Does Physician Gender Affect Satisfaction of Men and Women Visiting the Emergency Department?

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OBJECTIVE: **To assess the association of physician gender with patient ratings of physician care.**

DESIGN: **Interviewer-administered survey and follow-up interviews 1 week after emergency department (ED) visit.**

SETTING: **Public hospital ED.**

PATIENTS/PARTICIPANTS: **English- and Spanish-speaking adults presenting for care of nonemergent problems; of 852 patients interviewed in the ED who were eligible for follow-up, 727 (85%) completed a second interview.**

MEASUREMENTS AND MAIN RESULTS: **We conducted separate ordered logistic regressions for women and men to determine the unique association of physician gender with patient ratings of 5 interpersonal aspects of care, their trust of the physician, and their overall ratings of the physician, controlling for patient age, health status, language and interpreter status, literacy level, and expected satisfaction. Female patients trusted female physicians more (P = .003) than male physicians and rated female physicians more positively on the amount of time spent (P = .01), on concern shown (P = .04), and overall (P = .03). Differences in ratings by female patients of male and female physicians in terms of friendliness (P = .13), respect shown (P = .74), and the extent to which the physician made them feel comfortable (P = .10) did not differ significantly. Male patients rated male and female physicians similarly on all dimensions of care (overall, P = .74; friendliness, P = .75; time spent, P = .30; concern shown, P = .62; making them feel comfortable, P = .75; respect shown, P = .13; trust, P = .92).**

CONCLUSIONS: **Having a female physician was positively associated with women's satisfaction, but physician gender was not associated with men's satisfaction. Further studies are needed to identify reasons for physician gender differences in interpersonal care delivered to women.**

KEY WORDS: **patient satisfaction; gender; physician-patient relations; delivery of care; health care quality.**
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Patient satisfaction is an important indicator of quality of care.[1] In addition, satisfied patients tend to be more adherent to medical recommendations[2] and to be less likely to physician shop or disenroll from health plans.[3,4] A meta-analysis indicated that patient gender was not significantly associated with satisfaction with medical care.[5] However, there has been little research on physician gender, and even less on gender concordance between physician and patient, and how these affect patient satisfaction.[6–9]

Bertakis et al. found that female physicians spent more time on preventive services and discussing family and social functioning than their male counterparts; patients were significantly more satisfied with female physicians, although the difference was small.[10] A multivariate analysis of physician-patient communication styles found that female dyads display more participatory decision-making styles than any other gender combinations.[11] Cooper-Patrick et al. found that although patients of female physicians had more participatory visits than patients of male physicians, gender concordance between physicians and patients overall was not significantly related to participatory decision-making style; however, gender concordance was significantly and positively associated with patient satisfaction.[12] Hall et al. found that, compared to female physician-male patient dyads, female dyads are more supportive and egalitarian in their communication styles and facilitate patient disclosure.[6] However, most studies of gender concordance and patient satisfaction or physician-patient communication styles have been limited by selection bias, as they have been conducted in continuity settings where patients can select or request a physician of a particular gender.

The purpose of this study was to explore the effect of physician gender on patient satisfaction with physician care in a setting where this kind of selection bias is minimized: in an emergency department of a public hospital. In particular, we asked 3 main research questions: (1) Is physician gender related to patient satisfaction, controlling for other factors? (2) Which patient satisfaction indicators (satisfaction with interpersonal aspects of care, overall rating of the physician, and trust of the physician) vary by physician gender? and (3) Does the association of physician gender with patient satisfaction differ for male and female patients?

METHODS

Date Source

The study was conducted at Harbor-UCLA Medical Center, a 500-bed public hospital in Torrance, Calif. Between November 1993 and April 1994, patients were

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enrolled as part of a larger project to assess the prevalence and importance of literacy and language barriers on the delivery of health care. The study design and contact forms were approved by the Harbor-UCLA Human Investigations Committee.

A full description of the recruitment methods has been reported previously.[13] Briefly, native English- and Spanish-speaking patients presenting to the emergency department between 7 AM and 11 PM with nonurgent complaints were eligible. Exclusion criteria included primary language other than English or Spanish, less than 18 years of age, unintelligible speech, overt psychiatric illness, uncooperative, too ill to participate, or presentation for a follow-up visit. Furthermore, individual patients could only be enrolled once over the 6-month period of data collection.

