

Patient-Physician Discordance in Fibromyalgia

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ABSTRACT. Objective. Discordance between patients' and physicians' health perceptions and satisfaction with the office visit in fibromyalgia (FM) has not been examined. We investigated this phenomenon to identify demographic, clinical, and psychosocial factors associated with patient-physician discordance on physical functioning, well being, and satisfaction with the office visit.

Methods. A sample of 182 women were examined by a rheumatologist to confirm the FM diagnosis. Patients and physicians independently completed the Patient-Physician Discordance Scale to assess perceptions of health and satisfaction with the office visit. Patients also completed questionnaires pertaining to sociodemographics, social support, disability, perceived stress, and psychological distress following the office visit. Separate generalized estimating equations with forward selection, controlling for the possible dependence of outcomes among patients of same physician, were modeled for each measure of discordance.

Results. The highest discordance score was on satisfaction with the office visit; physicians systematically underestimated patients' level of satisfaction. Higher levels of satisfaction with social support ($p < 0.02$) and more psychological distress ($p < 0.03$) were marginally associated with greater discordance on physical functioning. Higher levels of satisfaction with social support ($p < 0.003$), younger age ($p < 0.02$), and lower disability ($p < 0.03$) were associated with greater discordance on well being. More sexual abuse ($p < 0.01$) was significantly associated with more discordance on satisfaction with the office visit.

Conclusion. There is a gap between what patients with FM and rheumatologists examining them experience during the office visit. Psychosocial factors contribute to our understanding of discordance on physical functioning, well being, and satisfaction. (J Rheumatol 2003;30:1326-34)

Key Indexing Terms:

FIBROMYALGIA

PSYCHOSOCIAL

DISCORDANCE

PHYSICIAN-PATIENT COMMUNICATION

It is estimated that the prevalence of fibromyalgia (FM) is 3.4% for women and 0.5% for men¹. FM is the second most common diagnosis in rheumatology clinics². Cross-sectional and population studies conducted in Europe, South America, the United States, and Canada collectively indicate that FM is a major cause of morbidity³. FM may coexist with other rheumatic diseases (e.g., lupus) and often

presents in conjunction with syndromes such as irritable bowel and chronic fatigue⁴. Patients with FM often are high-end users of medical services⁵⁻⁷ (and Schultes H, *et al*, unpublished data); nonetheless, their symptoms remain stable over time^{8,9}. Health care providers tend to avoid contact with FM patients who, in turn, may feel misunderstood and rejected by health care providers¹⁰. At present, there is a paucity of knowledge regarding the physician-patient relationship or communication patterns in this patient population.

With increased acceptance of shared medical decision-making, interest has arisen in studying discordance between patients and physicians¹¹. In previous times, "doctor's orders" were accepted unquestioningly, with little need to verify whether patients agreed with their doctors' advice. As the patient-physician relationship gained recognition as a partnership, it became evident that discrepant views on health status or treatment plans could influence patient outcomes¹². It is possible that discordant perceptions may be the result of ineffective communication between the patient and physician.

Patient-physician discordance is more frequent in some diseases than in others. For example, disagreement is unlikely to occur when a patient presents with symptoms of otitis, a medical problem that is usually easy to detect and

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cure. When a patient presents with vague symptoms (e.g., fatigue) or when standard laboratory tests fail to substantiate pathology, the likelihood of disagreement in health related issues increases. One may expect, then, that for patients with FM, a disorder with no known pathognomonic markers and vague and nonspecific symptoms (e.g., widespread body pain, morning stiffness), the possibility that they may differ in their perceptions compared to physicians is high.

To date, almost no studies have investigated this issue in FM patients directly. The few that did corroborate the existence of discordance between patients' and health professionals' perceptions. For example, Hidding, *et al*¹³ compared self-report measures and clinical observations of functional disability in 3 groups of rheumatology patients: ankylosing spondylitis, rheumatoid arthritis, and FM. Although there were only 13 patients with FM, differences between self-report and observations of behaviors were highest in the FM group, with these patients rating significantly more dysfunction compared to occupational therapists. In other research that examined discordance in terms of patient self-report of pain and objective tender point count, Jacob, *et al*¹⁴ found a significant concordance between these measures only for patients with disease duration greater than 10 years ($r = 0.44, p < 0.001$).

There are several reasons why a study of discordance between patients with FM and physicians and assessment of the role of psychosocial factors is timely. First, given that psychosocial problems evident in FM¹⁵ are believed to play a role in explaining patient-physician discordance in other patient populations¹⁶⁻¹⁹, it follows that this needs to be investigated in FM. Second, patients with FM often present with multiple conditions⁴, including "physical" (headaches, irritable bowel syndrome) and "psychological" (depression) disturbances that may negatively influence the formation of a therapeutic alliance^{20,21}. Few studies have attempted to identify patient characteristics, other than psychological distress, which may influence patient-physician discordance such as perceived stress, social support, and comorbid conditions. Third, patients and/or their physicians may be dissatisfied with the office visit when they disagree with one another²². This could result in the disengagement of one or both individuals from the partnership²³. The patient may seek treatment elsewhere²⁴; the doctor may provide minimal services or refer the patient to another health professional²⁵. Finally, patient and physician disagreement about health related issues may affect patients' adherence to the proposed treatment plan²⁶.

We administered a validated questionnaire that assessed patient-physician discordance. We also had patients complete validated psychosocial instruments selected for their relevance to the outcomes of interest. We describe disagreement following the office visit and address the question, "What are the determinants of patient-physician discordance on health perceptions and on satisfaction with

the visit in patients with FM?". Results of this investigation may clarify areas of disagreement that are modifiable so that communication between patients with FM and their physicians may be improved.

