The Patient-Physician Relationship and Medical Utilization

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This study was made possible by a grant from the Ohio Academy of Family Physicians Foundation, Columbus, Ohio.

The authors report no additional financial or other relationships relevant to the subject of this article.

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Objective: The goal of this study was to (1) explore the relationship between medical utilization and characteristics of the patient-physician relationship and (2) evaluate the relationship between physician perception of patient difficulty, chronic medical problems, and patient somatizing tendencies.

Method: Patients in an academic family practice center were asked to complete a demographic data sheet, the PRIME-MD Patient Questionnaire, and the Barrett-Lennard Relationship Inventory regarding their relationship with their physicians. Their physicians completed the Difficult Doctor-Patient Relationship Questionnaire. Patient charts were examined for number of office visits and phone calls in the previous year, as well as number of chronic problems and medications. The study was conducted from September 2000 to November 2001.

Results: Forms were completed by 165 patients and 20 physicians. Forty-three patients who were approached refused to participate. Patient ratings on the Barrett-Lennard Relationship Inventory were not related to utilization measures. Physician ratings of difficulty were significantly related to phone calls and visits ($p < .05$), as well as PRIME-MD Patient Questionnaire somatization tendencies ($p < .05$) but not to number of chronic problems. Patient and physician ratings were not significantly correlated. Gender ($p < .001$), marital status ($p < .04$), education ($p < .03$), and employment status ($p < .002$) were all related to utilization measures.

Conclusion: Medical utilization was associated with somatizing tendencies of patients and the physicians' perception of patient difficulty. Physicians rated patients as difficult if they tended to somatize but not if they had a number of chronic problems.

(Prim Care Companion J Clin Psychiatry 2007;9:266–270)

For Commentary, see page 263.

A cornerstone of good medical care is the relationship between the patient and his or her physician.[1] However, there are patient-physician dyads in which the relationship is problematic and a source of frustration for both the patient and physician.[2] Frequently, expectations held by both the physician and the patient affect reactions to and satisfaction with the encounter.[3]

Difficulties in the relationship between patient and physician have been reported to affect various aspects of medical care. Van Dulmen and Bensing[4] suggest that the stress from a difficult encounter can negatively affect the patient's health (and possibly also the physician's). With better communication and understanding, especially regarding the patient's feelings and symptoms, physicians can provide more effective and efficient medical care.

Most efforts to understand difficult medical relationships have focused on the patient,[5] even blaming the patient for being hateful or difficult.[6] These conceptualizations have not only been one-sided and biased, but also less likely to be productive because of their limited scope.[6] Besides considering how the physician perceives the patient, it is important to assess how the patient perceives the physician.

It has been suggested that physician difficulty with a patient can occur for at least 2 reasons[7]: (1) The patient may have medical problems that are unusual or challenging for the physician to diagnose and/or treat. (2) Even more demanding are patients perceived as difficult because of vague, changing symptom complaints that do not match known syndromes and may, in fact, be indications of a somatization disorder.[8] It has been pointed out that while emotionally based somatic symptoms are common in primary care, there is confusion and incon-

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sistency in diagnosis.[9,10] Steinmetz and Tabenkin[7] maintain that multiple nonspecific complaints, rather than difficult medical problems, will lead a physician to perceive a patient as difficult. Hahn[11] reported that perception of difficulty by the physician was not related to number of physical problems. In a survey of practicing physicians, Reid et al.[12] found that 90% of their sample felt that patients with medically unexplained symptoms were difficult to manage.

Although some suggestions have been offered regarding the impact of the patient-physician relationship on medical utilization, data have been limited. Similarly, additional data would be helpful regarding patients perceived as difficult by their physicians and whether this perception is more closely associated with chronic medical problems or somatizing tendencies.

A goal of the current study, then, was to explore the impact of the relationship between patient and physician on medical utilization. It was hypothesized that a perception by either the physician or patient of difficulty in the relationship would be associated with increased medical utilization. It was also expected that physicians would perceive patients with somatization tendencies as more difficult than patients with many medical problems.

METHOD

Subjects

Patients in an academic family practice center were asked to complete the PRIME-MD Patient Questionnaire (PRIME-MD),[13] the Barrett-Lennard Relationship Inventory[14] pertaining to their recent office visit, and a page of demographic information. Before each business day, a research assistant and the nurses responsible for scheduling patients identified potential study participants by using the billing database: patients 18 years and older who could read English, provide consent, and had been patients in the practice for at least 1 year were considered eligible. The research assistant contacted eligible patients individually in the examination room prior to their interaction with the physician to ascertain interest in study participation and to obtain consent. Eligible patients were contacted in a way that did not interrupt the normal flow of patients in the office. Patients completed the questionnaires after seeing their physician. The instruments required approximately 10 minutes total to complete.