Patients were interviewed after being triaged, while waiting to be seen by the physician. Bilingual research assistants called patients sequentially from the logbook and asked them which language (English or Spanish) they felt most comfortable speaking. Once informed consent was obtained, a face-to-face interview was conducted to determine demographics, health insurance status, usual source of care, usual health status, the number of outpatient visits they had in the previous 3 months, and expected satisfaction for the emergency department visit. After the intake interview, patients took the Test of Functional Health Literacy in Adults (TOFHLA) or TOFHLA-S (Spanish version) to determine literacy level in their native language.[14]

After the intake interview and literacy assessment, patients returned to the waiting room until a health care provider was available to see them. Patients in the emergency department were assigned by the senior physician to the first available health care providers without any systematic attempt to match on language or gender. Harbor-UCLA is a teaching hospital, so the physicians seeing patients were residents who were supervised by attending faculty. Residents rotate through the emergency department on a monthly basis; approximately 40 residents rotated through the emergency department during the study period. Approximately one third of the residents were women. Female and male physicians were equally likely to speak Spanish. In addition to physicians, a female nurse practitioner was available in a separate area to care for patients with minor medical complaints and injuries.

One week after their visit, patients were contacted for a follow-up interview. If telephone contacts were not successful, research assistants attempted a home visit (less than 7% of the follow-up interviews were completed through home visits). During this interview, patients were asked to identify the gender of the physician who examined them and to report their satisfaction with care given by that physician during the visit to the emergency department. Spanish-speaking patients were also asked how well they spoke English, how well the examining physician spoke Spanish, and whether an interpreter was used during the visit; if an interpreter was not used, the patient was asked whether they thought one should have been used.

Variable Definitions

The satisfaction measure focused on interpersonal aspects of care, how much the patient trusted the physician, and the patient's overall rating of the physician. The development, reliability, and validity of this instrument in Spanish and English have been described previously.[15] This analysis included items assessing 5 characteristics of the interpersonal aspects of care: friendliness, spending enough time, respectfulness, concern shown, and the extent to which the physician made the patient feel comfortable. In addition, patients were asked to give an overall rating of the physician they saw during the visit and to report how much they trusted the physician.

Patient trust in the physician is considered a key component of the patient-physician relationship and has been shown to predict general patient satisfaction.[16] We used the trust question because it encompassed an important aspect of the patient-physician relationship that we hypothesized might be related to patient gender and physician gender.

For the 5 items assessing interpersonal aspects of care and the overall rating, patients were asked to respond using an excellent, very good, good, fair, or poor response scale. This scale has been shown to produce greater response variability and better predict whether patients intended to return to the same physician in the future, recommend the physician to a friend, and comply with the medical regimen than a "satisfied versus dissatisfied" response scale.[17] The one question about how much the patient trusted the examining physician ("Overall, how much would you say that you trusted the physician?") was asked using response options of completely, mostly, somewhat, a little, or not at all.

We analyzed the relation between patient satisfaction indicators (satisfaction with interpersonal aspects of care, overall rating of the physician, and trust of the physician) and the following independent variables: physician gender and patient age, self-reported usual health status, language-interpreter status (see below), literacy level, and expected satisfaction. Prior use of physician services was included in preliminary analyses, but it was dropped from the final model because it did not have a significant unique association with satisfaction. Physician gender was determined based on patient report in the follow-up interview.

Because earlier analyses of the data set showed that language concordance and interpreter use significantly affected satisfaction among Spanish-speakers in our sample,[18] we controlled for this by creating 4 distinct groups of patients: native English-speakers, Spanish-speakers with a language concordant provider, Spanish-speakers who

had an interpreter present during the consult, and Spanish-speakers who did not have an interpreter but said one should have been called. These groupings define the language interpreter status variable noted above. In the analysis, we included 3 dummy variables to represent these distinct groups, with "native English-speakers" as the reference group.

Literacy level was assessed using the TOFHLA or TOFHLA-S,[14] and was categorized as inadequate, marginal, or adequate. Literacy is thought to be a more accurate indicator of an individual's actual education because it measures educational attainment rather than the number of years spent in a classroom.[19] Health status was assessed using a self-rating of health on a 5-point response scale (excellent, very good, good, fair, poor). This is the most frequently used single item and is the health measure used for case-mix adjustment in the Consumer Assessment of Health Plans Study.[20] For expected satisfaction, patients were asked before seeing the physician how satisfied they thought they would be with the medical care they received on the day of the visit using a 4-point scale (completely satisfied, mostly satisfied, somewhat satisfied, not at all satisfied). This measure in part reflects the patients' past experiences or the experiences of their friends and families.

