

# Is the Professional Satisfaction of General Internists Associated with Patient Satisfaction?

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**BACKGROUND:** The growth of managed care has raised a number of concerns about patient and physician satisfaction. An association between physicians' professional satisfaction and the satisfaction of their patients could suggest new types of organizational interventions to improve the satisfaction of both.

**OBJECTIVE:** To examine the relation between the satisfaction of general internists and their patients.

**DESIGN:** Cross-sectional surveys of patients and physicians.

**SETTING:** Eleven academically affiliated general internal medicine practices in the greater-Boston area.

**PARTICIPANTS:** A random sample of English-speaking and Spanish-speaking patients ( $n = 2,620$ ) with at least one visit to their physician ( $n = 166$ ) during the preceding year.

**MEASUREMENTS:** Patients' overall satisfaction with their health care, and their satisfaction with their most recent physician visit.

**MAIN RESULTS:** After adjustment, the patients of physicians who rated themselves to be very or extremely satisfied with their work had higher scores for overall satisfaction with their health care (regression coefficient 2.10; 95% confidence interval 0.73–3.48), and for satisfaction with their most recent physician visit (regression coefficient 1.23; 95% confidence interval 0.26–2.21). In addition, younger patients, those with better overall health status, and those cared for by a physician who worked part-time were significantly more likely to report better satisfaction with both measures. Minority patients and those with managed care insurance also reported lower overall satisfaction.

**CONCLUSIONS:** The patients of physicians who have higher professional satisfaction may themselves be more satisfied with their care. Further research will need to consider factors that may mediate the relation between patient and physician satisfaction.

**KEY WORDS:** satisfaction with care; physician characteristics; patient characteristics.

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Patient reports about their health care experiences are increasingly being used as an indicator of the quality of health care.<sup>1</sup> Payers, employers, and providers have learned that patient assessment of care varies between health care settings, and that patients will change providers on the basis of these assessments.<sup>2</sup>

Both patient and physician characteristics have been shown to be associated with patient satisfaction. Previous studies have suggested that a physician's age,<sup>3</sup> gender,<sup>3,4</sup> and training<sup>5</sup> can all modify a patient's perception of care. It has been hypothesized that the interaction between a patient's and a physician's values,<sup>6</sup> expectations of the encounter, attitudes, and experience<sup>7</sup> may affect patient-physician communication<sup>3,8</sup> and decision making,<sup>9</sup> and therefore affect satisfaction.<sup>9,10</sup> Several observations suggest that a physician's professional satisfaction may have an important effect on patient satisfaction. Practice sites with more satisfied patients are more likely to have more satisfied physicians, suggesting that organizational features of the practice setting may affect the satisfaction of both patients and providers.<sup>11</sup> We do not know if this association persists after controlling for patient and physician characteristics. Although we know that physicians are more likely to be effective if they are satisfied with their work environment,<sup>12,13</sup> we do not know if physician satisfaction with aspects of work life translate into patient satisfaction.

The issue of satisfaction with work life is especially important as payers embrace managed care, while physicians continue to express concerns about the effect of managed care on their autonomy, professional satisfaction, and the quality of care that they can provide.<sup>14</sup> The goal of this study was to examine the relation between the professional satisfaction of general internists and their patients.

## METHODS

### Study Setting

The Ambulatory Medicine Quality Improvement Project was designed to examine factors associated with variation in the quality of care at 11 general internal medicine practices associated with Harvard Medical School teaching hospitals. All of these sites are located in the greater-Boston area, but are diverse in location, structure, and the degree of academic affiliation. The sites comprised six hospital-based practices, one university health service with a group-model health maintenance organization (HMO) structure, one large, commercial group-model HMO, two neighborhood health centers in disadvantaged communities, and one suburban group practice. The

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study was approved by the institutional review board of each institution.

