Patient Satisfaction And Selected Physician Behaviors: Does The Type Of Practice Make A Difference?

Richard L. Holloway, Ph.D., Christine C. Matson, M.D., and Daniel K. Zismer, Ph.D.

Abstract: This study was designed to show what specific physician characteristics lead to patient satisfaction and to compare satisfaction of patients using either prepaid or fee-for-service modes of payment within the same settings. We surveyed 1142 patients in five family practice clinics in rural and suburban areas of the North Central United States. Regression analysis of a seven-item satisfaction scale showed four significant factors that accounted for variance: ***sensitivity, is on time for appointments, follows up promptly,*** and ***provides personalized medical care.*** No meaningful differences were found between health-maintenance-organization and fee-for-service patients on these satisfactions. This study expands findings from previous research and raises more questions about reliable rating scales for complex physician/patient relations. Our methods can be used to investigate the effects of newer types of prepaid plans (including individual practice associations and preferred provider organizations) on patient satisfaction. The challenge for future investigations is to test and build reliable predictive models showing how physician characteristics, patient satisfaction, and quality of medical care affect each other in these more complex models of practice and reimbursement. (J Am Bd Fam Pract 1989; 2:87-92.)

Almost all physicians and other health care providers are interested in patient satisfaction. At the very least, it may enhance the likelihood of continual relations with the health care provider and could affect the healing process, clinical outcome, and patients' perceptions of quality of care. The effects, however, have yet to be fully explored. Future studies undoubtedly will have meaning for today's competitive health care environment, which offers increasing diversity of payment options. The goal of this study was twofold: to clarify the relations between physician behaviors and patient satisfaction and to compare satisfaction levels between prepaid and fee-for-service patients within the same clinics.

From literature about patient satisfaction, we identified four major topics: characteristics of the physician, characteristics of the patient, patient/physician relations, and the health care setting (Table 1). An extensive review by Lochman[1] identified eight major and five lesser factors associated with patient satisfaction. Accessibility, organizational characteristics, treatment length, perceived physician competence, clarity of physician communication, patient expectations, physician affiliative behaviors, and physician control appear to be the eight most effective predictors of patient satisfaction.[2-8] Other variables such as payment mode, clarity of patient communication, physician personality, patient sociodemographic characteristics, and health status appear to have significant but lesser roles in satisfaction. For this study, we chose to focus on the following specific physician behaviors: communications skills, attitude (affect, affiliative behaviors), delivery of personal care, accessibility, and promptness. (For the purposes of Table 1, accessibility was classified as characteristic of the physician/patient relationship, and promptness was considered part of the organizational arrangement.) Physician competence, while a major predictor of patient satisfaction, was not studied because of the difficulty in showing objective versus perceived competence and the interaction of physicians' affect with patients' perceptions of quality of care.[9-20]

Our study was prompted by the observation that most of the literature on patient satisfaction was generated before the rapid growth of prepaid health plans, which have different organizational characteristics than traditional fee-for-service (FFS). Moreover, those studies,[16,18] comparing

From the Department of Family Medicine, Baylor College of Medicine, Houston, and the Genesis Group, Inc., Minneapolis. Address reprint requests to Richard L. Holloway, Ph.D., Department of Family Medicine, Baylor College of Medicine, 5510 Greenbriar, Houston, TX 77005.

Table 1. *Determinants of Patient Satisfaction.*

Physician Factors	Patient Factors	Physician/Patient Factors	Setting
Competence*	Expectations/experience*	Control in relations*	Organizational Characteristics*
Technical‡	Health status†	Accessibility*	Accessibility*
Cognitive‡	Communication skills†	Treatment length*	Promptness†
Communication skills*	Sociodemographic status‡	Personalized care‡	Location‡
Attitude*	Personality‡		Office hours‡
Affect/caring‡	Health locus of control‡		Economics‡
Affiliative behavior‡	Role in family‡		Methods of payment†
Sensitivity‡			Total cost‡
Personal care‡			Facilities
Personality†			Waiting room‡
Respect‡			Waiting time‡
			Allied health personnel‡
			Family care‡
			Freedom of choice in plan‡

*Major factor named in most studies (from Lochman, et al. and others).