MATERIALS AND METHODS

Two approaches were used for subject recruitment. First, 10 rheumatologists working in hospitals and private practice settings identified women with FM who were scheduled for an office visit and invited them to participate in the study. Second, newspaper advertisements were run seeking women with widespread body pain and fatigue. This latter method included a structured telephone screening interview developed by White, *et al*³ that identified patients most likely to have FM. Those who screened positive were subsequently examined by a rheumatologist to confirm the diagnosis. These participants were informed that no recommendations would be made in regard to FM treatment. The purpose of the office visit was to confirm the FM diagnosis; a history was taken, tender points assessed, and patient mental health was discussed.

Physicians were informed that their participation would involve completing a questionnaire on one occasion pertaining to their age, sex, medical school training, current level of training, and experience treating FM. After a scheduled visit with a patient who agreed to participate in this study, physicians were asked to complete a 10 item visual analog scale (VAS) questionnaire pertaining to their visit. The research protocol was approved by the McGill University Faculty of Medicine Institutional Review Board as well as all other hospitals not affiliated with McGill University.

Eligible participants had to be age 18 years or older, have a diagnosis of primary FM [using American College of Rheumatology (ACR) criteria], and be fluent in English or French. Written informed consent was obtained. Patients were informed that their participation involved completing a questionnaire immediately following the office visit (independent of the physician) and a battery of questionnaires within 72 hours after their visit with the physician. Fifteen patients from tertiary care approached by the rheumatologist declined to enter the study. Among subjects from the community who contacted us and screened positive, about one-third failed to attend the medical examination. Among the 104 who were examined, 99 met ACR criteria for FM and 5 did not. In total, 99 community and 91 tertiary care participants entered the study. From this subject pool, 8 failed to provide data (6 of whom were from tertiary care), resulting in a sample of 182. Most (95.6%) completed the questionnaires at home and 76.2% mailed them back to the research office within 72 hours. The time interval between their initial visit with physician and the completion of the psychosocial measures was not statistically correlated with patients' scores on any questionnaire (data not shown).

Outcomes measures. Patient-Physician Discordance Scale. Patient and physician perceptions of health status were assessed independently with the Patient-Physician Discordance Scale (PPDS), a questionnaire developed by our team in the context of a study of patients with inflammatory bowel disease (IBD)²⁷. The PPDS is a 100 mm anchored horizontal visual analog scale consisting of 10 items derived from the literature on physician-patient agreement. Items relate to functioning (e.g., pain, disease activity, physical limitations, emotional well being, and psychological distress); expectations of the visit (e.g., patient desire for further testing and for prescription of medication); communication (e.g., discussion of main problem and psychosocial issues); and patient satisfaction with visit.

Discordance is determined by calculating the difference between the patient's and physician's VAS ratings for each of the 10 items. Although crude discordance scores inform the reader about who perceives items worse compared to the other, one disadvantage of using directional scores in analyses is that when items are summed, positive differences on some items may cancel out negative differences on others. A mean directional score of 0 may represent either perfect agreement across all items or considerable differences in opposite direction on several items. One way to

avoid ambiguity is to calculate the absolute value of the corresponding directional score. In doing so, an absolute discordance score of 0 would indicate perfect concordance. This absolute value is interpreted as the magnitude of discordance between physician and patient, without it being influenced by whether the patient or physician scored higher on particular items.

In patients with IBD, a principal component factor analysis identified 3 factors that together explained 51.4% of total variance. These were: (1) symptoms and treatment (pain, physical limitation, expectations for a prescription and for testing); (2) well being (disease activity, psychological distress, and emotional well being); and (3) medical encounter (problem discussed, personal issues discussed, and satisfaction with medical visit). Intraclass correlation coefficients calculated on the 10 patient ratings ranged between 0.67 and 0.92, indicating satisfactory reliability²⁸.

For this study, 2 items (expectation for testing and for a prescription) were dropped from the symptoms and treatment subscale, as they applied only to participants recruited by the rheumatologist. The modified subscale was renamed "physical functioning" because it consisted of 2 items (pain and physical limitations). The well being subscale was retained with no modifications. The medical encounter subscale was not retained because it did not apply to the subjects recruited from the community. That is, not all community based participants discussed personal issues with the rheumatologist. A single discordance score on patient satisfaction with the visit was retained as a separate outcome variable. This item asks the physician to consider how satisfied he or she believes the patient felt about the visit; for the other items considered here the physician is asked to rate the patient according to his or her own perception of the patient's functioning.

Putative determinants of discordance.

Sociodemographics. Patients provided information on age, marital status, level of education, and annual household income.

Clinical characteristics.

Disability. The Fibromyalgia Impact Questionnaire (FIQ) is a reliable²⁹, validated, self-administered instrument that measures physical functioning, work status, psychological distress, pain, stiffness, fatigue, and well being within the past week. The first 10 items record the respondent's ability to carry out daily tasks (e.g., grocery shop); 2 items pertain to ability to work; and 7 VAS items pertain to FM symptoms (e.g., morning stiffness). A total score was calculated, with high scores indicating greater disability.

Comorbidity. Patients were asked to indicate whether they suffered from headaches, irritable bowel syndrome, or arthritis; moreover, they listed all other medical conditions. "Other medical conditions" solicited a range of disorders, such as cancer, herpes, depression, allergies. In total, we coded 44 distinct medical conditions. A comorbidity score was derived by summing the total number of conditions endorsed. Scores ranged from 0, "no other condition" to 5, "5 or more conditions."