The physician seeing the patient completed the Difficult Doctor-Patient Relationship Questionnaire[11] to describe his or her reactions following the encounter with the patient. The policy of the center was for the continuity physician to see his or her patient for all visits; however, if the continuity physician was not seeing patients that day, another physician would see the patient for the acute problem. Most of the subjects were seeing their own physicians, although we did not gather data on the specific number. Since patients had to be in the practice for at least a year to be considered for the study, it is likely that the specific patient-physician relationship had existed for at least that long.

The number of office visits and phone calls to the office during the previous year, chronic problems (e.g., hypertension, diabetes), and medications were assessed later by reviewing the patient's chart or billing database. Chart reviews were done by a research assistant, who was trained and supervised by the physician-author (E.F.W.) of the research team. The research assistant was trained using a standardized data recording form. Patients were provided a $20 gift certificate for their participation in the study.

Informed Consent

The procedures followed were in accord with appropriate ethical principles and were approved by the Institutional Review Board of the Medical College of Ohio (now the University of Toledo). After a complete description of the study was given to subjects, written informed consent was obtained. The study was conducted from September 2000 to November 2001.

Instruments

The PRIME-MD Patient Questionnaire[13] is a screening instrument for primary care settings through which patients report symptoms of mood disturbance, anxiety, eating disorder, somatization disorder, and alcohol use. Validation was demonstrated by the agreement between questionnaire responses and assessments done by mental health professionals. Of particular interest in this study were the 15 physical symptoms suggestive of a somatization disorder.[15]

The Barrett-Lennard Relationship Inventory was initially developed to assess qualities of the therapist-patient relationship[14] and has been adapted for use in medical situations to assess the patient-physician relationship.[16] Besides yielding a global measure of the relationship, it assesses the warmth, honesty, and understanding experienced in the relationship by the patient. The subscale scores can range from 8 to 48. The Difficult Doctor-Patient Relationship Questionnaire[11] was developed as a "valid and efficient method for identifying patients that physicians experience as difficult."[11(p1)] The revised 10-item form, which can yield scores that range from 10 to 60, was used in this study.[11] Higher scores indicate greater difficulty of the encounter as perceived by the physician.

Analysis

Descriptive statistics were calculated from patients completing the inventories. Independent t tests were used

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Table 1. Demographic Information for Patient Subjects in the Study of Patient-Physician Relationship and Medical Utilization (N = 165)

Characteristic	Value
Age, mean (SD), y	52.9 (16.0)
Women, %	67
Race, %	
African American	26
European American	68
Hispanic American	2
Other	4
Marital status, %	
Single	25
Married	46
Separated	1
Divorced	15
Widowed	13
Education, %	
Less than high school graduate	15
High school graduate	27
Some college	26
College graduate	19
Graduate/professional school graduate	13
Employment, %	
Full time	42
Part time	13
Never worked	3
Physically unable	14
Looking for work	3
Unknown	25

Table 2. Means and Standard Deviations for Study Variables in the Study of Patient-Physician Relationship and Medical Utilization

Variable	Mean	SD
PRIME-MD Patient Questionnaire, somatization symptoms	4.0	3.4
Barrett-Lennard Relationship Inventory		
Warmth	41.8	5.1
Understanding	39.6	5.7
Honesty	41.4	5.0
Total	122.7	14.1
Difficult Doctor-Patient Relationship Questionnaire	22.7	9.5
No. of chronic problems	10.6	8.6
No. of office visits	5.6	3.7
No. of telephone calls	4.9	5.2
No. of prescribed medications	4.2	3.5

to determine the effects of demographic variables on outcome measures. Pearson product moment correlation coefficients were calculated to examine the relationship between the continuous variables. The Bonferroni correction was used to adjust for the number of correlations calculated so that the study-wise $\alpha = .05$. A multiple regression analysis was performed using the Statistical Package for the Social Sciences (SPSS) software, version 13 (SPSS, Inc., Chicago, Ill.), to assess the relative contributions of somatization, phone calls, and office visits to the physician's perception of the relationship.