Statistical Methods

STATA 6.0 (STATA Corp., College Station, Tex) and SAS 6.12 (SAS Institute, Cary, NC) were used to perform the statistical analyses. Because of the ordered nature of our satisfaction measures, we used an ordered logit model (proportional odds model).[21] To adjust for possible confounding variables, we included age, self-reported usual health status, language-interpreter status, and literacy level in all models, regardless of statistical significance. These variables were selected based on results of previous studies of patient satisfaction.[5,18,22,23] In addition, expected satisfaction was included in all models because it was significant in several of the models. A probability level of .05 was considered statistically significant for all analyses.

Preliminary analyses of the association of physician gender with patient satisfaction suggested that the trends varied significantly between men and women. Thus, we conducted separate multivariate analyses (using ordered logit) for women and men, for each of the 7 satisfaction indicators (friendliness, time spent, respectfulness, concern, making comfortable, trust and overall), while controlling for patient age, health status, language and interpreter status, literacy and expected satisfaction. Given the relatively small numbers of poor ratings on the satisfaction items (1% to 5%), we collapsed the fair and poor categories for the analyses. Similarly, we collapsed the a little and not at all categories for the trust item, since less than 5% of respondents gave a not at all rating. We collapsed the excellent, very good, and good categories for the usual health status item, because only 10% of patients reported very good or excellent health status. Finally, we also collapsed the not at all satisfied and somewhat satisfied categories for the expected satisfaction item, because less than 3% of patients reported that they expected to be not at all satisfied with the care given.

To facilitate interpretation of the physician gender coefficients from the ordered logit models, we present standardized predictions of the association of physician gender with each outcome. We used the regression parameters and each individual's actual values for all covariates, other than physician gender, to generate predicted probabilities of all possible satisfaction ratings for each individual. This was done twice, first assuming a physician of the same gender (female physician for female patients, male physician for male patients) and then assuming a physician of the opposite gender. We then determined the average probabilities for 2 sets of predictions: (1) for women (using data from all female patients), and (2) for men (using data from all male patients). We report these averages separately (for women and men) as the standardized satisfaction ratings for having a physician of the same gender and for having a physician of the opposite gender.

The proportional odds assumptions were suspect in some of the models—i.e., a score test rejected the null hypothesis of proportional odds for 6 of 14 models at the $P = .05$ level and 2 models at the $P = .01$ level. As an alternative to the ordered logit model, we fit a continuation-ratio logits model which uses the ordered nature of the outcomes but does not assume proportional odds ratios across different levels of the outcomes.[24]

RESULTS

The outcomes of recruitment have been reported previously.[13] Of 852 patients who were eligible for follow-up, 260 English-speaking and 467 Spanish-speaking patients (77% and 91%, respectively) were contacted and agreed to be interviewed. Of these, 108 reported seeing an examiner who was not a physician (a nurse practitioner or physician assistant) or they did not know if the examiner was a physician, and were excluded from the analysis. Of the remaining 619 patients, 20 patients had missing data on satisfaction items or other important variables (e.g., age, interpreter status) and were therefore excluded, leaving a final sample of 599 patients for the analysis. Of these, 206 were interviewed in English, and 393 were interviewed in Spanish. Table 1 provides patient characteristics for men and women.

Women's Satisfaction

Table 2 summarizes the results of the separate multivariate analyses for each of the 7 satisfaction indicators for women. Table 3 gives the adjusted probabilities (from the ordered logit model) that women gave their physicians an

Table 1. Patient Characteristics by Gender*

Characteristic	Women (*n* = 387)	Men (*n* = 212)
Median age, y	38	34
Race or ethnicity		
African American	56 (15)	39 (18)
Latino	303 (78)	141 (67)
White	25 (6)	26 (12)
Other	13 (1)	6 (3)
Language-interpreter status		
English-speaking	113 (29)	93 (44)
Spanish-speaking, language concordance	138 (36)	68 (32)
Spanish-speaking, interpreter used	81 (21)	30 (14)
Spanish-speaking, no interpreter	55 (14)	21 (10)
Usual health status		
Good–excellent	98 (25)	105 (50)
Fair	163 (42)	66 (31)
Poor	126 (33)	41 (19)
Literacy level†		
Adequate	166 (43)	109 (51)
Marginal	75 (19)	32 (15)
Inadequate	146 (38)	71 (34)
Expected satisfaction with visit		
Completely	135 (35)	74 (35)
Mostly	154 (40)	83 (39)
Somewhat	89 (23)	49 (23)
Not at all	8 (2)	6 (3)
Physician gender		
Had female physician	152 (39)	65 (31)
Had male physician	235 (61)	147 (69)

* *Values are reported as number with percentage of group in parentheses.*

† *As measured by the Test of Functional Health Literacy in Adults (TOFHLA) or TOFHLA-S (Spanish version).*

excellent, very good, good, or fair/poor rating on each of these satisfaction indicators (except for the trust question, where possible responses were completely, mostly, somewhat, or a little/not at all), based on whether they had a male or female physician.

