Relationships between physician practice style, patient satisfaction, and attributes of primary care

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KEY POINTS FOR CLINICIANS

- Different physician-patient interaction styles are actively used in community practice.
- A person-focused style is being used by almost half of the physicians observed, and this style is associated with greater patient-reported quality of primary care and greater patient satisfaction.
- This study provides further evidence to support the widespread implementation of this approach to the physician-patient interaction.

■ OBJECTIVE Style of physician-patient interaction has been shown to have an impact on patient outcomes. Although many different interaction styles have been proposed, few have been empirically tested. This study was conducted to empirically derive physician interaction styles and to explore the association of style with patient reports of specific attributes of primary care, satisfaction with care received, and duration of the visit.

■ STUDY DESIGN A cross-sectional observational study.

■ POPULATION We observed 2881 patients visiting 138 family physicians for outpatient care in 84 community family practice offices in northeast Ohio.

■ OUTCOMES MEASURED Components of Primary Care Instrument (CPCI), patient satisfaction, and duration of the visit.

■ RESULTS A cluster analysis of variables derived from qualitative field notes identified 4 physician interaction styles: person focused, biopsychosocial, biomedical, and high physician control. Physicians with the person-focused style rated highest on 4 of 5 measures of the quality of the physician-patient relationship and patient satisfaction. In contrast, physicians with the high-control style were lowest or next to lowest on the outcomes. Physicians with a person-focused style granted the longest vis-its, while high-control physicians held the shortest visits—a difference of 2 minutes per visit on average. The associations were not explained away by patient and physician age and gender.

■ CONCLUSIONS In community-based practices, we found that the person-focused interaction style appears to be the most congruent with patient reported quality of primary care. Further investigation is needed to identify ways to support and encourage person-focused approaches and the time needed to provide such care.

■ KEY WORDS Physician-patient relations; family practice; patient-centered care. (*J Fam Pract 2002; 51:835–840*)

The way in which physicians and patients interact is important because of demonstrated effects on patient satisfaction,[1-3] patient understanding and adherence to directions,[3] litigation for malpractice,[4] and health status.[2,5] Physician-patient interaction style is particularly important in primary care,[6-8] where patients are seen over time for diverse and often undifferentiated problems.

Over the past half century, changing medical technology, law, education, ethics, and research have influenced the current shape of physician-patient interactions.[9] In 1956, the traditional model of Activity-Passivity (physician does something to the patient) was challenged with the revolutionary concept of active patient participation.[10] The models of Guidance and Cooperation (physician tells patient what to do, patient cooperates) and Mutual Participation (physician enables patient to help

TABLE 1

Physician style variables

Physician orientation:

Problem focused—physician focuses on the patient's presenting complaint

Patient-focused—physician is open to a broader health care agenda with the patient and explores other possible issues

Scope of clinical information:

Biomedical—talk focuses on the biological information, diagnoses and treatments

Biopsychosocial—explores both the biological and social and psychological issues

Affective connection with patients:

Physician personable and friendly, connects with person on a personal level

Physician not personable and friendly, maintains professional distance

Openness to patient agenda:

Physician open to patient's agenda

Physician sets and maintains the agenda

Sharing of control in interaction:

Physician shares control of the interaction

Physician controls the interaction

Negotiation of options with patient:

Physician negotiates options with patients

Physician does not negotiate options with patients

him/herself, patient is a partner) were proposed[10] and are reflected in modern theoretically-based interaction models. Numerous models have been proposed as variants of the Guidance/Cooperation model (eg, paternalistic model,[11] priestly model,[12] contractual model[13]) and the Mutual Participation model (eg, ethnographic model,[14] consumerist model,[11,15] family systems model[16]). Few of these models, though, have been empirically evaluated. The best-developed and most-studied mutual participation model is the patient-centered method.[5,17–20]

When data have been collected using quantitative or qualitative approaches, significant strides have been made in understanding physician-patient interaction[3, 21–23] and the effect of such interactions on patient outcomes,[5,24,25] primarily patient satisfaction.[1,26–29] However, many studies have been limited by their focus on a narrow aspect of physician-patient communication, studying a small number of physicians or patients, and using medical students, residents, and hospital faculty as study subjects.

