Medical Interviewing by Exemplary Family Physicians

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BACKGROUND. Little is known about the extent to which models of ideal physician-patient interviews are actually practiced by physicians. This study examined physician-patient communication during medical interviews by exemplary family physicians.

METHODS. We performed a cross-sectional study of verbal exchanges using 300 transcripts of office visits made to two groups of family physicians: 9 exemplars and 20 controls. The exemplars were family physicians with fellowship training in family therapy; the control group consisted of a convenience sample of board-certified family physicians with no special training in communication skills or counseling. Data were collected from June 1995 to July 1996. Physician statements were rated according to the Level of Physician Involvement model, which measures physicians' abilities to collaborate with patients and address the psychosocial concerns of patients and their families. Patient satisfaction ratings were obtained by a research assistant immediately after the visit.

RESULTS. Compared with the control physicians, the exemplars showed higher levels of psychosocial involvement with patients during routine office visits. In particular, they involved patients more in the medical interview, offered more emotional support, and showed more family involvement. Despite this greater depth of involvement, the length of office visits did not differ between the two physician groups.

CONCLUSIONS. Our findings show that exemplars were more involved with their patients and provided more family-oriented care than community physicians. Exemplars routinely applied a biopsychosocial approach, collaborating with patients and addressing psychosocial topics without sacrificing efficiency, while community physicians focused on biomedical issues.

KEY WORDS. Physician-patient relationship; family physicians; family practice; family; office visits. *(J Fam Pract 1998; 47:343-348)*

Despite rapid changes in medical practice, the physician-patient relationship remains the foundation of medical care.[1] Models of ideal physician-patient interviews generally stress the importance of eliciting the patients' beliefs, intentions, and emotional responses to their medical condition.[2-4] However, little is known about the extent to which these models are actually practiced by physicians—even those who are well-trained in medical interviewing—and the extent to which such interviewing is feasible within the time constraints of everyday clinical practice.

Studies of exemplary physicians (those deemed to have superior medical interviewing skills) have emphasized these physicians' theoretical orientations and how they describe their own interviewing behavior. For example, Epstein and coworkers,[5] outlined five models of patient-physician communication that have been espoused by exemplars in medical interviewing. Langley and Till[6] interviewed family physicians and consultants identified by peers as being exemplary in their area of practice. In these studies, however, no objective knowledge is presented about whether these exemplars actually practice the way they describe their work or whether their models are feasible outside of training settings.[7]

One study did examine the actual behavior of exemplary physicians. Branch and Malik[8] videotaped five experienced clinicians to observe the patient-physician interactions, particularly their discussions of personal, emotional, and family issues. However, the investigators did not use a nonexemplary comparison group to determine what was distinctive about the exemplars' skills, and they did not use a standardized observational method that could be replicated by other investigators. Further, other than the fact that the exemplary group was nominated by peers, there is no indication that they had any special training or expertise in medical interviewing.

A scientifically rigorous study of exemplars in medical interviewing would require: (1) well-defined criteria

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for selecting exemplars; (2) a nonexemplar comparison group of experienced physicians in the same specialty; and (3) a reliable method of describing and analyzing actual physician interviewing behavior. Our study utilized these methods to examine the interviewing practices of exemplary physicians. In particular, we were interested in studying how the interviewing skills of primary care exemplars differ from those of nonexemplar primary care physicians, specifically, whether the exemplars require more time for patient visits, whether they were more family-centered during medical visits, and whether patients of the exemplars are more satisfied with the visits.

METHODS

Description of the Interviewing Model

The Levels of Physician Involvement (LPI) model, developed by Doherty and Baird,[9] delineates five levels, each with two sublevels, of physician skills used to address the psychosocial concerns of patients and families (Table 1). The levels are assumed to constitute a developmental sequence for clinicians, with each higher level requiring additional physician knowledge and skills in addressing increasingly complex psychosocial issues. For example, Level 3 skills are a prerequisite for competency at Level 4. Higher levels of physician involvement, however, are not deemed appropriate for every interview. The level of involvement in any particular interview will depend on a variety of factors, such as the time available, the nature of the chief complaint, the nature of the patient-physician relationship, and the skills of the physician. Operational definitions for each level have been developed and applied in previous studies of residents'[10] and university faculty members'[11,12] interviews with their patients.