RESULTS

PRIME-MD and Barrett-Lennard forms were completed by 165 patient subjects. The mean age was 52.9 years, and 67% were women. Forty-three patients refused to participate, largely due to time constraints. Since they did not become subjects, we were not able to collect demographic information on them to determine how they might be different from study subjects.

Gender, marital status, education, and employment status were related to other study measures. Women made more office visits (mean = 6.2 vs. 4.4, p = .0001) and had higher PRIME-MD somatization scores (mean = 5.0 vs. 2.9, p = .0001) (even after adjusting for items dealing with gynecological symptoms) than men. Subjects who were not married had higher PRIME-MD somatization scores (mean = 4.7 vs. 3.8, p = .04), had more chronic problems listed in their charts (mean = 12.0 vs. 9.0, p = .02), and made more telephone calls to the office (mean = 5.7 vs. 3.9, p = .03) than subjects who were married. Subjects with less formal education had more chronic problems listed in their charts (mean = 13.5 vs. 10.3, p = .015), made more visits to the office (mean = 7.4 vs. 5.3, p = .028), and were seen as more difficult by their physicians (mean = 47.4 vs. 41.5, p = .004) than subjects with more formal education. Subjects working full time had fewer chronic problems (mean = 6.1 vs. 9.6, p = .0001), made fewer visits (mean = 4.6 vs. 6.3, p < .002), and made fewer telephone calls to the office (mean = 3.8 vs. 5.7, p = .024) when compared to subjects not working full time. Additional demographic information for patient subjects can be found in Table 1.

Thirteen resident (7 women, 6 men) and 7 faculty (1 woman, 6 men) physicians completed the Difficult Doctor-Patient Relationship Questionnaire on these patients following the encounter.

The mean (SD) number of visits to the center by patient subjects for the year prior to the study was 5.6 (3.7). The mean (SD) number of telephone calls for the same time period was 4.9 (5.2). Patients had a mean (SD) of 10.6 (8.6) chronic problems listed in their chart and were taking a mean (SD) of 4.2 (3.5) prescribed medications. Means and standard deviations for these and all study variables can be found in Table 2.

Physician ratings of difficulty were significantly related to number of phone calls (r = 0.32) and office visits (r = 0.29). PRIME-MD somatization scores were also positively correlated with number of office visits (r = 0.34). Physician ratings of patient difficulty were correlated significantly with PRIME-MD somatization scores (r = 0.38) but not with number of chronic problems (r = 0.14). There was a significant positive correlation between number of medications taken and chronic problems (r = 0.55) but not between medications and PRIME-MD somatization scores (r = 0.22).

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Table 3. Correlation Matrix for Study Variables in the Study of Patient-Physician Relationship and Medical Utilization

Variable	Chronic Problems	Visits	Phone Calls	Medications	PRIME-MD Patient Questionnaire[a]	Barrett-Lennard Relationship Inventory	Difficult Doctor-Patient Relationship Questionnaire
Chronic problems		0.39*	0.34*	0.55*	0.24	0.22	0.14
Visits			0.49*	0.36*	0.34*	–0.02	0.29*
Phone calls				0.40*	0.18	0.12	0.32*
Medications					0.22	0.16	0.05
PRIME-MD Patient Questionnaire						0.00	0.38*
Barrett-Lennard Relationship Inventory							–0.16
Difficult Doctor-Patient Relationship Questionnaire							

[a]Somatization scores only.
*$p < .05$ using Bonferroni correction.

Table 4. Regression Analysis Predicting Physician Perception of Patient Difficulty From Somatization, Office Visits, and Phone Calls

Model	Sum of Squares	df	Mean Square	F	p Value
Regression	2,588.1	3	862.7	9.72	.001
Residual	13,846.9	156	88.8	…	…
Total	16,435.0	159	…	…	…

Symbol: … = not applicable.

None of the patient rating scores on the Barrett-Lennard Relationship Inventory correlated significantly with other study variables, although they did correlate significantly with one another (range, 0.63 to 0.74; $p < .001$). The correlation between physician ratings of patient difficulty and patient Barrett-Lennard ratings of the relationship with the physician ($r = –0.16$) was in a negative direction but was not significant. A complete listing of correlations among study variables can be found in Table 3.