Women reported being significantly more satisfied with female physicians than with male physicians on 4 of the 7 indicators: in the amount of time spent with them ($P = .01$), in showing concern for them ($P = .04$), their overall rating of how good a job the physician did taking care of them ($P = .03$), and in how much they trusted the physician ($P = .003$). Even when we adjusted for multiple comparisons using Hochberg's "sharper" Bonferroni procedure,[25] we still found that women trusted female physicians significantly more than they did male physicians. In adjusted probabilities, 30% of women with female physicians rated their physician as excellent on the amount of time spent versus 21% of women with male physicians. Likewise, 35% of women with female physicians rated their physician as excellent in showing concern for them versus 28% of women with male physicians. Thirty-two percent of women with female physicians rated them as excellent overall versus 24% of women with male physicians, and 52% of women with female physicians said that they trusted their physicians *completely* versus 39% of women with male physicians.

In the other 3 areas (friendliness of physician, respect shown by the physician and whether the physician succeeded in making the patient feel comfortable), women tended to be more satisfied with female physicians than with male physicians, but the differences were not statistically significant ($P = .13$, $P = .74$, and $P = .10$, respectively).

The covariate most consistently associated with women's satisfaction was language-interpreter status. Spanish-speaking women who did not have an interpreter (and needed one) were consistently less satisfied than native English-speakers on all 7 measures of patient satisfaction. Other variables that were significantly associated with women's satisfaction with physician care included age, literacy level, and expected satisfaction. Older women were more trusting of their physicians than younger women. Women with inadequate functional health literacy were less satisfied than those with adequate functional health literacy with the friendliness and respectfulness of their physicians and gave them consistently lower overall ratings. Finally, women who thought that they would be completely satisfied with their visit to the emergency department were significantly more satisfied with the amount of time spent with their physicians, the respectfulness of their physicians, the extent to which the physician showed concern and made them feel comfortable, and the overall performance of the physician than those who expected to be somewhat or not at all satisfied with their visit.

Our results were not sensitive to the proportional odds assumptions of the ordered logistic model. Using the continuation-ratio logits model, which does not require proportional odds, the same outcomes were significantly associated with physician gender, and the strength of each association was similar, indicated by nearly identical predicted probabilities for the 2 sets of models; therefore, we present the more parsimonious ordered logistic regression models.

Men's Satisfaction

Results for men are shown in Tables 4 and 5. In contrast to women, physician gender was not associated with male patients' satisfaction on any of the 7 satisfaction indicators. On most of these measures, the probabilities that men rated their physicians as excellent were within 2 percentage points of one another (comparing male versus female physicians).

Spanish-speaking men who did not have an interpreter (and sometimes even when they did) were significantly less satisfied than native English-speaking men with the friendliness of the physician, the respect and concern shown, the extent to which the physician made them feel comfortable, and the physician's overall

Table 2. β Coefficients (±SE) for Associations Between Patient Characteristics and Satisfaction Indicators Based on Ordered Logit Regression Model for Female Patients