Duration under rheumatologist's care. Patients indicated the duration of time (in months) under a rheumatologist's care. Patients who were not followed by a rheumatologist received a score of 0. This variable was dichotomized using a cutoff point of 12 months.

Psychosocial characteristics.

Perceived stress. The Perceived Stress Scale, a 10 item instrument, was used to assess the degree to which patients felt overwhelmed by stressful life situations that had occurred during the past month³⁰. Items are scored on a 5 point scale from 0, "never" to 4, "very often." In our sample, Cronbach's alpha was 0.84, indicating high internal consistency. *Psychological distress.* Psychological distress was measured with the Symptom Checklist-90-R, a widely used and validated 90 item self-report measure that assesses a variety of symptoms experienced during the past week³¹. Nine symptom clusters are assessed, including somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. A summary score is derived by combining the items to create a global severity index (GSI).

Descriptive statistics for GSI T-scores are reported to facilitate interpretation. The internal consistency of the GSI scale in our sample was very high (Cronbach's alpha 0.98).

Extent of sexual abuse. A history of sexual abuse was assessed through a validated³² self-report questionnaire developed for population based surveys of sexual and physical abuse³³. Patients were asked to respond to 5 questions on episodes of sexual abuse. This questionnaire has been employed in studies of patients with chronic pain, including FM³⁴⁻³⁶. The extent of sexual abuse was represented by the number of items endorsed. Satisfaction with social support. Social support was assessed with an abbreviated version of the Social Support Questionnaire (SSQ6)³⁷. This validated instrument, consisting of 6 items, quantifies respondents' general satisfaction with available support. Items are scored on a 6 point scale, from 1 = very dissatisfied to 6 = very satisfied. In our sample, Cronbach's alpha was 0.86, indicating high internal consistency.

Statistical analysis. Descriptive statistics were used to characterize the study population and the distribution of crude and absolute discordance scores. Paired t tests were used to determine whether there were systematic differences between patient and physician crude ratings. Pearson correlation coefficients were calculated to assess the degree of associations among putative determinants. Separate generalized estimating equations (GEE) models³⁸ with forward selection of statistically significant independent variables were estimated to identify correlates of each outcome variable representing discordance on physical functioning, well being, and satisfaction with visit. The GEE approach provides a method of analyzing correlated data sets and accounts for interdependence of outcomes among subjects who share a common characteristic such as being treated by the same physician. We assumed the exchangeable covariance structure of residuals³⁹. Criterion for inclusion was set at $p < 0.15$ to adjust the estimates in the full model for marginally nonsignificant variables⁴⁰, and therefore reduce the risk of residual confounding⁴¹. However, for the purpose of formal hypothesis testing, we used the 0.01 significance level to account for both multiple testing in 3 separate models and *a posteriori* selection of independent variables^{42,43}. For the same reason, 99% rather than 95% confidence intervals were reported for all the effects estimated in GEE analyses. The following putative determinants were examined for possible entry into the 3 models: patient age, education, and household income; psychological distress; satisfaction with social support; perceived stress; sexual abuse; duration under a rheumatologist's care; disability; and co-morbidity. The study was planned to include 160 to 200 patients, which ensures adequate statistical power at 80% or more to detect the adjusted effect of a determinant that accounts for at least 8% of the total variance in discordance scores, at the corrected 0.01 level of significance⁴⁴. Total sample sizes for GEE analyses vary between 172 to 174. Analyses were performed with the SAS System for Windows 6.12.

RESULTS

Physician and patient demographics.

Physicians. Demographic characteristics of physicians (Table 1) indicated that the majority were attending staff (80%), Caucasian (90%), and male (70%). Physicians averaged roughly 19 years of professional experience and 13 years of experience treating FM. On average, physicians treated 13 patients with FM per week. The number of patients examined per physician ranged from 3 to 60.

Patients. As shown in Table 2, about half of participants constituted our tertiary care group. All the community based participants saw the rheumatologist as part of the study protocol. Among the tertiary group with available data ($n = 80$), 37.5% saw the rheumatologist as part of a followup — 16.3% for routine health maintenance, 5% for symptom

Table 1. Physician and patient sociodemographics.

Variable	Percentage or Mean ± SD (range)
Physician, n = 10	
Race, Caucasian, %	90
Sex, male, %	70
Age, yrs	43.82 ± 8.79 (30.50, 54.20)
Position at hospital, %	
Attending staff	80
Rheumatologist not on staff	10
Resident	10
Years since graduation from medical school	18.70 ± 9.50 (3, 30)
Years treating FM patients	12.60 ± 6.83 (1, 21)
Number of FM patients seen per week	12.75 ± 17.85 (3, 60)
Patient, n = 182	
Race, Caucasian, %	88.5
Education, yrs	12.94 ± 3.35 (3, 18)
Age, yrs	50.84 ± 10.32 (20.60, 78.70)
Marital status, %	
Married	56.6
Single	12.6
Separated or divorced	23.6
Widowed	7.1
Household income*	3.89 ± 1.89 (1, 6)

* For household income, there were 168 observations; median family income = 4, representing income bracket Canadian \$30,000–40,000.

Table 2. Clinical and psychosocial characteristics (n = 182).