## Patients

Patients were randomly selected for this study if they were between the ages of 20 and 75 years and had at least one visit to an attending-level primary care physician during the preceding year. Six hundred patients meeting these eligibility criteria were selected randomly from each site. These patients were sent an informational letter about the study and asked to return an "opt-out" postcard if they did not want to participate. The medical records of patients who did not return this postcard were reviewed by trained research nurses, up to a maximum of 500 participants per site. Attempts were made to reach these patients by telephone to complete a telephone survey. Patients were eligible for the survey if they spoke English or Spanish. Recruitment was done sequentially at the participating sites, and all patient interviews were completed between August 1996 and October 1997.

The telephone survey included questions about sociodemographic characteristics, health status, and satisfaction with their medical care. Patients were asked to rate several aspects of their health care using questions derived from the Medical Outcomes Study (Table 1).<sup>2</sup> Factor analysis was used to cluster related items into subscales. These analyses suggested that there were 3 distinct domains of patient satisfaction: (1) overall satisfaction, (2) satisfaction with the most recent physician visit, and (3) satisfaction with access to care. The internal consistency of each of these subscales (Cronbach's  $\alpha$ ) was 0.75, 0.89, and 0.67, respectively. Because our interest was to examine the relation between physician satisfaction and patient satisfaction, we present analyses examining overall satisfaction and satisfaction with the most recent physician visit as outcome variables. Scores measuring these 2 domains of patient satisfaction were constructed by taking the mean of the nonmissing items, when at least half of the questions in the domain were answered, and transforming the score to range from 0 (extreme dissatisfaction) to 100 (extreme satisfaction). We did not calculate an overall satisfaction score for patients who did not respond to at least half of the questions in the scale (i.e., the data were missing). The number of patients with missing responses to individual questions or who could not have a domain score calculated was low (Table 1).

The identity of a patient's primary care physician was obtained by reviewing the patient's medical record. Information about patients and their physicians was linked using a unique study identification number.

## Physicians

General internists practicing at one of the participating sites in February 1996 were surveyed between March and May 1996 to assess sociodemographic and profes-

sional characteristics as well as professional satisfaction. The details of this survey have been described previously.<sup>15</sup> Physicians were asked to respond to the question, "Overall, how satisfied are you with your work?" on a 5-point fixed-choice response scale (i.e., very dissatisfied to extremely satisfied).

## Analytic Variables

The primary care physician's overall professional satisfaction was the principal predictor variable of interest. Categorical responses to the question on overall physician satisfaction were dichotomized as very or extremely satisfied compared with all other responses based on an a priori analysis plan modeled after other analyses of satisfaction.<sup>2,16</sup> We examined two outcome measures: patients' overall satisfaction with their health care and their satisfaction with their most recent physician visit. As described above, each of these was reported as a score from 0 to 100.

Other independent variables examined included physician characteristics (i.e., age, gender, full-time vs part-time employment, and percentage of time spent in direct patient care, administration, research, and teaching) and patient characteristics (i.e., age, gender, race, level of education, health insurance, health status, and whether or not patients had difficulty communicating with their physician because of language). We did not collect information on the race or ethnicity of the physicians because there were few minority physicians in our sample, and we were concerned about maintaining their confidentiality. We also examined gender concordance of physician-patient pairs.

## Statistical Analysis

Linear regression models were used to examine the association between physician characteristics, patient characteristics, and continuous patient satisfaction scores. A stepwise regression algorithm was used to develop initial multivariate models from patient and physician characteristics. Because the motivation for developing these models was to identify possible determinants of patient satisfaction and to control for confounding factors, we used an entrance criterion of  $p \leq .15$  and a criterion to stay in the model of  $p \leq .10$ . From the variables selected in these models, we then used the generalized estimating equation approach to estimate the final regression coefficients and standard errors, while controlling for intraphysician correlation of patient satisfaction.<sup>17</sup> These models also adjusted for the site of care.

