited the patient agenda but interrupted prior to its completion. Physicians allowed the patient to complete an opening statement in 18 (26%) of the encounters.

Times to Interruption

Times between the physician solicitation and interruption ranged between 3 seconds and 145 seconds. The mean TTI was 16.5 seconds.

Understanding of Patient Concerns

In the 26% of encounters in which patients were allowed to complete an opening statement, the physicians achieved a mean IOU of 84.6%, that is, they could correctly identify that percentage of the problems that the patient brought to the visit. Those who interrupted patients achieved an IOU of 82.2%. In the group where no solicitation occurred in the first 5 minutes of the visit, the mean IOU was 59.2%. A one-way ANOVA indicates a significant difference among the means ($P=.016$). A posthoc comparison of means indicates that the No Solicita-

tion group had statistically lower understanding than the Completed Statements group ($P=.014$) and the Interrupted Statements group ($P=.013$). There was no significant difference between the Completed Statements and the Interrupted Statements group means of 84.6% and 82.2% ($P=.83$). Within the group of visits in which the physician interrupted the patient, no association was found between the Times to Interruption and the physician's Index of Understanding.

Effect of Other Variables

An analysis of the 3 groupings of physicians by experience showed no association with level of training and the key variables; similar proportions of patients were allowed to complete their agenda by all doctors ($\chi^2[2, N=70]=.041$; $P=.98$). Analysis of the dichotomized physician Likert data (Table 2) showed that the frequency with which physicians allowed patients to complete their opening statements was not associated with perceived time pressure ($\chi^2[2, N=70]=.533$; $P=.766$) or degree of medical difficulty ($\chi^2[2, N=70]=1.526$; $P=.466$).

The patient satisfaction inventory (Table 1) resulted in a virtual ceiling effect, with 98% of the items rated at the highest level of satisfaction, including item number 6 about physician interruption. The items were scored 1 through 5, with 5 being the highest (including the reverse-coded items to check for understanding and automatic response patterns). The inventory was discontinued at the halfway point of data collection as it became apparent that it could not be analyzed. Our speculation is that administering the inventory on site, immediately after their encounter, elicited a strong social desirability response, especially with this low-income population.

DISCUSSION

Our study sought to replicate the work of Beckman-Frankel[5] and Marvel et al.[6] and to gain greater understanding of the cause and effect of physician interruption. We found distributions of solicitation types and times to interruption similar to those found by the Beckman-Frankel and Marvel et al. studies. As expected, physicians who solicited an agenda from their patients and allowed them to complete a statement of concerns were able to report their patients' problems more accurately than doctors who did not make such inquiry. However, our expectation that interrupting patients would negatively affect the accuracy of information collected by physicians proved not to be true: physicians' ability to identify patient concerns, as measured by the IOU, was not affected by interruption.

Our findings suggest that solicitation carries more weight than interruption in the collaborative exchange necessary for effective bilateral communication. Several possibilities might account for this. Interruption by itself might not be a robust variable, or it may be defined too broadly to discriminate the subtleties of doctor-patient communication. Alternatively, as suggested by Beckman and Frankel, interruption might actually serve a positive function if it is well timed. And perhaps the act of physician solicitation itself accords a voice to the patient that reduces the disruptive impact of subsequent interjections by the physician.

This study as well as that of Marvel et al. found that a large percentage of the visits contained no physician inquiry about current patient concerns. While this might be attributed to an effect of physician-initiated follow-up visits, Marvel

et al.'s study found that physician-initiated and patient-initiated encounters did not differ significantly in solicitation rates.

Previous studies have shown that when physicians understand patient concerns, there is an improvement in patient satisfaction[7,8] and patient adherence.[19–23] This study demonstrates that failure to solicit the patient's agenda is also associated with a significantly diminished physician database.

Our speculation that external factors such as level of physician experience, degree of medical difficulty, or time pressure might affect our variables was not borne out. The findings question the assumption that time pressure or physician anxiety about case difficulty account for lowered rates of solicitation.[15,21]

This study is limited by the fact that our principal outcome measure, the Index of Understanding, employs a relatively new instrument without a known sensitivity. It may have been unable to discriminate differences in the understanding levels of physicians who interrupted their patients and those who did not. In addition, the sample was of modest size, involved a preponderance of residents, a single clinic, excluded Spanish-speaking subjects, and was drawn from a population of relatively low socioeconomic status, each of which might affect the generalizability of the findings.

The study leaves unanswered the question of how interruption might affect patient satisfaction. If a positive association were to be demonstrated between patient statement completion rates and patient satisfaction, Beckman and Frankel's conclusions might be supported on the basis of patient-physician relationship enhancement. Future studies might use a refined definition of interruption to distinguish physician interjections that assume control of the discourse from those that are used to organize, clarify, or facilitate the patient's presentation. One alternative would be an interactive coding system that would define interruption based on whether or not patients were able to resume their narrative thread after the physician interjection (K. Marvel, PhD, personal communication, December 2001). The landmark study of Beckman and Frankel, with its appealing simplicity, highlights critical issues for communication research and physician training. However, our efforts to grasp the vicissitudes of human interaction may require an expansion beyond linear methodologies.

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