Procedure

Twenty-nine family physicians and 300 patients participated in this descriptive, cross-sectional study. Two groups of physicians were recruited: 20 family physicians from semirural communities

TABLE 1

The Levels of Physician Involvement Model

Level 1. Medical Issues—Physician-Centered

Interview is limited to biomedical problems, focused on the physician's agenda; information is gathered for the physician's data bank, not discussed with patient or family.

(1A) Individual Focus: Discussion is limited to immediate medical symptoms of individual patient.

(1B) Family Context: Physician gathers family information related to the medical problem, such as family history of an illness.

Level 2. Collaborative Information Exchange

Physician and patient/family are coparticipants in the exchange of information on a cognitive level; physician elicits patient/family opinions, understanding, and expectations and shares his/her own opinions.

(2A) Individual Focus: Collaborative information exchange occurs with individual patient.

(2B) Family Context: Physician broadens information exchange to include family members who are present or inquires about family viewpoints with the individual patient.

Level 3. Dealing with Affect

Physician identifies and responds to emotional reactions of patient/family to illness and other life stresses. Provider responds empathically without intellectualizing, being emotionally distant, or offering premature advice or reassurance.

(3A) Individual Focus: Emotional concerns are discussed with the individual patient.

(3B) Family Context: Physician responds to emotional concerns of family members, if present, or explores family reactions with the individual patient.

Level 4. Basic Psychosocial Intervention

Physician helps patient develop new ways to cope with psychosocial issues related to the patient's health. This can range from a brief change-oriented discussion during a routine medical appointment to several sessions of counseling.

(4A) Brief Individual Counseling: Interactions are focused on the individual patient.

(4B) Brief Family Counseling: Interactions are focused on changes in family patterns that affect the patient's health, with or without family members present.

Level 5. Individual or Family Therapy

Physician meets with patient or family to improve individual or family functioning. The purpose of the sessions is clearly identified as therapy and the issues discussed may be independent of the patient's medical concerns.

(5A) Individual Psychotherapy: The physician meets regularly with an individual patient for formal psychotherapy.

(5B) Family Therapy: The physician meets regularly with the patient and family to change unhealthy patterns within the family system.

("community physicians") in north central Colorado and nine family physicians from the United States and Canada with fellowship training in family therapy ("exemplars"). The community physicians were randomly selected from the county membership list of board-certified family physicians. The exemplars were identified from a list generated by the Family Working Group of the Society of Teachers of Family Medicine. Demographic information for the participating physicians and patients is shown in Table 2.

A letter of invitation was sent to potential physician participants, explaining the goals, methods, and possible benefits of the project. An informed consent form was enclosed with the letter. The letter of invitation was followed by a telephone call to encourage participation, respond to questions, and arrange for data collection. From a list of 73 community family physicians, 22 were not contacted because they were no longer in community practice, were unavailable because of maternity leave, or were no longer living in the community. Of the 51 eligible physicians, 22 (43%) agreed to participate, 26 declined, and 3 did not respond. Two of those who agreed to participate were unavailable during the data collection period. Of the 11 exemplary physicians contacted, 10 (91%) agreed to participate. One physician did not complete the data collection.

To collect data from community physicians, a research assistant traveled to each physician's office to audiotape 10 to 12 interviews. Immediately before seeing the physician, each patient was invited to participate and given an informed consent form. A wireless microphone was placed in the examination room of all consenting patients. The research assistant operated a receiver from a nearby room to audiotape the physician-patient interview. With this procedure, 214 patient interviews were recorded; an average of 10.7 (range nine to 13) from each community physician.

Since the exemplars were located all over North America, they were mailed audiocassettes and used microcassette recorders to audiotape patient interviews. A staff member in each physician's office obtained patient consent and collected the patient exit questionnaires. Eighty-six patient interviews were recorded; an average of 9.6 (range 5 to 11) interviews per exemplar.

For both groups of physicians, all patients on the schedule were invited to participate regardless of the presenting problem. Physicians were asked to collect data during a typical clinical day. All physicians rated the severity of their patients' medical problems on that day as typical of their practice. The rates of participation for the community physicians' patients and exemplars' patients were 87% (217/249) and 80% (83/104), respectively.

The physicians also provided ratings indicating their familiarity with each of the audiotaped patients, and they provided an estimate of the number of patients they see in a typical half-day of clinic.