Variable	Percentage or Mean ± SD (range)
Clinical	
Tertiary care, %	46.7
Duration under rheumatologist's care:	
≤ 12 mo, %	56.6
Disability (FIQ)*	57.70 ± 16.44 (0.50, 92.51)
Comorbidity	2.12 ± 1.39 (0, 5)
Psychosocial	
Perceived stress (PSS) ³	21.60 ± 7.10 (2, 36)
Psychological distress**	66.82 ± 8.60 (30, 81)
Satisfaction with social support	4.66 ± 1.14 (1, 6)
Extent of sexual abuse	1.79 ± 1.99 (0, 5)

* For the disability variable, there were 181 observations. ** Global Severity Index average T score presented; scores ≥ 63 indicative of clinically significant distress. The mean and standard deviation for GSI raw scores were 1.29 and 0.72, respectively. FIQ: Fibromyalgia Impact Questionnaire. PSS: Perceived Stress Scale.

exacerbation, 3.8% for the study participation, and 37.5% for other reasons such as consultations. Although a substantial proportion within the tertiary group (37.5%) visited the rheumatologist for the first time, making them similar to the community based group on this account, we explored the possibility that the 2 groups differed on specific determinants and outcome variables. No statistically significant differences were observed in terms of mean values for sociodemographic, clinical (e.g., duration of the office visit,

comorbidity), or psychosocial (e.g., psychological distress) variables between the 2 groups nor on 3 outcomes studied (data not shown). Data were thus collapsed across the 2 groups for all subsequent analyses.

As summarized in Table 1, the majority of patients were Caucasian (88.5%) and married (56.6%). Table 2 presents the distributions for clinical and psychosocial variables. A slight majority of patients (56.6%) had been under a rheumatologist's care for one year or less. The mean disability, as measured by the FIQ, was 57.70, indicative of moderate to severe impairment²⁹. The median number of comorbid conditions was 2. The mean score of perceived stress was 21.60, which was higher than the 13.7 reported on normative data for women between the ages of 45 and 54³⁰. Close to 3 out of 4 (72.5%) patients in our sample reported clinically significant psychological distress (GSI ≥ 63³¹). The majority reported being satisfied with the social support they received. The extent of sexual abuse reported by patients was consistent with the literature in that less than half (43.41%) reported no events, whereas as many as 25.82% reported 4 or more events.

Patient and physician VAS item ratings and crude score differences. Figure 1 compares the means of 10-item VAS ratings for patients and physicians. Total numbers for each VAS item varied between 178 to 180, with the expected prescription and testing items both having 81 observations because these 2 items were only relevant to the tertiary care subsample. Higher scores on an item indicate more of the attribute (i.e., more pain, more discussion). Most of the patients' and physicians' ratings were distributed across almost the full range of possible scores from 0 to 100, although physicians' ratings showed slightly less variability (data not shown). Paired t tests with (n - 1) degrees of freedom were used to test for systematic differences between patient and physician ratings. To reduce Type 1 error, alpha was set at 0.01. As shown in Figure 1, on average, patients reported significantly less pain, more physical limitations, better emotional well being, more discussion of the main problem and personal issues, and higher satisfaction with the visit when compared to their physicians. Applying a Bonferroni correction (0.05/10 = 0.005), discordance on pain and emotional health were no longer statistically significant.

Bivariate associations among determinants. Several determinants were significantly associated with each other in expected directions (data not shown). For instance, more comorbidity was associated with being older, higher levels of disability, perceived stress, psychological distress, and a greater extent of sexual abuse. Higher levels of disability were correlated with lower levels of education, household income, and less satisfaction with social support, as well as with higher levels of perceived stress, psychological distress, and more sexual abuse. Social support was negatively correlated with perceived stress and psychological

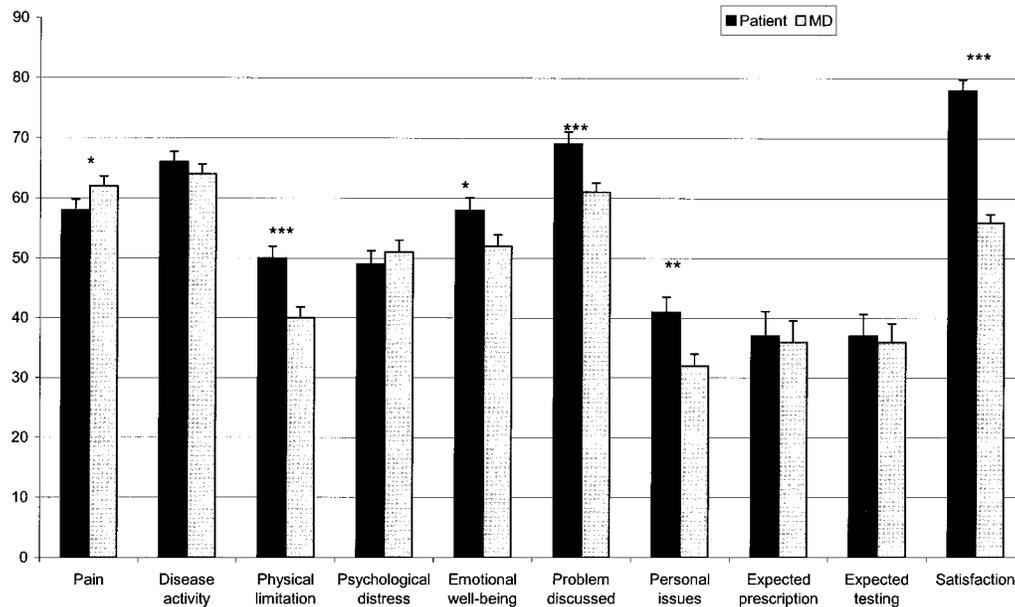


Figure 1. FM patients' and rheumatologists' ratings on PPDS items and paired t test results for each item. * $p < 0.01$, ** $p < 0.001$, *** $p < 0.0001$.

distress. Perceived stress, sexual abuse history, and psychological distress were significantly and positively associated with each other.