## RESULTS

### Response Rates

Of the 4,167 patients who were eligible to participate in the survey, 724 (17.4%) refused to participate, 45

Table 1. Domains of Patient Satisfaction\*

Overall satisfaction (missing = 2)
Overall, how satisfied are you with your health care provider? <sup>†</sup> (missing = 32)
How satisfied are you with the overall quality of the practice? <sup>†</sup> (missing = 119)
Would you recommend this practice to your family or friends? <sup>‡</sup> (missing = 68)
Do you plan to come back to this practice? <sup>‡</sup>
Satisfaction with most recent physician visit (missing = 4)
How would you rate the visit overall? <sup>§</sup> (missing = 12)
How would you rate the technical skills (thoroughness, carefulness, competence) of your physician during your most recent visit? <sup>§</sup> (missing = 41)
How would you rate the personal manner (courtesy, respect, sensitivity, kindness) of your physician during your most recent visit? <sup>§</sup> (missing = 9)
How would you rate the explanation of what was done to you during your most recent visit? <sup>§</sup> (missing = 78)
How much time was spent with your physician during your most recent visit? (missing = 25)

\*The number of participants (from the overall sample of 2,620) who did not respond to each question, combined with the number of participants with a domain that could not be calculated because of missing data, is shown in parentheses.

<sup>†</sup>Response categories: very satisfied, satisfied, not sure, dissatisfied, very dissatisfied.

<sup>‡</sup>Response categories: yes, no.

<sup>§</sup>Response categories: excellent, very good, good, fair, poor.

(1.1%) did not complete the entire survey, 540 (13.0%) could not be reached by telephone after at least 10 attempts, and 2,858 (68.6%) completed the survey. Of the 211 physicians eligible to participate, 190 (90.0%) responded. Of the patients who completed the survey, 2,620 (91.7%) had an identified primary care physician in our physician sample. The final sample for this analysis was therefore composed of 2,620 patients linked with 166 physicians.

Some demographic information was available from medical record review to compare the respondents with the nonrespondents. Patients who responded to the survey were slightly older (43.3 vs 44.7 years,  $p < .001$ ). Sixty-four percent of eligible men responded to the survey and 72% of eligible women ( $p < .001$ ).

### Description of the Participants

The demographic characteristics of the patients and physicians who participated in the study are displayed in Table 2. Four percent of patients reported that they had difficulty talking with their physician because of language. Eighty-six percent of patients had been seeing their primary care physician for over 1 year. The majority of physicians worked full-time (77%). Thirty-three percent of physicians said that they spent less than 50% of their time providing direct patient care, 31% spent between 50% and 79% of their time providing patient care, and 36% spent at least 80% of their time providing patient care. Seventeen percent of physicians did not include any administrative activities in their job description, 46% percent spent 1% to 19% of their time doing administrative activities, and 37% of physicians spent at least 20% of their time on administration. Forty-two percent of the sample performed some research, and 87% spent some time teaching.

### Patient and Physician Satisfaction

The mean overall patient satisfaction score was 96.1 (range, 50–100), and the mean satisfaction score with the last physician visit was 84.8 (range, 20–100). Twelve

Table 2. Description of the Study Participants

Characteristic	n (%)
Patients (n = 2,620)	
Age, y	
Less than 40	807 (31.4)
40–49	959 (37.3)
At least 50	807 (31.4)
Gender	
Female	1,689 (64.5)
Male	931 (35.5)
Race/ethnicity	
White	1,855 (72.5)
African American	302 (11.8)
Latino	302 (11.8)
Asian American/other	100 (3.9)
Overall health status	
Poor–fair	396 (15.2)
Good	723 (27.7)
Very good–excellent	1,493 (57.2)
Insurance status	
None	126 (5.1)
Commercial/private	870 (35.6)
Managed care plan	1,451 (59.3)
Physicians (n = 166)	
Age, y	
Less than 40	66 (39.8)
40–49	55 (33.1)
At least 50	45 (27.1)
Gender	
Female	66 (39.8)
Male	100 (60.2)

percent of physicians described themselves as extremely satisfied with their work; 48%, very satisfied; 34%, somewhat satisfied; 5%, not very satisfied; and 1%, very dissatisfied.