Characteristic	Friendly*	Time*	Respect*	Concern*	Comfort*	Overall*	Trust†
Had female physician							
No	—	—	—	—	—	—	—
Yes	.30 (.20)	.49 (.19)§	.06 (.20)	.39 (.19)‖	.32 (.19)	.43 (.19)‖	.60 (.20)§
Age, y							
18–30	—	—	—	—	—	—	—
31–45	.17 (.24)	<.01 (.24)	.03 (.25)	.23 (.23)	.09 (.24)	−.02 (.24)	.60 (.24)§
46-60	.12 (.28)	−.11 (.28)	−.03 (.28)	.38 (.28)	.04 (.28)	.06 (.28)	.77 (.28)§
>60	.24 (.35)	.32 (.35)	−.18 (.37)	.68 (.35)	.30 (.36)	.55 (36)	1.87 (.44)‡
Health status							
Good–excellent	—	—	—	—	—	—	—
Fair	−.10 (.24)	−.05 (.24)	−.21 (.24)	−.04 (.24)	−.27 (.24)	−.26 (.24)	.01 (.24)
Poor	.10 (.25)	.07 (.25)	−.38 (.25)	<-.01 (.25)	−.04 (.25)	−.09 (.25)	−.24 (.26)
Language-interpreter status							
English-speaking	—	—	—	—	—	—	—
Spanish, language concordance	−.10 (.25)	.07 (.25)	.24 (.25)	−.02 (.25)	−.31 (.25)	<.01 (.25)	.11 (.25)
Spanish, interpreter used	−.30 (.29)	.11 (.29)	.26 (.30)	−.32 (.29)	−.44 (.29)	−.12 (.29)	.39 (.31)
Spanish, no interpreter	−1.11 (.33)‡	−1.17 (.33)‡	−.76 (.33)‖	−1.51 (.32)‡	−1.76 (.33)‡	−1.01 (.33)§	−.90 (.32)§
Literacy level							
Adequate	—	—	—	—	—	—	—
Marginal	−.22 (.26)	<−.01 (.26)	.15 (.27)	−.21 (.26)	.09 (.26)	−.25 (.26)	.06 (.26)
Inadequate	−.79 (.24)‡	−.15 (.24)	−.82 (.25)‖	−.41 (.24)	−.24 (.24)	−.61 (.24)§	−.29 (.25)
Expected satisfaction							
Not at all/somewhat	—	—	—	—	—	—	—
Mostly	.36 (.24)	.22 (.24)	.25 (.25)	.14 (.24)	.34 (.24)	.34 (.24)	<.01 (.24)
Completely	.48 (.25)	.73 (.25)§	.50 (.25)‖	.69 (.25)§	.71 (.25)§	.64 (.25)§	.72 (.26)§

SE indicates standard error; (—), referent group.

** For these indicators, satisfaction was measured on a 5-point scale: excellent, very good, good, fair, and poor. For the analysis, fair and poor categories were collapsed, so that fair or poor = 1, good = 2, very good = 3, and excellent = 4). β represents the coefficient of the ordered logit model.*

† Trust was measured on a 5-point scale: completely, mostly, somewhat, a little, or not at all. For analysis, a little and not at all categories were collapsed, so that a little or not at all = 1, somewhat = 2, mostly = 3, completely = 4. β represents the coefficient of the ordered logit model.

‡ P ≤ .001.

§ P ≤ .01.

‖ P ≤ .05. P-values test significance relative to referent group.

performance. Also, Spanish-speaking men who had interpreters in the encounter were also significantly less satisfied than English-speaking men with the respectfulness, the concern shown, the extent to which the physician made them feel comfortable, and the physician's overall performance.

Men with fair or poor health status were significantly less satisfied with the time spent with the physician and the physician's overall performance than men with good to excellent health. Furthermore, men with fair health status were less satisfied than men with good to excellent health with the concern of their physicians and their attempts to make them feel comfortable. Men with fair health status trusted their physicians less than those with good to excellent health. As was the case with women, men over 45 years of age were significantly more trusting of their physicians than men under 45 years.

We also had data on diagnosis type, which indicated whether the patient had a new, specific diagnosis (e.g., urinary tract infection), diagnosis of a previous problem (e.g., asthma), a symptomatic diagnosis (e.g., back pain), or did not have a diagnosis established. Adding diagnosis type to the models for men and for women did not alter our findings.

DISCUSSION

Overall, we found different trends among male and female patients regarding their satisfaction with physician care. In particular, we found that having a female physician was associated with greater satisfaction among female patients, whereas physician gender was not associated with male patients' satisfaction. Patient gender alone did not predict satisfaction in multivariate analyses, except that women were slightly less trusting of their physician as compared to male patients. Thus, a key finding was a difference between male and female patients in what was associated with their satisfaction with physician care and, in particular, the role of physician gender.

For female patients, having a female physician was associated with greater satisfaction for 2 of the 5 interpersonal aspects of physician care measured (time spent and concern shown), trust of the physician, and the

Table 3. Predicted Probabilities (%) of Women's Satisfaction, Overall Rating, and Trust of the Physician by Physician Gender

	Satisfaction with Interpersonal Aspects of Physician Care										Overall Rating of Physician†			Trust of Physician*	
	Friendly		Time*		Respect		Concern†		Comfort						
Rating	M‡	F§	M	F	M	F	M	F	M	F	M	F	Rating	M	F
Excellent	35	41	21	30	38	39	28	35	27	33	24	32	Completely	39	52
Very good	26	26	19	22	22	22	20	21	23	24	21	23	Mostly	26	24
Good	31	27	40	35	34	35	35	31	37	33	37	32	Somewhat	18	14
Fair/poor	7	6	20	13	5	5	17	12	13	10	18	13	A little/not at all	17	10