Determinants of discordance. Table 3 presents the results of GEE analyses for each of the putative correlates of the 3 outcomes. For each outcome, the left column presents the unadjusted regression coefficient with 99% confidence intervals (CI), obtained from the separate simple regression models. The right column shows similar results for only those variables that were selected into the final multivariate

able GEE model, using forward selection with $p < 0.15$ criterion for entry. For each selected variable, the level of statistical significance of its adjusted effect is also indicated. As explained above, to account for multiple testing and forward selection of the variables into the full model, only effects with $p < 0.01$ are considered statistically significant.

Correlates of discordance on physical functioning. In univariate analyses, only higher satisfaction with social support was identified as a marginally significant ($p < 0.10$)

Table 3. Univariate and multivariate generalized estimating equations (with forward stepwise selection procedure) identifying determinants of absolute discordance on physical functioning, well being, and satisfaction with visit.

Determinants	Univariate and Final Unstandardized Regression Coefficients [†] (99% CI)					
	Physical Functioning		Well Being		Satisfaction with Visit	
	Univariate	Final (n = 174)	Univariate	Final (n = 173)	Univariate	Final (n = 172)
Age	0.11 (-0.20, 0.41)		-0.21* (-0.38, -0.03)	-0.18 [†] (-0.39, 0.02)	-0.06 (-0.24, 0.12)	
Household income	-0.41 (-1.61, 0.79)		-0.26 (-1.17, 0.64)		-0.26 (-1.57, 1.05)	
Education	-0.28 (-0.91, 0.35)		-0.10 (-0.54, 0.33)		-0.28 (-1.18, 0.63)	
Comorbidity	0.49 (-2.04, 3.01)		1.47 (-1.65, 4.59)	1.37 (-1.05, 3.78)	0.01 (-1.58, 1.59)	
Rheumatology care ^{††}	1.65 (-1.45, 4.74)		0.10 (-2.08, 2.28)		-1.98 (-6.79, 2.82)	
Disability (FIQ)	0.07 (-0.15, 0.29)		0.04 (-0.07, 0.15)	-0.06 [†] (-0.14, 0.01)	0.11 (-0.09, 0.31)	
Perceived stress (PSS)	0.13 (-0.25, 0.51)		0.28 [†] (-0.13, 0.69)	0.28 (-0.18, 0.74)	0.16 (-0.27, 0.60)	
Psychological distress	1.99 (-1.53, 5.51)	3.34 [†] (-0.68, 7.35)	2.40** (-0.04, 4.83)	1.61 (-2.59, 5.80)	1.10 (-2.93, 5.13)	
Satisfaction with social support	1.30 [†] (-0.72, 3.32)	2.13 [†] (-0.22, 4.48)	0.87 (-0.61, 2.34)	1.98* (0.27, 3.69)	1.11 (-1.41, 3.64)	
Extent of sexual abuse	0.47 (-1.09, 2.02)		0.57 [†] (-0.27, 1.42)		0.69* (-0.02, 1.41)	0.69* (-0.02, 1.41)
Intercept [#]		6.59		15.49		24.25

[†] Interpreted as the difference in discordance scores from one category to the next when a binary variable is found to be significant or as the amount of change in discordance associated with one unit increase when a quantitative variable is found to be significant, accounting for clustering of patients within physician's practices. ^{††} Binary variable with 0 representing ≤ 12 months and 1 > 12 months under a rheumatologist's care; [#] Intercept for the multivariate model, [†] $p < 0.10$; * $p < 0.01$. FIQ: Fibromyalgia Impact Questionnaire, PSS: Perceived Stress Scale.

correlate of higher discordance on physical functioning. In contrast, multivariable analyses with forward selection revealed that both higher levels of social support satisfaction ($p < 0.02$) and higher psychological distress ($p < 0.03$) were marginally significant independent correlates of higher discordance, once effects of each on the other were adjusted (Table 3). Thus, multivariable analyses allowed us to reduce confounding bias due to the negative correlation between satisfaction with social support and psychological distress ($r = -0.37$, $p < 0.001$).

Correlates of discordance on well being. Simple univariate GEE analyses identified statistically significant or marginally significant unadjusted correlations between several independent variables and discordance on well being. Younger age ($p < 0.01$) and higher psychological distress ($p < 0.01$) were both significantly associated with higher discordance, whereas the effects of higher perceived stress and more sexual abuse were marginally significant ($0.05 < p < 0.10$). However, due to some redundancy between several of these independent variables, only the effect of social support ($p < 0.003$) remained statistically significant in multivariable analyses. Higher satisfaction with social support was identified as an independent statistically significant correlate of higher discordance on well being, whereas the effects of younger age ($p < 0.02$) and lower disability ($p < 0.03$) were marginally significant (Table 3). These correlates remained statistically significant after adjustment for comorbidity, perceived stress, and psychological distress.

Correlates of discordance on satisfaction with visit. As shown in Table 3, the only significant determinant of discordance on satisfaction with the office visit was the extent of sexual abuse ($p < 0.01$). A greater extent of sexual abuse was associated with an increase in discordance on patient satisfaction with the visit. Interestingly, no other correlates of discordance on satisfaction were identified in either univariate or multivariable analyses.