The purpose of this study was not to develop a new model of physician-patient interaction. Rather, variables characterizing physician style grounded by the direct observation of thousands of encounters for 138 community practicing family physicians were used to empirically cluster physicians into groups

that represent distinct interaction styles. Because interaction style may be manifested in all phases of a patient encounter, we used as a guiding framework the 3 primary functions of an interview:[30,31] *gathering information, enhancing a healing relationship, and making and implementing decisions.* The importance of each of these functions varies depending on the nature of the encounter, but our overall approach provides a practical way of conceptualizing physician-patient interaction style. The association of the empirically derived and theoretically-based physician styles are tested with 3 outcomes: 1) patient report of delivery of attributes of primary care measured using the Components of Primary Care Instrument (CPCI), 2) patient satisfaction with the visit, and 3) the duration of the visit.

METHODS

This study was part of the larger Direct Observation of Primary Care (DOPC) study, a cross sectional observational study that examined the content of 4454 outpatient visits to family physicians in northeast Ohio. Details of the methods of the DOPC study have been described extensively elsewhere.[32,34] Briefly, 4 teams of 2 research nurses directly observed consecutive patient visits to 138 participating physicians in 84 practices between October 1994 and August 1995. The research nurses collected data on the content and context of consecutive office visits using the following methods: direct observation of the patient visit, patient exit questionnaire, medical record review, and collection of ethnographic field notes.[33,34]

Measures

Patients' perception of the delivery 5 attributes of primary care was measured by the Components of Primary Care Instrument (CPCI). *Interpersonal communication* was an evaluation of the ease of exchange of information between patient and physician. The *physician's accumulated knowledge about the patient* refers to the physician's understanding of the patient's medical history, health care needs, and values. *Coordination of care* refers to the information received from referrals to specialists and previous health care visits, and its incorporation into the current and future care of the patient. *Preference to see usual physician* refers to the degree to which patients believed and valued that they could go to their regular physician for almost all problems. Scale scores demonstrate good internal consistency reliability (Cronbach's alpha: .68–.79).[35] *Continuity of care* is measured by the Usual Provider Continuity index (UPC), which is the proportion of visits to the patient's regular doctor in the past year out of the total number of physician visits in the past year.

Patient satisfaction was measured using the 4 physician-specific items from the MOS 9 Item Visit Rating Form[36] (Cronbach's alpha = .89).[33] Also included on the patient survey was a single item assessing the degree to which patients' expectations with the visit were met. *Duration of the visit* was the total face-to-face time the physician spent with the patient and was measured by direct observation.

Each physician's interaction style was determined through a 2-step process. In the first step, ethnographic field notes were used to gather information that helps define core features of physician style. The field notes from 4 days of observation of 138 family physicians in 84 practices were transcribed and imported into FolioVIEWS37 for data management and coding. Analysis was conducted with an immersion-crystallization approach[38] involving repetitive reading and summarization of the text data. Case summaries were constructed from a sample of practices selected to maximize variation among practice characteristics such as size, physician sex, and practice location. The case summaries were independently reviewed, and important features were identified. These features were cross-checked against the original data. This process, and the resulting 30 features, are described in detail elsewhere.[32]

Six of the features that emerged from the qualitative analyses pertain to physician style and are listed in Table 1. Each of the 3 primary interview functions[30] is represented by at least 1 feature, ensuring good coverage of the core aspects of the interaction. *Gathering information* is shaped by physician orientation and the clinical information allowed or elicited in the visits. *Enhancing healing relationships* is realized in part through affective connection with patients. The final function, *making and implementing decisions*, is influenced by the level of control or shared power with patients, the physician's openness to patients' agendas, and the physician's willingness to negotiate options with patients.

The second step involved a cluster analysis of the 6 variables. First a hierarchical approach was used to estimate the number of clusters. Then a non-hierarchical clustering approach was used to determine physician classification among the clusters and the features that distinguish the clusters.[39] Analysis of variance was used to confirm that variables included in the cluster analysis significantly differed between at least 2 of the identified clusters, and thus were

TABLE 2

Physician and patient characteristics associated with interaction style

Characteristic	Total	Biopsychosocial	Biomedical	Person focused	High physician control	P
Physician						
Number	138	22	28	68	20	
Age (mean years)	43	45	43	42	46	.06
Female	26%	9%	21%	38%	10%	< .01
Residency trained	90%	86%	86%	94%	85%	.44
Patient						
Number	2881	504	578	1258	541	
Age (mean years)	42	44	41	42	43	.11
Female	62%	57%	61%	65%	58%	< .01

contributing to defining interaction style.

Analyses

The association of physician and patient characteristics with interaction style was assessed by chi square for categorical variables and by analysis of variance for continuous variables. The association of physician style with each of the 5 attributes of primary care measured by the CPCI, the indicators of patient satisfaction, and duration of the visit were tested using multilevel modeling,[40] to account for the hierarchical nature of data (ie, patients nested within physicians).