### Patient and Physician Characteristics Associated with Patient Satisfaction

Several patient characteristics were significantly associated with the 2 measures of patient satisfaction (Table 3). In general, patients who were older, white, more educated, had commercial insurance, or reported better overall health status were more satisfied.

Of the physician characteristics examined, only professional satisfaction was associated with both measures of patient satisfaction. The magnitude of the differences seen in patient satisfaction across the levels of physician satisfaction were similar to the differences in patient satisfaction seen for the patient characteristics examined.

In multivariate models, patients who were younger reported poorer overall satisfaction and poorer satisfaction with their most recent visit (Table 4). African-American, Latino, or Asian-American patients reported poorer overall satisfaction than whites. Patients with better overall health status reported better satisfaction with both measures of satisfaction. Patients with managed care insurance were

**Table 3. Patient Satisfaction Scores by Patient and Physician Characteristics**

Characteristic	Mean Overall Satisfaction	Mean Satisfaction with the Most Recent Physician Visit
<b>Patients</b>		
Age, y		
Less than 40	95.3*	83.2*
40–49	95.9	84.8
At least 50	97.6	86.3
Race/ethnicity		
White	96.2	86.5*
African American	96.5	81.6
Hispanic	97.0	79.6
Asian American/other	94.0	78.9
Difficulty communicating with physician because of language barrier		
Yes	95.6	79.3*
No	96.2	85.0
Level of education		
Less than high school	96.8	80.0*
High school graduate	96.9	83.4
Beyond high school	95.9	85.7
Health insurance		
None	94.2*	80.8*
Managed care plan	95.8	84.0
Commercial/private	97.2	86.8
Overall health status		
Very good–excellent	96.4	87.3*
Good	96.0	82.0
Poor–fair	95.4	80.3
<b>Physicians</b>		
Gender		
Female	95.8	84.9
Male	96.4	84.7
Work status		
Full-time	96.0	84.7
Part-time	96.8	85.4
Percentage of time spent on administrative responsibilities		
None	95.4	83.1*
Less than 20%	96.1	84.4
At least 20%	96.7	86.3
Professional satisfaction		
Very–extremely satisfied	96.7*	85.7*
Less satisfied	95.3	83.5

\* $p \leq .005$  for comparison within the category of patient or physician characteristics.

Table 4. Patient and Physician Characteristics Associated with Patient Satisfaction\*

Characteristic	Overall Satisfaction, Regression Coefficient (95% Confidence Interval)	Satisfaction with Most Recent Physician Visit, Regression Coefficient (95% Confidence Interval)
Patients		
Age, y		
Less than 50	-2.40 (-3.86, -.95)	-1.81 (-2.72, -.91)
At least 50	—	—
Race/ethnicity		
African American	-3.28 (-5.44, -1.12)	1.21 (-0.12, 2.53)
Latino/Asian American/other	-4.29 (-6.19, -2.39)	0.83 (-0.51, 2.17)
White	—	—
Overall health status		
Very good–excellent	6.17 (4.13, 8.21)	1.41 (0.14, 2.69)
Good	1.09 (-0.70, 2.89)	0.51 (-0.82, 1.84)
Poor–fair	—	—
Health insurance		
Managed care plan	-1.53 (-2.73, -.34)	-0.56 (-1.47, .34)
Commercial/private	—	—
Physicians		
Work status		
Full-time	-2.49 (-3.91, -1.06)	-1.17 (-2.21, -.13)
Part-time	—	—
Professional satisfaction		
Very–extremely satisfied	2.10 (0.73, 3.48)	1.23 (0.26, 2.21)
Less satisfied	—	—

\*The multivariate models adjusted for site of care, percentage of time that physician spent on administrative activities, and whether patients reported difficulty communicating with their physician because of language, in addition to all of the factors displayed here.

more likely to report poorer overall satisfaction. Patients of physicians who worked full-time had lower satisfaction than the patients of physicians who worked part-time. Patients of a physician with high professional satisfaction had higher satisfaction with their care than patients of physicians with lower satisfaction.