Additional analyses. Although no significant differences were observed between the tertiary and community based subsamples on any of the determinants or outcomes (discordance on physical functioning, well being, and satisfaction with visit), we explored the possibility that relationships among determinants and outcomes may have differed for the 2 groups. Therefore, we examined whether group membership (tertiary care vs community) modified the associations between those determinants found to be significant in the final models and outcomes. Separate GEE models were estimated for each outcome that included determinants selected in the final models and the interaction term between significant determinants and group membership (tertiary, community). No interaction effects were statistically significant at the 0.05 level (data not shown), indicating that the effect of specific determinants on specific outcomes was similar for tertiary and community groups and subsamples.

DISCUSSION

Crude discordance scores on each of the 10 items simultaneously and independently rated by patient-physician pairs indicate that there were significant differences in their perceptions. Compared to the physicians, patients perceived less pain but more physical limitation, better emotional well being, and more discussion of both the main problem and personal issues during the office visit. The finding pertaining to physical limitation corroborates Hidding's report¹³, whereby discordance between FM patient and observer ratings on functional disability was highly significant, with patients perceiving more disability. Unexpectedly, our participants were more satisfied with the office visit than the rheumatologists who examined them thought they were. Indeed, the satisfaction item evidenced the highest mean discordance score of the 10 items.

Given that many of the potential determinants were inter-correlated, it was essential to use multiple regression methods to identify independent correlates of discordance for each of the 3 outcomes. Higher disagreement on physical functioning was marginally related to higher satisfaction with social support and higher psychological distress. While the literature on discordance, in general, has found psychological distress to be an important contributor¹⁶⁻¹⁹, less is known about the relationship between social support and disagreement. As for disagreement on well being, 3 determinants were identified: age, disability, and satisfaction with social support. In this case, older age and higher disability (marginally significant) were associated with less disagreement, which is what one would expect; whereas higher satisfaction with social support was associated with more discordance on well being. For both these outcomes, the findings suggest that women with FM who reported having more satisfactory support networks disagreed more with their physicians. Perhaps this characteristic allowed them to rely less on the rheumatologist's opinion. The only other work, to our knowledge, that has examined this relationship directly was carried out using the same instruments in a different patient population (IBD). In that research, Sewitch, *et al*⁴⁵ found that Total Discordance on the PPDS, calculated as the sum of absolute discordance on 10 items, was significantly and positively associated with psychological distress and perceived stress; satisfaction with social support was not related to general discordance in that patient group. The nature of the 2 diseases differ, such that IBD has known pathological mechanisms that are identified by clinical investigators necessitating the reliance on a gastroenterologist's opinion. In contrast, patients with FM may rely heavily upon family and friends to validate their condition. In general, however, physicians are unaware of the influence social factors may have on patients' beliefs and behaviors.

As for satisfaction with the office visit, only one variable was identified as significantly associated with disagreement:

extent of sexual abuse. More sexual abuse was associated with more disagreement on patient satisfaction. This finding is intriguing because it is unlikely that sexual abuse was discussed during the clinic visit, as most physicians do not inquire about it and few patients report it spontaneously. Perhaps patients who have been abused display verbal and nonverbal behaviors that hamper communications such that the physician concludes the patient is dissatisfied with their clinic encounter. In our view, victims of abuse tend to have ambivalent relationships with those in a position to provide care (e.g., health professionals) given their past experiences of being hurt by “caregivers” (e.g., parent) or significant others (e.g., abusive partner). Frequently they tend to lack trust and are hostile, especially when their needs remain unmet.

Also unanticipated was the direction of discordance; patients were on average much more satisfied with the visit than the examining rheumatologist thought they were. There are several possible explanations for this finding. First, the magnitude of the difference may be related to the fact that this was the only item in which the physician rated according to her or his belief of what the patient felt, rather than what she or he personally experienced. It is unlikely that patient reports were influenced by social desirability (i.e., providing positive answers to appear in a favorable light), because patients were informed that the physician would not have access to their responses and we took precautionary measures to ensure that this was respected. To explore this further, we examined the correlation between the patients’ mean total on a social desirability scale⁴⁶ and the patients’ satisfaction with the visit, and it was weak and not statistically significant ($r = 0.04$, $p = 0.58$).

The direction of the difference may reflect physicians’ own feelings when working with these patients. Perhaps they find it difficult to imagine a patient being satisfied when they have nothing concrete to offer⁴⁷. Yet patients wish for both care and cure⁴⁸ and they will “settle for” the former when the latter is not forthcoming. Walker, *et al*²⁰ studied factors that frustrate physicians, as have Jackson, *et al*²¹ in their investigation of “difficult medical encounters.” These researchers noted that patients who present with multiple symptoms are viewed as an unpleasant challenge for physicians. In our group, the median number of comorbid conditions was 2, and 25% of the patients reported 3 or more conditions. Because we did not assess the rheumatologists’ views regarding the patient encounter from her or his own perspective, this explanation remains speculative.