An independent transcription service made written transcripts from the audiotaped interviews. Physician-identifying information was removed from the transcripts, and the transcripts were then read and coded by the primary investigator. Coding consisted of categorizing each physician interaction according to the LPI model. Each physician statement, regardless of length, received one rating indicating the level of involvement. A physician statement, ranging from a single word to several sentences, included all verbalizations by the physician between each patient statement. (Social interactions preceding the opening statement of concerns were not included in the coding.) The average transcript contained 39 physician statements, yielding 39 ratings ranging from level 1A to 5B. This coding method has been shown in prior studies[10-12] to have adequate reliability.* A research assistant independently coded 38 (13%) of the transcripts to assess interrater reliability. The agreement ratio was 82% (31 of 38) for the highest level of involvement for each interview and 78% (2444 of 3148) for the level of individual physician statements. The kappa statistic was .50, showing a moderately high agreement beyond chance between raters independently coding for the highest level of involvement for each interview.

TABLE 2

Demographics of Participating Physicians and Patients

Physicians' Characteristics	Community (n = 20)	Exemplary (n = 9)	Total (n = 29)
Sex, % women	15	33	21
Years postresidency experience, average	11.6	8.3	10.6
Patients seen per half day clinic, average	10.6	11.7	10.9
Patients' Characteristics	**Community* (n = 214)**	**Exemplary† (n = 86)**	**Total (n = 300)**
Sex, % women	52	67	56
Age, average	35.0	34.7	34.8

*Patients under the care of a community physician.
†Patients under the care of an exemplary physician.

RESULTS

The data initially were analyzed according to the highest level of involvement shown by the physician in each interview, even if the highest level composed only a brief portion of the overall interview. Table 3 shows the find-

* Coding details are available on the *Journal's* Web site at www.jfp.denver.co.us.

TABLE 3

Highest Level of Involvement Reached in Each Interview by Community and Exemplary Physicians, Measured on the LPI

Level	Community No. (%)		Exemplary No. (%)	
Level 1	110	(51.4)	17	(19.8)
Level 2	69	(32.2)	30	(34.9)
Level 3	35	(16.4)	33	(38.4)
Level 4	0	(0.0)	4	(4.6)
Level 5	0	(0.0)	2	(2.3)
Total	**214**	**(100.0)**	**86**	**(100.0)**

LPI denotes the Levels of Physician Involvement model.
Comparison of Levels 1, 2, and 3: $\chi^2(2) = 35.54$, $P < .01$.

TABLE 4

Number of Community Physician and Exemplary Physician Interactions at Each Level of Involvement on the LPI

Level	Community No. (%)		Exemplary No. (%)	
Level 1	7627	(92.4)	2824	(79.3)
Level 2	518	(6.3)	477	(13.4)
Level 3	106	(1.3)	199	(5.6)
Level 4	0	(0.0)	40	(1.1)
Level 5	0	(0.0)	21	(0.6)
Total	**8251**	**(100.0)**	**3561**	**(100.0)**

LPI denotes the Levels of Physician Involvement model.
Comparison of Levels 1, 2, and 3: $\chi^2(2) = 488.68$, $P<.01$.

ings for the number and percentage of interviews at each level. Community physicians' interviews were overwhelmingly at Levels 1 and 2, while exemplars' interviews were primarily at Levels 2 and 3. These differences were significant with a chi-square test ($\chi^2(2)=35.54$, $P < .01$) (Values in Levels 3, 4, and 5 were collapsed because of small numbers in Levels 4 and 5.). When analyzed according to individual physicians, the mean level of involvement for each community physician was 1.6 (range: 1.2 to 2.5) and for each exemplar was 2.4 (range: 1.6 to 3.8) ($t = 4.21$, $P < .05$).