RESULTS

Of the 4994 patients presenting for care by their family physicians, 4454 (89%) agreed to participate in the DOPC study. Physicians participating in the DOPC study were similar in age to national samples of family physicians, but over-represented female and residency-trained physicians.[34] Patient age, sex, and race were similar to the population of patients seeing family physicians and general practitioners nationally as reported in the National Ambulatory Medical Care Survey.[34] Patient questionnaires were returned by 3283 (74%) of the patients. Of those respondents, 2881 satisfactorily completed the CPCI, representing 88% of those returning a patient questionnaire and 65% of the total sample. The patients who completed the CPCI were more likely to be white, have private health care insurance, and be somewhat older than patients who did not complete the CPCI.[35]

The cluster analysis identified 4 distinct groups of physicians. Each of the 138 physicians was classified into 1 group. Each of the 6 variables in the analysis contributed to defining the 4 groups by significantly (*P* < .05) differentiating at least 2 of the groups. Based on the strength and direction of the variables defin-

TABLE 3

Association of physician style with attributes of primary care[1]

Attribute of primary care	Biopsychosocial	Biomedical	Person focused	High physician control	P
Communication	4.27	4.26	4.43	4.21	< .001
Accumulated knowledge	3.54	3.33	3.56	3.51	< .001
Coordination of care	3.85	3.78	3.99	3.74	< .001
Preference for regular doctor	4.46	4.45	4.46	4.39	ns
Usual provider continuity[2]	0.67	0.66	0.64	0.65	ns

[1]Each row represents a separate multilevel regression model wherein each attribute of primary care is the outcome variable and the number in each column is the group mean of that attribute, adjusted for patient and physician age and sex, as well as the effect of the patients being nested within physicians.

[2]Usual provide continuity = total number of visits to regular physician in past year, divided by the total number of physician visits in the past year.

ing the clusters, descriptive names were assigned to each of the 4 groups: person-focused, biopsychosocial, biomedical, and high physician control.

Forty-nine percent of physicians were classified as *person focused*. These physicians were more focused on the person than the disease, were perceived as personable and friendly, were open to the patient's agenda, and frequently negotiated options with the patient. Physicians classified as *biopsychosocial* (16%) were more focused on the patient's disease, but elicited psychosocial clinical information. Physicians classified as *biomedical* (20%) were also more focused on the patient's disease and were unlikely to elicit psychosocial information. These physicians also demonstrated a low level of friendliness and were unlikely to negotiate options with the patient. The *high physician control* group's major characteristics were domination of the encounter and disregard of the patient's agenda (14%).

Association of physician characteristics with the interaction styles is presented in Table 2. The percent of male and female physicians differed greatly among the 4 style groups. The proportion of female physicians in the person-focused group was almost 4 times that of the biopsychosocial group and the high physician control group (P < .01). Alternatively, the percent of male physicians was higher than expected in the biopsychosocial and high control groups and lower than expected in the person-focus group. Patient age was similar across the 4 style groups, but the percentage of female patients differed modestly. Based on these associations, physician and patient age and gender were included as covariates in the subsequent analyses.

As reported in Table 3, physician style is significantly associated with 3 of the 5 patient reports of the attributes of primary care. Physicians classified as having a person-focused approach have the highest mean score of communication; the other 3 styles score lower, with the high-physician-control style

scoring the lowest. Person-focused and biopsychosocial physicians scored highest on patient reports of accumulated knowledge; those in the biomedical group scored the lowest. Coordination of care was highest among the person-focused group and lowest among the high-control group. Across the different types of physician style, there was no difference in patient report of preference for his or her regular physician or the measure of continuity of care.

The associations of physician style with 2 indicators of patient satisfaction are displayed in Table 4. The highest group mean of patient satisfaction is for the person-focused style, and the lowest is for the high-physician-control group. The indicator of the degree to which patient expectations were met also follows this pattern. Also displayed in Table 4, the person-focused style demonstrated the longest average duration of visit, at 11.5 minutes; the high-physician-control group visits were the shortest in duration, at about 9.5 minutes.

DISCUSSION

These data indicate that a person-focused approach is actively used in community practice, and is the style most congruent with patient-reported quality of primary care and satisfaction with care. Our data, in concert with data reported by others,[5,24] indicate strong support for the feasibility and value of the person-focused model. We found that, of the 4 distinct interaction styles, physicians with the person-focused style scored highest across all measures of the attributes of primary care and on the indicators of patient satisfaction, with the exception of continuity of care. In contrast, physicians with the high-control style were generally lowest on the primary care and satisfaction indicators.