While these results are novel, it is important to bear in mind specific limitations of the study. Rheumatologists who view FM negatively may have declined to participate in the study or chosen not to include patients with FM in their practices. Although patients were not selected at random, they appeared to be “typical” FM patients⁴⁹, in that they perceived high levels of stress, reported numerous comorbid conditions, and had a positive history of sexual abuse, as

well as significant levels of psychological distress. To ensure that there were not important differences between the subjects recruited from tertiary care and the community, we explored the possibility that determinants, outcomes, or relationships among them systematically differed between the 2 subsamples. Our negative findings indicate that the 2 groups are similar with respect to all aspects relevant for our study: (1) distribution of potential determinants of discordance and the 3 outcomes, and (2) relationships between determinants and outcomes, reducing the risk of selection bias affecting our results. Another point that could be raised is that the “study visit” may appear artificial for the participants recruited from the community. This new encounter should not, however, bias the women’s or physicians’ ratings for the items pertaining to the outcomes, physical functioning, or well being. Moreover, the encounter may be considered representative of physician-patient visits for FM patients, who tend to “doctor shop,” seeking validation of their illness. It is noteworthy that there was no significant difference between the 2 subsamples on the outcome satisfaction with the visit, a variable that potentially could capture their “disappointment” in not being offered treatment. Perhaps this reflects the unfortunate fact that in tertiary care patients with FM are often not offered treatment, as rheumatologists may think they have nothing effective to offer.

In summary, we describe health perceptions and satisfaction with the office visit, demonstrating substantial differences between the women with FM and the rheumatologists examining them. The sample size was relatively large and participants were recruited from both tertiary care and the community. The similarity of the 2 groups shows that (1) our results are generalizable for the entire population of patients with FM, regardless of whether or not they are under the current rheumatologist’s care; and (2) our results are robust with respect to the sampling fractions of the 2 corresponding subpopulations. While the results were based on cross-sectional data, the instruments used to assess psychosocial and clinical factors relied on a time frame that preceded the medical visit. The results suggest that physicians should ascertain whether their patients are psychologically distressed and if their own views contradict those of patients’ significant others in order to avoid disagreements on physical functioning and well being. There is clearly a gap between what patients and physicians experience during the clinic visit. Nonetheless, patients were more satisfied with the clinic visit than the examining rheumatologist thought they were. Future reports concerning this cohort will examine whether discordance has an effect on patient adherence to medical recommendations using a prospective design.