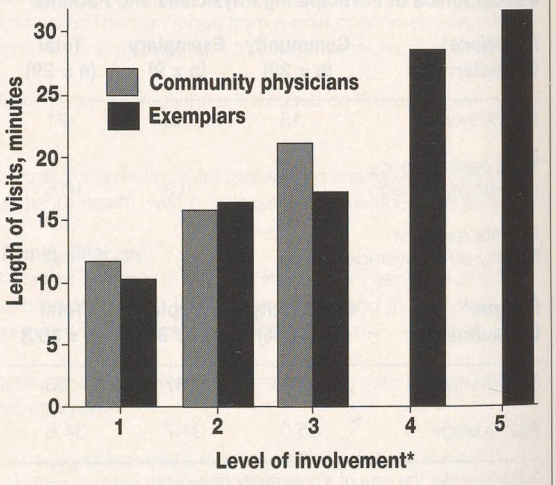
The data were also analyzed using specific physician statements (instead of highest level obtained in an interview) as the unit of analysis. These results are shown in Table 4. Again, exemplars had more statements at higher levels of involvement than the community physicians ($\chi^2(2)=488.68$, $P <. 01$). Specifically, exemplars made collaborative Level 2 statements more than twice as frequently as community physicians, and they made emotionally supportive Level 3 statements more than four times as frequently. On an absolute scale, however, both groups showed the highest proportion of statements at Level 1, because Level 1 captures routine medical questions and advice. The main difference was that exemplars used these statements about 80 percent of the time, compared with approximately 92 percent for community physicians.

Average visit length of Levels 1 to 3 for exemplars (mean: 15 minutes, 13 seconds) and community physicians (mean: 14 minutes, 20 seconds) was not statistically significant ($t = 1.30$, $P = .229$) (Figure 1). When the Level 4 and 5 visits by exemplars are included, the difference in average visit length between the physician groups was still not significant. The average lengths of office visits across Levels 1 to 5 (coded as highest level per interview) for all physicians were: Level 1 = 11 minutes, 29 seconds; Level 2 = 15 minutes, 35 seconds; Level 3 = 19 minutes, 12 seconds; Level 4 = 28 minutes, 27 seconds; and Level 5 = 31 minutes, 20 seconds. A one-way analysis of variance indicated that the differences among levels were statistically significant ($F(4,256) = 12.77$, $P <. 01$) with higher levels using more time. Although the exemplars had higher overall levels of involvement than the community physicians, their Level 3 visits were significantly shorter than community physician visits ($t = 4.19$, $P < .01$).

The exemplars discussed family issues more fre-

FIGURE 1

The average length of office visits at each level of involvement by community physicians and exemplars.



*As measured by the Levels of Physician Involvement model.

quently and showed higher levels of family involvement than the community physicians ($\chi^2(2) = 23.03$, $P < .01$). Family context was discussed by exemplars in 55 (64%) of their interviews, usually at Levels 2B and 3B. In contrast, the community physicians focused on the individual patient in the majority (57%) of their interviews. Discussion of family context, if any, by the community providers was usually at Level 1B (such as family history of an illness). A comparison of physician and patient gender showed no significant differences.

The patient's reason for visiting the physician was associated with the level of physician involvement. Reasons for visit were categorized as acute (eg, sore throat, ear infection, N = 153), preventive (eg, physical examination, well-child, N = 95), chronic (eg, hypertension, diabetes, N = 42), and psychosocial (eg, depression, stress, N = 10). Average LPI ratings across the four categories were 1.6, 1.9, 2.1, and 2.6, respectively ($\chi^2(6)=24.54$, $P <.01$). Exemplary physicians showed a higher average LPI rating in each category.

The average patient satisfaction rating was 4.63 on a scale where 1 = poor and 5 = excellent. For both groups combined, satisfaction ratings for the overall visit for Levels 1 to 5 were 4.64, 4.71, 4.78, 4.75, and 5.0, respectively. The average patient satisfaction ratings were similar for the community physicians (4.63) and the exemplars (4.64) ($\chi^2(2) = .248$, $P = .885$).

Finally, the level of physician involvement was not associated with the physicians' familiarity with their patients. Interviews coded as Level 1, 2, or 3 (98% of the interviews) were equally likely to occur with patients the physician rated anywhere along a 1 ("unfamiliar") to 5 ("very familiar") continuum ($\chi^2(8) = 4.45$, $P = .81$).

DISCUSSION

These results provide the strongest evidence to date that physicians with special training in medical interviewing interact with their patients in distinctive ways. In contrast to their community colleagues, exemplars were more likely to solicit the patient's beliefs and perspectives, to address psychosocial concerns more frequently and in more depth, and to discuss the patient's family context more often. By addressing the patient's perspective (Level 2), patient affect (Level 3), and family context (Levels 1B to 4B), the exemplars more consistently applied a biopsychosocial approach in their patient care, whereas the community physicians were more narrowly focused on biomedical problems.