It is important to emphasize that, even though the vast majority of patients in this sample are likely to have self-selected their primary care physician, patient rating of some attributes of primary care differed across the 4 physician styles. Patients of physicians with different styles equally valued seeing their regular physician, as reported by the preference-for-their-regular-doctor score; they exhibited similar proportions of continuity visits in the past year; and their satisfaction scores were all generally high. Patients appear to want to see their regular physician, regard-

less of interaction approach, even though some approaches—particularly the high-physician-control style—were rated poorer for communication, coordination of care, and accumulated knowledge.

There may be several explanations as to why a particular physician style is associated with specific patient reports of communication, accumulated knowledge, and coordination of care. Openness to the patient's agenda and willingness to negotiate options—as was characteristic of the person-focused physicians—may facilitate good communication and convey an understanding of patient preferences and values regarding health. It is interesting to note that different groups scored lowest on some of the attributes of primary care. The high-physician-control group was the lowest on interpersonal communication and coordination of care. High-control physicians were more likely to dominate the agenda and the verbal exchanges. Patients may have felt they could not ask questions or that the physician did not listen to what they tried to say. The biomedical group of physicians were given the lowest scores by patients on accumulated knowledge, suggesting that patients thought these physicians were less likely to know their preferences and values regarding health care, know less about them as persons, and know less about their family and medical histories.

As others have proposed, we concur that interaction style is not a dichotomy or even a continuum of patient versus physician control, but is multidimensional, cutting across the main functions of the patient encounter (ie, information gathering, relationship building, and making and implementing decisions). These data provide some confirmation for the original scheme proposed by Szasz and Hollander,[10] with the Mutual Participation model most represented by the person-focused approach and the Activity-Passivity model most represented by the high-physician-control group. The biopsychosocial and biomedical approaches represent different versions of the Guidance and Cooperative model.

The 4 types of physician style empirically derived from our data are similar to communication pattern types found by Roter et al,[27] in a study with similar aims but different methods. Of the 5 types reported, narrowly biomedical and expanded biomedical accounted for 65% of visits, and biopsychosocial accounted for 20%. Psychosocial and consumerist (distinguished by a high degree of patient questions) accounted for only 8% each. It is interesting that in our data, we found the person-focused style was by far the most common approach (49%) among this group of family physicians. These differences in use of particular interaction styles may have several explanations. First, these data were collected more recently.[27] Thus our data may reflect trends in a movement away from a paternalistic style and toward an increased patient participatory style. Second, our sample consisted entirely of family physicians practicing in the community, where the model of person-focused care may have a longer history of support and endorsement or be of greater importance to community family physicians, whose emphasis is on a breadth of care based on patient needs.[6,7,18]

Physicians with a person-focused style granted the longest visits, while high-control-physicians granted the shortest—a difference of more than 2 minutes per visit on average. The associations were not explained away by accounting for patient or physician characteristics, suggesting that a person-focused style may require more time. However, others have found that physicians engaging in a patient participatory style had office visits that were of similar duration as found with other approaches,[23,27] although the average duration of visit for both of these studies were considerably longer than the office visits among our sample.

This study has several strengths. The use of community practicing physicians in real world conditions for whom visits were similar in content to the visits reported by NAMCS[34] adds to the generalizability of the findings. We have used an integration of qualitative and quantitative approaches to empirically derive categories of physician interaction style. Our data are based on nurse observation of an average of 32 encounters per physician and documented in rich and comprehensive qualitative fieldnotes. And finally, by using multilevel modeling, we have reported an honest estimate of the association of physician style and patient report of primary care by appropriately modeling the nested data structure.

The findings must be interpreted in light of poten-

tial study limitations. First, the patients who did not complete the patient questionnaire are somewhat different demographically than those patients who did complete it. However, non-completion of the questionnaire was not associated with physician style; therefore, it is unlikely that the associations would change, had these individuals been included. Second, because the study was cross-sectional we cannot control for patient self-selection of physicians. Nonetheless, since patients dissatisfied with the quality of care are likely to seek another physician, we would expect patient self-selection of physicians to bias the study toward the null, thus making our results even more remarkable.

These findings, in combination with the literature on the person-focused,[24] patient-centered[5,17,19,20,41] and relationship-centered approaches,[42] provide strong evidence to support the widespread implementation of this physician-patient interaction approach. Further investigation in community practice may lead to identification of ways to support and encourage person-focused care and the time needed to provide such care.

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