†Lesser factor named frequently.

‡Named occasionally.

FFS versus prepaid settings, involved large health-maintenance-organization clinics, which differ substantially from the FFS settings in organizational characteristics, patient selection, and, possibly, types of physicians. We sought to answer two questions:

1. Can we confirm the importance of specific physician characteristics (excluding physician competence) in predicting patient satisfaction?
2. Does the payment mode affect patient satisfaction?

Five family practice clinics in rural and suburban areas of the North Central United States served as the basis for the study, and all five practices had a blend of prepaid and fee-for-service patients. Patients were asked questions about their physicians' behaviors and quality of and satisfaction with care received. We used a multivariate approach to analyze the relations between and among these variables, examining especially the responses of patients using each type of payment to see whether the relations were affected by method of provider reimbursement.

Methods

Patients

All patients presenting to five family practice clinics during a 6-month period were asked by the receptionists to participate in the study, and 1142 patients agreed, approximately 90 percent of those asked. Each patient was given a questionnaire, which required 10–15 minutes for completion. Three hundred forty-six patients (30.3 percent) were HMO members; 684 (59.9 percent) were not; 68 (6.0 percent) were not sure; 44 (3.9 percent) left the question blank and were not included in the analysis. The sample of patients was predominantly female (79 percent), and mean age was 34 years. Ninety-six percent reported that they had visited the clinic previously, so the sample did not represent first-time users for the most part. Eighty-two percent reported that they used their clinic for all of their medical care.

The reason cited most often for using one of the clinics was its location. Quality of service ranked second, followed by health insurance coverage, family usage, recommendations from friends, and services available. Convenience of hours and cost were the last two rankings.

Ninety percent of the patients said that they saw the same physician regularly, so their observations of physician behavior were based on repeated visits. Their median number of visits to their physician was approximately two in the last year.

Questionnaire

Data were gathered by a questionnaire, which asked for demographic information and fre-

Table 2. *Regression of Patient Satisfaction on Physician Behaviors.*

Source	df	Mean Square	*F*	Percent Variance Explained
M.D. is sensitive	1	50.32	244.10	21.58*
M.D. is on time	1	17.92	96.24	7.68*
M.D. follows up promptly	1	5.48	30.42	2.35*
M.D. provides personalized care	1	1.63	9.13	0.70†
M.D. spends enough time	1	0.97	5.48	0.42
M.D. cares and listens	1	0.53	3.01	0.23
M.D. listens to my opinions	1	0.14	0.77	0.06
M.D. explains what he's doing	1	0.01	0.04	0.00
Residual	880	0.18		
Total	888	9.62	54.23	33.02*

*$P<0.001$.
†$P<0.005$.

quency, duration, and reasons for clinic use. Our questions about physician behaviors were generated by a panel of practicing physicians from these and other clinics in the North Central United States and were based on panel members' opinions of their importance in predicting satisfaction. Validity was established by multiple reviews of the content by experts in medicine and management. The medical review was conducted by family medicine faculty from an adjacent large university-based medical center. The management review was provided by management consultants at the Genesis Group, Inc. The satisfaction scale was established with reference to the factors described in the literature as reflecting patient needs. The following items of physician behavior and patient satisfaction were assessed:

- Physician behaviors included spending enough time, rendering explanations, following up, a caring attitude, personalized care, listening to patient statements about health, being on time, and sensitivity to patient needs and concerns. Response categories were always, sometimes, or never.
- Satisfaction items included billing, waiting-room time, examination-room time, staff courtesy, treatment on telephone, quality of care, referral process, and sensitivity of the doctor. Response categories were very satisfied, satisfied, somewhat satisfied, or not satisfied.

Physician behaviors were differentiated from the satisfaction scale in three ways. First, physician behaviors were treated on an item-by-item basis, each of them contributing a relatively unique source of variance. Second, the satisfaction items were pooled to form a seven-item scale. This procedure is consistent with previously published research, which typically uses a multifactor scale. Finally, the wording of physician behavior items and satisfaction items was consistently different. Whereas physician behaviors were assessed as frequencies (always, usually, etc.), satisfaction items were scaled as degrees (very, somewhat, etc.). Thus, we were assured that the areas of assessment were different domains.