## DISCUSSION

Both patient and physician satisfaction are complex responses to an individual's values, attitudes, expectations of the encounter, and experiences. Our work suggests that there is an association between the professional satisfaction of general internists and the satisfaction of their patients. There are several potential explanations for this finding.

A patient's satisfaction with a medical encounter results from the patient's perception that his or her expectations have been met and requests fulfilled.<sup>18</sup> Physicians who are themselves more satisfied may be better able to address a patient's questions and concerns.<sup>19</sup> A physician's affect toward their patients is correlated with patient satisfaction.<sup>20,21</sup> Providers who are more satisfied with their professional life may communicate better or be more empathetic.<sup>22</sup>

An alternative explanation of the observed relation between physician and patient satisfaction is that both patient and provider satisfaction are determined by some

other aspect of the delivery of care that we did not measure. Physicians with greater professional competence may have greater professional satisfaction, and patients may be able to detect better competence, which results in better satisfaction.<sup>18</sup> Patients and physicians in large managed care organizations have independently been shown to be less satisfied; physicians are dissatisfied with their clinical autonomy and patients are dissatisfied because they are concerned about their access to their physician.<sup>3</sup> Physicians who take care of more capitated patients report lower satisfaction with the quality of care that they can provide for these patients<sup>23</sup>; these patients may also be less satisfied with their care.<sup>2</sup> Practice sites with more satisfied patients have been shown to have more satisfied physicians.<sup>11</sup> It is also possible that patients who are more satisfied with their care prompt their physician to feel more satisfied with his or her work life.

Studies have examined the relation between several patient and physician characteristics and patient satisfaction. Older patients consistently appear to be more satisfied than younger patients.<sup>3,19,24</sup> Gender, ethnicity, income, and education have all shown inconsistent effects on satisfaction.<sup>3,19,24–27</sup> Paralleling prior work,<sup>2</sup> we found that patients with managed care insurance had lower overall satisfaction with medical care, but their satisfaction with the most recent physician visit was similar to that of patients with other types of insurance coverage. Lower

satisfaction among patients with managed care has been shown to be in part due to limitations in choosing a primary care physician.<sup>16</sup> The conclusions of many studies of patient satisfaction have been limited by sample size. Our sample is large by comparison, and we are able to look more definitively at the independent effects of these factors.

Prior work has suggested that the physician's age,<sup>3</sup> gender,<sup>3,4</sup> and training<sup>5</sup> may affect patient satisfaction, but we did not find a significant relation between these physician characteristics and patient satisfaction. It is intriguing that the patients of physicians who work part-time were more satisfied than those of physicians who work full-time. Perhaps physicians who work part-time feel less time pressure and are therefore able to listen and respond to patients' concerns more thoroughly.

Our study has several limitations. We did not examine the concordance of patient and physician satisfaction with a specific interaction. Rather we chose to examine the association between physician satisfaction and the satisfaction of a sample of patients in their practice. The identity of a patient's primary care physician was not obtained directly from the patient, but rather from the patient's medical record. Any differences in assignment should be random and, if anything, would bias our findings away from the described relation between physician and patient satisfaction. We do not have information about the penetrance of managed care in a physician's overall practice. The penetrance of managed care in a practice could affect both patient and physician satisfaction. Depression has been associated with patient satisfaction and may also be associated with physician satisfaction. We did not measure patient or physician depression and therefore cannot control for its effect. Finally, we measured only limited aspects of patient and physician interaction. We do not believe that satisfaction is the only important dimension of this interaction.

Managed care has produced increasing financial and time constraints for general internists. We believe that the interrelation between physician and patient satisfaction is an important issue in our health care system. The consumer movement in health care empowers patients and insists that providers find ways to improve patient satisfaction with care. Conversely, managed care is perceived as disempowering physicians and decreasing their professional satisfaction. Our work suggests that to improve patient satisfaction, one must also consider physician satisfaction.

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