A linear multiple regression analysis was performed including 3 variables (number of office visits, number of phone calls, and PRIME-MD somatization scores) that were significantly correlated with the physician's perception of the relationship. The goal was to ascertain whether each of these variables would independently predict the physician's perception of the relationship. R^2 for the multiple linear regression analysis was 0.16 ($p < .001$) with somatization ($\beta = .967$, $t = 3.64$, $p = .001$, 95% CI = 0.446 to –1.488) and number of phone calls ($\beta = –.409$, $t = 2.48$, $p = .02$, 95% CI = –0.079 to –0.739) both being independent predictors, while number of office visits was not ($\beta = –.052$, $t = 0.21$, $p = .834$, 95% CI = –0.536 to 0.432). Results of the analysis of variance can be found in Table 4.

DISCUSSION

An important finding that we had not predicted was the relative importance of factors that influence the physician's perception of patient difficulty. From the multiple regression analysis, we found that a somatizing personality condition influenced the rating of patient difficulty more than either the number of visits the patient scheduled or the number of times the patient called the office. Telephone calls were independently predictive of perceived patient difficulty but not to the same degree as somatization. Our findings also suggest that some demographic variables may be associated with utilization and physician perception of difficulty. As a group, unmarried women with less formal education are highest in medical utilization and perceived degree of difficulty by their physicians.

The first hypothesis was partially supported by the results of this study. Patients rated as more difficult by their physicians did make significantly more frequent visits and phone calls to the office. However, patient ratings of the physician's warmth, understanding, or honesty were not associated with medical utilization. Results of the study supported the second hypothesis. Physicians considered patients who scored higher on the somatization scale as more difficult, but not those patients with a greater number of chronic problems listed in their charts. This would support the assertions[7] that somatization tendencies and multiple nonspecific complaints (compared to actual chronic physical problems) lead to greater difficulty in the relationship, at least from the physician's perspective.

It appears from our results that somatization influences the physician's perception of the relationship more than phone calls or office visits (which was not an independent predictor of the relationship). The patient who somatizes presents a special mental health challenge to the primary care physician, but the psychiatric diagnostic system has not been particularly helpful.[9] Having a number of chronic problems listed in the chart was associated with higher number of medications prescribed; however, reporting a higher number of physical symptoms was not. This would suggest that physicians are not unduly influenced by patient somatizing tendencies in their prescribing practices.

Another intriguing finding was that number of chronic problems was positively associated with telephone calls

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to the practice, but somatizing tendencies were not. Both number of chronic problems and somatizing tendencies were positively associated with office visits. It may be that personal contact is relatively more important to the somatizing patient, and that the telephone call would not be as satisfying. Further research in this area would be helpful.

The association found between demographic variables and other study variables deserves additional comment. The relationship between gender and reports of physical symptoms has been previously reported,[17] with women more likely to admit medical problems and to seek help for them. Marital status, especially for men, has also been associated with better health status,[18] and the social support possible through marriage may be the mechanism. More educated patients had fewer medical problems and made fewer visits. The influence of education on health status has been reported previously.[19,20] It could be hypothesized that physicians in this study rated more educated patients as less difficult since perceived similarity to these patients facilitated the relationship. Since work status is significantly influenced by health status, it was not surprising to find that patients working full time had fewer medical problems and utilized fewer medical services.

A strength of our study was the fact that both patient and physician perspectives were used in assessing the relationship. In previous studies,[5,6] there was a bias in which patient responsibility for the relationship was assumed. We were able to minimize this tendency by assessing both sides of the relationship. Access to the patient charts allowed us to look at a number of measures of utilization, and this resulted in an additional strength of our study.

A number of weaknesses in our study should be acknowledged. Patients seemed to be generally favorable in evaluating their physicians. Although the $20 gift certificate they received for participation may have influenced their ratings, Jackson et al.[21] report that patient satisfaction in primary care settings is generally high and increases with the length of the relationship. While it is heartening to discover this positive situation, the skewing of scores does represent an analysis challenge and a possible limitation of the study.

The fact that most of the patients were women and most of the physicians were men should also be noted. Although Hahn[11] has reported that perception of patient difficulty is not affected by patient or physician gender, Roter and Hall[22] maintain that physician gender in particular does matter in the patient-physician relationship. In addition, since our data were collected in an academic family practice setting, caution should be used in generalizing to other types of practices.

Subjects in this study were found to have a particularly high number of chronic problems listed in their charts. Because patients coming to see their physicians (as opposed to being recruited from patient rolls) were subjects in this study, patients with more problems had a higher likelihood of being included as subjects. Generalization of the findings should recognize this limitation.

The relationship between patient and physician is multidimensional in nature. For this reason, further research in this area should explore additional variables beyond the scope of this study, such as gender pairings, length of association, and community practice sites.

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