Design and Analysis of the Study

Regression analysis was used to predict satisfaction, and t-tests were used to determine the effect of differences in payment type (fee-for-service versus prepaid), with correction for unequal sample sizes using an *F* test for homoscedasticity of variance.

Results

Attitude Scale Reliability

We assessed the reliability of the satisfaction scale using a Cronbach's alpha estimate of reliability. The coefficient was 0.74, which is acceptable for a test of attitudes, especially one containing only seven items. An item-by-item analysis showed that the scale was fairly uniform in its composition, with no single item significantly altering the reliability when it was removed.

Table 3. *Intercorrelations of satisfaction items and variance (r^2).**

	1.	2.	3.	4.	5.	6.	7.
1. The billing process	1.00	0.03	0.02	0.03	0.05	0.04	0.03
2. Waiting time	0.17	1.00	0.08	0.06	0.10	0.04	0.08
3. Staff courtesy	0.15	0.28	1.00	0.23	0.19	0.05	0.17
4. Treatment by receptionist	0.17	0.25	0.48	1.00	0.10	0.03	0.08
5. Quality of care	0.22	0.31	0.44	0.31	1.00	0.10	0.45
6. Referral process	0.20	0.20	0.22	0.18	0.31	1.00	0.10
7. Sensitivity of M.D.	0.18	0.28	0.41	0.28	0.67	0.31	1.00

*Lower left contains correlation coefficients (Pearson r), upper right contains r^2.

Regression Analysis

Our first goal was to determine which physician behaviors were most significant in predicting patient satisfaction. Results from the regression analysis of satisfaction on physician behaviors are presented in Table 2. Each variable was entered into the regression analysis, and F tests were performed to determine the significance of the proportion of variance for which each variable accounted.

Four factors were significantly more important than the remainder in accounting for variance. The most important was *sensitivity to patient needs and concerns.* It explained 21.58 percent of total variance in satisfaction ($F = 244.10$; df 1, 880; $P < 0.001$). Other significant items that emerged were *is on time for my appointments* ($F = 96.24$; df 1, 880; $P < 0.001$), *follows up promptly after my visits to explain results of tests, etc., to me* ($F = 30.42$; df 1, 880; $P < 0.001$), and *provides me with personalized medical care* ($F = 9.13$; df 1, 880; $P < 0.005$). Other individual variables were not significant; however, the entire regression model with all eight variables together accounted for a total of 33.02 percent and was significant ($F = 54.23$; df 8, 880; $P < 0.001$).

To explain the regression results more succinctly, particularly on the construct of satisfaction, a correlation matrix was assembled using intercorrelations of each satisfaction item. Table 3 shows simple correlations and squared correlations (r^2). The highest observed correlation was between *physician sensitivity* and *quality of care* ($r^2 = 0.67$). The variance accounted for by these two variables was $r^2 = 0.45$ or 45 percent. Item-to-total correlations are presented in Table 4, revealing a fairly unified construct.

Table 4. *Item-to-total correlations for satisfaction items.*

1. The billing process	0.28
2. Waiting time	0.37
3. Staff courtesy	0.49
4. Treatment by receptionist	0.40
5. Quality of care	0.58
6. Referral process	0.36
7. Sensitivity of M.D.	0.53

Differences between HMO and Fee-for-Service Patients

Thirty-two percent of the patients reported membership in a prepaid health plan, 62 percent were fee-for-service, and 6 percent were unsure. T-tests controlled for sample size differences and were used to determine the differences between the HMO and non-HMO patients on scales of satisfaction, personalized care, and quality of care. No differences were evident between the two groups. For *satisfaction*, the two groups were very close ($t = 0.53$; df 838; $P = 0.59$). On *personalized care*, they were virtually the same ($t = -0.60$; df 966; $P = 0.55$). For *quality of care*, a nearly identical pattern emerged ($t = 0.23$; df 983; $P = 0.82$). Thus, we cannot conclude that meaningful differences exist between HMO and fee-for-service patients on these dimensions. Table 5 summarizes these results.