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REFERENCES

1. Goldenberg DL. Fibromyalgia syndrome a decade later: what have we learned? *Arch Intern Med* 1999;159:777-85.
2. Marder WD, Meenan R, Felson DT, et al. The present and future adequacy of rheumatology manpower: a study of health care needs and physician supply. *Arthritis Rheum* 1991;34:1209-17.
3. White KP, Harth M, Speechley M, Ostbye T. Testing an instrument to screen for fibromyalgia syndrome in general population studies: The London Fibromyalgia Epidemiology Study Screening Questionnaire. *J Rheumatol* 1999;26:880-4.
4. Wolfe F, Hawley DJ. Evidence of disordered symptom appraisal in fibromyalgia: increased rates of reported comorbidity and comorbidity severity. *Clin Exp Rheumatol* 1999;17:297-303.
5. Dobkin PL, De Civita M, Fitzcharles M-A, Kang H, Dayan N. Determinants of high-end health services utilization in fibromyalgia [abstract]. *J Psychosom Res* 2002;52:318.
6. Pioro-Boisset M, Esdaile J, Fitzcharles M-A. Alternative medicine use in fibromyalgia syndrome. *Arthritis Care Res* 1996;9:13-7.
7. Nicassio PM, Schuman C, Kim J, Cordova A, Weisman MH. Psychosocial factors associated with complementary use in fibromyalgia. *J Rheumatol* 1997;24:2008-13.
8. Schultes H, Pirk O, Berger K, Schramm B, Nuernberg P. Cost of illness in fibromyalgia. Results of a feasibility study. Presented at the American College of Rheumatology Conference Philadelphia 2000.
9. Da Costa D, Fitzcharles M-A. Predictors of improved health status in fibromyalgia: A two-year prospective study [abstract]. *Ann Behav Med* 1999;21:S041.
10. Wolfe F, Anderson JP, Harkness D, et al. Health status and disease severity in fibromyalgia: results of a six-center longitudinal study. *Arthritis Rheum* 1997;40:1571-9.
11. Solomon DH, Liang MH. Fibromyalgia: Scourge of humankind or bane of a rheumatologist's existence? *Arthritis Rheum* 1997;40:1553-5.
12. Thompson TL. Interpersonal communication and health care. In: Knapp ML, Miller GR, editors. *Handbook of interpersonal communication*. Thousand Oaks, CA: Sage Publications; 1994:696.
13. Kaplan SH, Greenfield S, Ware JE. Assessing the effects of physician-patient interactions on the outcomes of chronic disease. *Med Care* 1989;27:S110-S27.
14. Hidding A, van Santen M, De Klerk E, et al. Comparison between self-report measures and clinical observations of functional disability in ankylosing spondylitis, rheumatoid arthritis and fibromyalgia. *J Rheumatol* 1994;21:818-23.
15. Jacobs JW, Rasker JJ, van der Heide A, et al. Lack of correlation between the mean tender point score and self-reported pain in fibromyalgia. *Arthritis Care Res* 1996;9:105-11.
16. Ercolani M, Trombini G, Chhattar R, et al. Fibromyalgic syndrome: depression and abnormal illness behavior. Multicenter investigation. *Psychother Psychosom* 1994;61:178-86.
17. Goldman L, Freidin R, Cook F, Eigner J, Grich P. A multivariate approach to the prediction of no-show behavior in a primary care center. *Arch Intern Med* 1982;142:563-7.
18. Stewart MA, McWhitney IR, Buck CW. The doctor/patient relationship and its effect upon outcome. *J R Coll Gen Pract* 1979;29:77-82.
19. Bass MJ, Buck CW, Turner L, Dickie G, Pratt G, Robinson HC. The physician's actions and the outcome of illness in family practice. *J Fam Pract* 1986;23:43-7.
20. Freidin RB, Goldman L, Cecil RR. Patient-physician concordance in problem identification in the primary care setting. *Ann Intern Med* 1980;93:490-3.
21. Walker EA, Keegan D, Gardner G, Sullivan M. Predictors of physician frustration in the care of patients with rheumatological complaints. *Gen Hosp Psychiatry* 1997;19:315-23.
22. Jackson JL, Kroenke K. Difficult patient encounters in the ambulatory clinic: Clinical predictors and outcomes. *Arch Intern Med* 1999;159:1069-75.
23. Carr AJ, Donovan JL. Why doctors and patients disagree. *Br J Rheumatol* 1998;37:1-6.
24. Hadler NM. Fibromyalgia: Could it be in your mind? [Cited February 7, 2003]; available from www.rheuma21st.com/archives/cutting_edge_fibromyalgia.html
25. Visser GJ, Peters L, Rasker JJ. Rheumatologists and their patients who seek alternative care: an agreement to disagree. *Br J Rheumatol* 1992;31:485-90.
26. Ford CV. Somatization and fashionable diagnoses: illness as a way of life. *Scand J Work Environ Health* 1997;23:7-16.
27. Sewitch MJ, Abrahamowicz M, Dobkin PL, et al. Effect of patient-physician discordance on patient nonadherence in inflammatory bowel disease. *J Psychosom Res* 2002;52:373-4.
28. Sewitch MJ, Dobkin PL, Abrahamowicz M. Patient non-adherence to medication in inflammatory bowel disease. *Am J Gastroenterol* 2003; (in press).
29. Sewitch MJ, Abrahamowicz M, Dobkin PL, Tamblyn R. Measuring differences between patients' and physicians' perceptions: The Patient-Physician Discordance Scale with application in inflammatory bowel disease. *J Behav Med* 2003; (in press).
30. Burckhardt CS, Clark SR, Bennett RM. The Fibromyalgia Impact Questionnaire: Development and validation. *J Rheumatol* 1991;18:728-33.
31. Cohen SE, Williamson GM. Perceived stress in a probability sample of the United States. In: Spacapan S, Oskamp S, editors. *The social psychology of health*. Newbury Park, CA: Sage Publications; 1988:31.
32. Derogatis LR. SCL-90-R. Administration, scoring and procedures manual. 3rd ed. Minneapolis: National Computer Systems; 1994.
33. Leserman J, Drossman DA, Li ZM, Toomey TC, Nachman GS, Glogan L. Sexual and physical abuse history in gastroenterology practice: how types of abuse impact health status. *Psychosom Med* 1996;58:4-15.
34. Bagley C, McDonald M. Adult mental health sequels of child sexual abuse, physical abuse and neglect in maternally separated children. *Can J Mental Health* 1984;3:15-26.
35. Drossman DA, Leserman J, Nachman GS, et al. Sexual and physical abuse in women with functional or organic gastrointestinal disorders. *Ann Intern Med* 1990;113:828-33.
36. Toomey TC, Seville JL, Mann JD, Abashian SW, Grant JR. Relationship of sexual and physical abuse to pain description, coping, psychological distress, and health-care utilization in a chronic pain sample. *Clin J Pain* 1995;11:307-15.
37. Alexander RW, Bradley LA, Alarcón GS, et al. Sexual and physical abuse in women with fibromyalgia: Association with outpatient health care utilization and pain medication usage. *Arthritis Care Res* 1998;11:102-15.
38. Sarason IG, Sarason BR, Shearin EN, Pierce GR. A brief measure of social support: practical and theoretical implications. *J Soc Pers Relationships* 1987;4:497-510.
39. Liang KY, Zeger SL. Longitudinal data analysis using generalized linear models. *Biometrika* 1986;73:13-22.
40. Jenrich R, Schluchter M. Unbalanced repeated-measures models with structured covariance matrices. *Biometrics* 1986;42:805-20.
41. Bendel RB, Afifi AA. Comparison of stopping rules in forward regression. *J Am Stat Assoc* 1977;72:46-53.
42. Brenner H, Blettner M. Controlling for continuous confounders in epidemiologic research. *Epidemiology* 1997;8:429-34.

43. Miller A. Subset selection in regression. New York: Chapman and Hall; 1984.
44. Altman DG, Andersen PK. Bootstrap investigation of the stability of a Cox regression model. *Stat Med* 1989;8:771-83.
45. Cohen J. *Statistical power analysis for the behavioral sciences*. 2nd ed. Hillsdale, NJ: Erlbaum Associates; 1988.
46. Sewitch MJ, Abrahamowicz M, Bitton A, et al. Psychological correlates of physician-patient discordance on health perceptions in inflammatory bowel disease. *Am J Gastroenterol* 2002;97:2174-83.
47. Hays RD, Hayashi T, Stewart AL. A five-item measure of socially desirable response set. *Educ Psychol Meas* 1989;49:629-36.
48. Ong LML, De Hales CJM, Hoos AM, Lammes FB. Doctor-patient communication: A review of the literature. *Soc Sci Med* 1995;40:903-18.
49. Winfield JB. Does pain in fibromyalgia reflect somatization? *Arthritis Rheum* 2001;44:751-3.
50. Hazlett RL, Haynes SN. Fibromyalgia: a time-series analysis of the stressor-physical symptom association. *J Behav Med* 1992; 15:541-58.