* *Women's satisfaction with female physicians is significantly higher at* $P \leq .01$.
† *Women's satisfaction with female physicians is significantly higher at* $P \leq .05$.
‡ *Predicted probability for male physician.*
§ *Predicted probability for female physician.*

overall rating of the physician. The greater satisfaction of female patients with the time spent by female physicians is consistent with previous work that showed same gender dyads tend to have longer visits than opposite gender dyads (longest between female physicians and female patients and shortest between male physicians and female patients).[26] One study found that patient satisfaction with length of visit was increased by devoting some time to chatting about nonmedical topics and allowing enough time for sufficient exchange between physician and patient.[27] The results of the present study are intriguing because one would expect that all emergency department physicians, regardless of their gender, would be under similar time constraints.

Female patients also reported greater satisfaction with the concern shown, more trust, and higher overall ratings of female physicians. This is consistent with previous research on physician-patient communication which found that female-female dyads were notably different from other gender combinations in terms of patient disclosure and physician affect.[6] In particular, this research found that female patients were more successful in "telling their story" when with a female physician, often facilitated by the physician's positive statements, nodding, and back-channel responses. A study of initial prenatal visits found that female patients were significantly more satisfied with female obstetricians' emotional responsiveness and informational partnership than with male obstetricians'.[28] Our finding that women trusted female physicians more than male physicians is important, since recent research found that patients' trust in their physicians was a major correlate of patient adherence, satisfaction, and improved health status.[29]

The finding that physician gender was not associated with men's satisfaction in this study potentially contrasts with a previous study by Hall et al. that found male patients examined by younger female physicians were the least satisfied.[7] Our findings may reflect a difference in sample and study site (e.g., Hall's study examined older patients in routine medical visits), changing patient attitudes toward female physicians, or the fact that we were not able to examine interactions with physician age. Conversely, our findings are consistent with a recent study, which found that gender preferences are stronger among female patients than among male patients.[30]

As previously published, this study also found that Spanish-speakers without an interpreter or a language concordant physician tended to be the least satisfied with their care.[18] This result is not surprising given that these patients undoubtedly faced significant language barriers in trying to communicate with the physicians. Interestingly, Spanish-speaking men who had interpreters were significantly less satisfied than English-speaking men, but there was no difference between women who had interpreters and English-speaking women. This could reflect different cultural and social expectations of men and women. For example, it may be more acceptable for Spanish-speaking women to rely on others or go through an intermediary than it is for Spanish-speaking men. We had very limited information on the type of person who interpreted (family member, staff, professional interpreter). Further research of this issue is needed, since many hospitals and clinics routinely use interpreters to deliver health care.

Health status was associated with men's satisfaction, but not women's. In general, previous research has shown an association of better health with greater satisfaction.[22] This is especially true for mental health.[23] Expected satisfaction had a positive association with overall rating of the physicians for both women and men. For women, expected satisfaction was also significantly related to their satisfaction with the time spent, the respectfulness of the physician, the concern shown by the physician, the extent to which the physician made them feel comfortable, and their trust of the physician.

There are several limitations to our study. First, the only information that we have about the physician is gender and, when they examined a Spanish-speaking patient, their ability to speak Spanish (as rated by the patient). Thus, we could not control for other physician factors (experience, training, ethnicity, age) that may affect patient satisfaction.

Table 4. β Coefficients (±SE) for Associations Between Patient Characteristics and Satisfaction Indicators Based on Ordered Logit Regression Model for Male Patients