Whether the exemplar's level of involvement was appropriate to the health needs of each patient is beyond the scope of this study. However, given well-established evidence that psychosocial issues play an important role in health,[13] the greater depth and breadth of the exemplars' interviews suggests they are more likely to establish a collaborative relationship with patients and to identify and address psychosocial factors that relate to a patient's health.

Despite the greater depth of medical interviewing, however, exemplars' office visits were no longer than those of community physicians. It appears that exemplars may develop skills to deepen an interview efficiently, making better use of the same amount of time. A more complete understanding of the methods used by exemplars to enter into and conclude discussions at higher levels of involvement is needed.

Existence of an established physician-patient relationship was not a prerequisite for exchanging information collaboratively (Level 2) or for addressing a patient's emotional responses (Level 3). Not surprisingly, greater depth of physician involvement (Levels 4 and 5) occurred only when the patient and physician had a previously established relationship. The trust established through continuity is likely the foundation that enables exemplars to address psychosocial issues that may affect a patient's health status.

The uniformly high patient satisfaction ratings suggest that higher levels of involvement are not necessary for patients to be content with the office visit. This finding may simply indicate that higher levels of involvement are not necessary in every visit. Either consciously or unconsciously, patients and providers may find a level of involvement that is comfortable to both of them. Satisfaction may also be affected by additional uncontrolled factors, such as waiting time, friendliness of the office staff, and nonverbal communication of the provider. Further interpretation of these results is made difficult by a ceiling effect, in which most ratings were clustered around the upper end of the scale. More meaningful information may be obtained by in-depth exit interviews to determine whether patient satisfaction is increased when the level of physician involvement matches the expectations of the patient. In addition, studies of how the level of involvement might relate to patients' satisfaction with the overall clinical relationship are needed.

The patient's presenting problem was associated with the subsequent level of involvement shown by the physician. As expected, acute medical problems were associated with primarily biomedical discussions (Level 1) and psychosocial problems were associated with discussions at Levels 2 and 3. Exemplars showed higher average LPI ratings than community physicians during acute medical visits (average LPI rating of 2.0 vs 1.5, respectively), indicating the examplars' ability to collaborate with patients when addressing typical medical problems.

In previous studies, the highest level of involvement exhibited by resident family physicians was 72%, 25%, 2%, and 2%, at Levels 1, 2, 3, and 4, respectively,[10] and the distribution across Levels 1 to 3 of interviews conducted by family physicians on university faculty was 41%, 36%, and 23%.[11] A comparison with the levels exhibited by physician samples in our study (Table 3) shows that Level 1 was the predominant mode for resident, faculty,

and community physicians and Level 3 was the mode for the exemplars.

In contrast to previous studies of exemplary physicians, the use of a comparison group and a standardized assessment procedure strengthened the reliability of our results. However, three methodological limitations to this study warrant comment. A possible selection bias of physicians and patients limits the generalizability of the results. Most community physicians were white men, seeing patients in a semirural, middle-class, fee-for-service setting. The lack of diversity limits confidence in generalizing findings to other physician and patient groups. Physicians who agreed to participate may have differed from nonvolunteering physicians, possibly biasing the results. Second, the data collection and coding methodology present some limitations. Patients and providers could have modified their normal interview behavior because of the audiotaping procedure. Also, nonverbal communication cannot be coded from typewritten transcripts. Finally, the design does not allow evaluation of the appropriateness of the levels of physician involvement regarding their relation to patient outcome or the reasoning used by providers for the level of involvement. For example, the study design prevents understanding whether the infrequency of Level 4 interventions is due to physician skill deficit, lack of time, lack of clinical need from patients, or lack of incentive.

CONCLUSIONS

The findings from our study expand the limits of our knowledge regarding the practice patterns of exemplars. The exemplars exhibited greater involvement with patients and more family-oriented care than their community cohorts. Whether these behaviors make a difference in the health and well-being of their patients and families cannot be answered by our findings. Suggestions for further research include longitudinal designs which follow patients over time to assess effects of higher physician involvement and conducting in-depth interviews with patients, families, and physicians regarding satisfaction with the level of physician involvement.

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