Discussion

The question of whether, among the current practice types and provider-reimbursement methods, one arrangement is more likely to produce patient satisfaction is of interest. If prepaid plans can provide similar levels of patient satisfaction, high quality of care, plus more economical rates than

Table 5. *T-tests for difference between means on satisfaction, personalized care, and quality of care.*

	Mean	Standard Deviation	n
Satisfaction*			
HMO	3.24	0.50	277
Non-HMO	3.22	0.51	563
$t = 0.53$; df 838; $P = 0.59$			
Personalized care†			
HMO	3.67	0.57	323
Non-HMO	3.69	0.56	645
$t = 0.60$; df 966; $P = 0.55$			
Quality of care‡			
HMO	3.49	0.63	328
Non-HMO	3.51	0.63	657
$t = 0.23$; df 983; $P = 0.82$			

*Scale values ranged from 4 = very satisfied to 1 = not satisfied.

†Scale values ranged from 4 = always to 1 = never.

‡Scale values ranged from 4 = very satisfied to 1 = not satisfied.

traditional fee-for-service practice, it is likely that they will continue to increase their market share of the health care dollar.

A number of investigators have examined the relationship of patient satisfaction to method of reimbursement for health care services. While some have suggested that satisfaction is higher with fee-for-service (FFS) than with prepaid arrangements, Ross, et al.[16] found that satisfaction levels were similar because of the influence of expectations on entering the practice and the patients' experiences over time. Gray,[18] on the other hand, found that FFS patients were more satisfied with their physician's services and that this difference became greater over time. All these studies, however, have compared satisfaction levels between large prepaid bureaucratically organized groups and fee-for-service solo or group practices.

The emergence of newer types of prepaid plans (including individual practice associations and preferred provider organizations), in which providers in solo or group practice may see FFS patients as well as patients enrolled in prepaid plans, has provided another context for study. In this type of practice, several variables (such as staff courtesy, location, and accessibility) are held relatively constant, because they are presumably the same for both types of patients. Only Murray's study [19] addressed satisfaction in prepaid versus FFS patients in a single practice—an academic family health center with multiple providers. He found no statistically different levels of overall satisfaction between the two patient groups. The only difference among the individual constructs was *physician conduct/humaneness* where FFS patients were more satisfied. The sample size (87 prepaid, including federal payment programs; 98 FFS) limited the generalizability of this finding, as did the educational setting in which the study was conducted.

Our study included a larger number of patients (346 prepaid; 684 FFS) in five practices providing medical care for both prepaid and FFS patients. No differences were found between prepaid and FFS patients on the scale of overall satisfaction or on their perception of quality of care or personalized care. While we did not ask the same questions asked by Murray (1.—Doctors always treat their patients with respect; 2.—Doctors respect their patients' feelings), which were interpreted to describe *humaneness* (perhaps more precisely, respectfulness), patient rating of physician behaviors such as *a caring attitude, personalized care, listens to statements about my health,* and *sensitivity to patient needs and concerns* also sampled patients' perceptions of their physicians' *humaneness*. Prepaid and FFS patients' responses differed significantly in none of these areas.

Potential differences between study groups could result from self-selection between groups, demographic differences, and differences in physician behaviors resulting from cost-containment incentives. These factors were possible sources of bias in our study as well, even though there were no meaningful differences observed in demographics.

Whether a patient's responses measured satisfaction with his or her health care in general, or with that particular visit, cannot be determined from our data. Similarly, because expectations for care were not measured at patients' entry into practices, we cannot evaluate our findings for the effects of the passage of time.

Because the null hypothesis that FFS and prepaid patients are similar in their level of satisfaction with their health care could not be rejected on the basis of our findings, both groups' responses were analyzed together to determine what physician behaviors accounted for satisfaction levels. *Sensitivity* accounted for the largest proportion of variance, followed by *on time, follows up promptly,* and *provides personalized care.* The Lochman review[1] seems to be consistent with our

findings. *Sensitivity* may have reflected patient's assessment of physicians' communication skills and affiliative behaviors; *on time* (promptness) was an organizational characteristic; and *following up promptly* most likely reflected patients' sense of their physicians' accessibility to them.