Characteristic	Friendly*	Time*	Respect*	Concern*	Comfort*	Overall*	Trust†
Had male physician							
No	—	—	—	—	—	—	—
Yes	.09 (.29)	.28 (.27)	−.44 (.29)	.14 (.28)	.09 (.28)	.09 (.28)	−.03 (.30)
Age, y							
18–30	—	—	—	—	—	—	—
31-45	−.52 (.32)	−.18 (.31)	−.54 (.32)	−.04 (.31)	−.59 (.31)	−.65 (.31)‖	.36 (.32)
46–60	−.43 (.40)	.48 (.38)	−.67 (.39)	.37 (.38)	−.15 (.38)	−.34 (.39)	.90 (.43)‖
61–84	−.43 (.50)	.43 (.53)	−.10 (.51)	.22 (.48)	−.06 (.51)	.10 (.52)	2.40 (.83)§
Health status							
Good-excellent	—	—	—	—	—	—	—
Fair	−.25 (.31)	−.96 (.30)‡	−.33 (.30)	−.68 (.29)‖	−.94 (.30)§	−.95 (.30)‡	−.46 (.32)
Poor	−.64 (.37)	−.80 (.36)‖	−.17 (.38)	−.56 (.37)	−.55 (.38)	−.95 (.37)§	−.83 (.39)‖
Language-interpreter status							
English-speaking	—	—	—	—	—	—	—
Spanish, language concordance	.33 (.32)	.42 (.30)	.30 (.31)	.04 (.30)	−.25 (.30)	.20 (.31)	−.05 (.33)
Spanish, interpreter used	−.67 (.42)	−.65 (.41)	−1.24 (.42)§	−1.21 (.41)§	−1.65 (.41)‡	−1.34 (.41)‡	−.64 (.43)
Spanish, no interpreter	−1.09 (.50)‖	−.60 (.49)	−1.01 (.50)‖	−1.22 (.51)‖	−2.05 (.53)‡	−1.49 (.51)§	−.87 (.48)
Literacy level							
Adequate	—	—	—	—	—	—	—
Marginal	.29 (.40)	.25 (.38)	−.09 (.40)	.18 (.39)	−.22 (.38)	.17 (.37)	.54 (.42)
Inadequate	−.21 (.33)	−.02 (.32)	−.26 (.32)	.05 (.32)	−.13 (.32)	.05 (.32)	−.04 (.33)
Expected satisfaction							
Not at all/somewhat	—	—	—	—	—	—	—
Mostly	.19 (.34)	−.24 (.33)	.24 (.34)	.08 (.33)	.46 (.33)	.54 (.34)	.41 (.34)
Completely	.35 (.35)	.13 (.35)	.61 (.36)	.60 (.35)	.55 (.35)	.86 (.36)‖	.67 (.37)

SE indicates standard error; (—), referent group.

** For these indicators, satisfaction was measured on a 5-point scale: excellent, very good, good, fair, and poor. For the analysis, fair and poor categories were collapsed, so that fair or poor = 1, good = 2, very good = 3, and excellent = 4). β represents the coefficient of the ordered logit model.*

† Trust was measured on a 5-point scale: completely, mostly, somewhat, a little, or not at all. For analysis, a little and not at all categories were collapsed, so that a little or not at all = 1, somewhat = 2, mostly = 3, completely = 4. β represents the coefficient of the ordered logit model.

‡ $P \leq .001$.

§ $P \leq .01$.

‖ $P \leq .05$. *P-values test significance relative to referent group.*

Second, we did not have any objective measures of patient-physician interaction in order to calibrate patient perspectives. For example, we did not measure the amount of time physicians spent with patients, so we do not know whether the female physicians actually spent more time with female patients. Nevertheless, female patients were more satisfied with time spent with female physicians than with male physicians, and this in itself is an important finding. Previous research found that among predictors of satisfaction with time spent, actual visit length demonstrated the strongest association with satisfaction with time spent.[27] However, another study found that although male obstetricians on average conducted longer visits and engaged in more dialogue with their patients than female obstetricians, women were more satisfied with female physicians.[28] This suggests that women may be more satisfied with female physicians, regardless of objective measures.

Third, we did not control for several other potential confounders: chief complaint of the patient, time spent waiting, final diagnosis, and whether symptoms eventually resolved. It may be that having a physician of the same gender matters more for certain kinds of health problems than others, and our analysis cannot give us this information. Having a physician of the same gender is unlikely to be related to a patient's time spent waiting, final diagnosis, or whether symptoms eventually resolved; therefore, we do not expect the lack of these data to bias our results.

We also do not know the accuracy of patients' perceptions of whether they were cared for by a physician or another provider. A female nurse practitioner was located in a separate area of the emergency department to care for patients with minor medical complaints and injuries; this should increase the accuracy of patients' classification. Still, if patients wrongly assumed the professional they saw was a nurse practitioner rather than a physician, we would have wrongly excluded these patients from the analysis (in our study, 25 patients said they were seen by a female nurse practitioner).