This study illustrated some problems in this area of research. First, the lack of common variable descriptions and study methods rendered cross-study comparisons difficult, although certain factors were remarkably consistent in accounting for patient satisfaction. Perhaps a more serious and complex concern was the relation between physician behaviors and competence and patient satisfaction. Any overall rating of quality of care must ultimately include ratings of the physician's objective competence, patient perception of competence, patient satisfaction, and clinical outcome. The complexity of these relations provides a challenge for building reliable predictive models of satisfaction and quality of care.

References

1. Lochman JE. Factors related to patients' satisfaction with their medical care. J Community Health 1983; 9:91-109.
2. Bartlett EE, Grayson M, Barker R, Levine DM, Golden A, Libber S. The effects of physician communications skills on patient satisfaction; recall, and adherence. J Chronic Dis 1984; 37:755-64.
3. Bertakis KD. The communication of information from physician to patient: a method for increasing patient retention and satisfaction. J Fam Pract 1977; 5:217-22.
4. Ben-Sira Z. The function of the professional's affective behavior in client satisfaction: a revised approach to social interaction theory. J Health Soc Behav 1976; 17:3-11.
5. Comstock LM, Hooper EM, Goodwin JM, Goodwin JS. Physician behaviors that correlate with patient satisfaction. J Med Educ 1982; 57:105-12.
6. Deyo RA, Diehl AK. Patient satisfaction with medical care for low-back pain. Spine 1986; 11:28-30.
7. DiMatteo MR, Taranta A, Friedman HS, Prince LM. Predicting patient satisfaction from physicians' nonverbal communication skills. Med Care 1980; 18:376-87.
8. DiMatteo MR, Linn LS, Chang BL, Cope DW. Affect and neutrality in physician behavior: a study of patients' values and satisfaction. J Behav Med 1985; 8:397-409.
9. DiMatteo MR, Hays R. The significance of patients' perceptions of physician conduct: a study of patient satisfaction in a family practice center. J Community Health 1980; 6:18-34.
10. Dimatteo MR, Prince LM, Taranta A. Patients' perceptions of physicians' behavior: determinants of patient commitment to the therapeutic relationship. J Community Health 1979; 4:280-90.
11. Feletti G, Firman D, Sanson-Fisher R. Patient satisfaction with primary-care consultations. J Behav Med 1985; 9:398-9.
12. Merkel WT. Physician perception of patient satisfaction. Do doctors know which patients are satisfied? Med Care 1984; 22:453-9.
13. Eisenthal S, Koopman C, Lazare A. Process analysis of two dimensions of the negotiated approach in relation to satisfaction in the initial interview. J Nerv Ment Dis 1983; 171:49-54.
14. Linder-Pelz S. Social psychological determinants of patient satisfaction: a test of five hypotheses. Soc Sci Med 1982; 16:583-9.
15. Woolley FR, Kane RL, Hughes CC, Wright DD. The effects of doctor-patient communication on satisfaction and outcome of care. Soc Sci Med 1978; 12:123-8.
16. Ross CE, Wheaton B, Duff RS. Client satisfaction and the organization of medical practice: why time counts. J Health Soc Behav 1981; 22:243-55.
17. Murphy-Cullen CL, Larsen LC. Interaction between the socio-demographic variables of physicians and their patients: its impact upon patient satisfaction. Soc Sci Med 1984; 19:163-6.
18. Gray LC. Consumer satisfaction with physician provided services: a panel study. Soc Sci Med 1980; 14A:65-73.
19. Murray JP. A comparison of patient satisfaction among prepaid and fee-for-service patients. J Fam Pract 1987; 24:203-7.
20. Ben-Sira Z. Lay evaluation of medical treatment and competence development of a model of the function of the physician's affective behavior. Soc Sci Med 1982; 16:1013-9.