Although there was no protocol in place to direct female patients to female physicians, women were more likely than men to see a female physician (Table 1). This could have occurred by chance, or it is possible that some female patients may have specifically requested to see a

Table 5. Predicted Probabilities (%) of Men's Satisfaction, Overall Rating, and Trust of the Physician by Physician Gender*

	Satisfaction with Interpersonal Aspects of Physician Care										Overall Rating of Physician			Trust of Physician	
	Friendly		Time		Respect		Concern		Comfort						
Rating	F†	M‡	F	M	F	M	F	M	F	M	F	M	Rating	F	M
Excellent	46	48	29	35	49	40	34	36	34	36	36	38	Completely	56	56
Very good	22	21	17	17	22	23	18	18	21	22	18	18	Mostly	18	18
Good	26	25	30	28	25	31	32	31	32	31	29	28	Somewhat	15	15
Fair/poor	6	6	24	19	4	6	16	15	13	12	17	16	A little/ not at all	11	11

** Men's satisfaction with male and female physicians was not significantly different at* $P \leq .05$ *for any of the 7 satisfaction measures.*
† Predicted probability for female physician.
‡ Predicted probability for male physician.

female physician. If the latter occurred in our study, then women's greater satisfaction with female physician in part reflects a selection bias. However, this bias is probably much less than previous studies of the issue conducted in continuity settings.

It is also possible that the findings from our study are not generalizable to other settings. Our sample consisted largely of Spanish-speakers who sought care in an emergency department for nonurgent complaints. The emergency department setting is distinct from continuity settings; in general, it involves one patient-physician contact, whereas continuity settings involve various contacts over time. Furthermore, largely eliminating choice of physician gender as a factor may create an artificial setting and may not be generalizable to other settings where patients have chosen their physicians. The effects of physician gender may be different in the emergency department setting than in continuity settings.

Finally, multiple comparisons were made, of which only a few were statistically significant. Thus, some of the differences found might have occurred by chance alone. Nevertheless, even when we adjusted for multiple comparisons using Hochberg's "sharper" Bonferroni procedure,[25] we found that women trust female physicians significantly more than male physicians. In addition, women who had a female physician gave substantially higher ratings of satisfaction and trust for 6 of the 7 scales examined (Table 2), and this pattern would be unlikely to occur if women's satisfaction and trust were not actually related to physician gender.

Despite these limitations, our results suggest that having a female physician is associated with greater satisfaction with some aspects of physician care among female patients. The differences in predicted probabilities of an "excellent" rating were 7 to 13 percentage points higher among female patients cared for by female physicians versus male physicians. Comparing our results to previous work is problematic given that many satisfaction studies do not report magnitudes of the associations, only the significance levels and sometimes the direction of the correlation.[5] Nevertheless, the 7- to 13-percentage point differences reported here are of similar magnitude to the differences in "excellent" ratings for listening by the medical staff for English-speaking Latinos versus whites (6%) and for Spanish-speaking versus English-speaking Latinos (12%).[31] Thus, the importance of physician gender for women's satisfaction appears to be of similar magnitude to the importance of cultural and language factors.

The differences we found (7% to 13%) are also likely to be clinically significant. Marquis et al. found that a 1-point decrease on a 4 to 20 general satisfaction scale was associated with a 3.4-percentage point increase in the probability of provider change.[3] Similarly, Ware and Davies found that relatively small differences in patient satisfaction were significantly predictive of changing physicians and disenrollments from prepaid health plans.[4] These findings suggest that even small differences in satisfaction could have significant effects on patient behavior. In general, patients who are less satisfied with the interpersonal aspects of their medical care report lower levels of adherence to recommendations.[2] Thus, emergency department patients who are less satisfied with the relationship with their examining physician could have lower adherence to prescribed medications and follow-up appointments.

Other correlates of satisfaction with physician care, such as interpreter use, low literacy, health status, and expected satisfaction differ somewhat between men and women and should be explored further. Since the current study was conducted in an emergency department, assignment of patients to physicians was not subject to the same degree of selection bias present in earlier studies where patients had some choice of physician. However, as noted previously, our findings may therefore not be generalizable to other settings, particularly continuity settings. Another strength of this study is that our sample included a majority of nonwhite and Spanish-speaking patients. Therefore, the results can be generalized to a more diverse population than was the case with many previous studies of patient satisfaction.

Given the tendency towards women's greater satisfaction with female physicians, male clinicians should be sensitized to the possibility that female patients may have different preferences in their interactions with physicians. It is possible that with attention to this during training, male physicians may be able to learn how to better communicate

with their female patients. There also may be a component of the female-female dyad that is not transferable, meaning that no matter how hard male physicians try, female patients will still prefer female physicians. If these findings are replicated in other settings, health care providers should make efforts to ensure adequate numbers of female physicians to care for female patients who prefer to be cared for by female physicians. Researchers and other health care analysts should consider the interaction between physician and patient gender as possible covariates when measuring patient satisfaction.

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