Gendered Care: An Analysis of Health Interactions[1]

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Abstract

Female patients benefit from higher quality communication than male patients in interactions with their physicians, including receiving more information and interpersonal intimacy. Is this the result of female patients demanding more from physicians, or the result of physicians' stereotypes about male and female patients? This field experiment tests whether gender differences in physician-patient interaction remain when patient self-selection and differences in patients' needs are eliminated. Examining N=318 surveys and N=225 videorecorded interactions between medical students and standardized patients, we find that some real-world differences disappear in the randomized field experiment (such as the gender gap in the total time of the interaction), but some differences remain (such as disparities in the patient's subjective experience and the physician's verbal dominance). We use these discrepancies to test which aspects of the gender gap are likely driven by patient behaviors and responses, and which are driven by physician bias.

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Patient Gender, Physician Gender and Concordance

The quality of medical communication men and women experience is unequal. On average, female patients in real clinical encounters receive more information with less jargon, evaluate their encounters more positively, receive more partnership-building and decision-making opportunities, and have more interpersonal intimacy (e.g. gazing, smiling, and proximity) with their physicians during clinical encounters (Hall et al. 1994; Hooper et al. 1982; Waitzkin 1985). The establishment of patient-provider rapport and trust is critical because of its effects on patient outcomes like adherence to health care providers' treatment plans (Haskard Zolnierek and DiMatteo 2009), satisfaction (Haskard et al. 2008), willingness to be active healthcare participants (Savage 2011), and health outcomes (Safran et al. 1998). Still, it is important to note that even though female patients often receive higher quality interactions, they are still stereotyped and more likely to be perceived by physicians as "overanxious," liked less, and spoken to in "bored" tones (Elderkin-Thompson and Waitzkin 1999; Roter and Hall 2006).

Female patients also experience higher quality interactions when they are paired with female physicians (called a *concordant* dyad), as these medical encounters are characterized by longer visits, more equal contribution to the medical dialogue, more positive statements and more eye contact (Hall et al. 1994; Roter, Lipkin, and Korsgaard 1991). Additionally, female-female dyads are more engaged in their interaction: they make more positive statements, nod more, and display other interest cues more often (Hall et al. 1994). Surveys of medical students indicate that female medical students generally value psychosocial concerns, are more patient-centered than their male counterparts, and are more likely to engage in partnership-building dialogue with patients (Levinson and Lurie 2004; Williams and Deci 1996). Similarly, female physicians tend to conduct longer visits, regardless of their specialty or whether they are employed part or full-time (Roter and Hall 2006; Mechanic, McAlpine, and Rosenthal 2001; Bensing, Brink-Muinen, and Bakker 1993), and engage in more emotional talk and partnership-building behaviors with all of their patients (Roter and Hall 2006). The behavior patterns of female physicians are effective; patients talk more and more positively with female physicians (Roter and Hall 2006).

Explanations for Gender Disparities: Patient Selection or Physician Bias?

Although it is tempting to simply attribute gender disparities in interactional quality for male and female patients to physician biases, some evidence suggests that these inequities may be driven by the different behavior patterns of male and female patients. Female patients prefer more feeling-oriented physicians, suggesting that they may actively seek physicians who are more empathetic and who make more socio-emotional statements (Hall and Roter 1994), and reject physicians who do not. Females who opt for same-sex physicians place a higher value on physicians' communication skills, and are less satisfied with the care they receive from physicians of the opposite sex (Schmittdiel et al. 2000). It is also possible that visits with females are longer because female patients engage in different behaviors, asking more questions, being more expressive and being more explicit in making sure they understand technical language (Hall et al. 1994; Roter and Hall 2006; Waitzkin 1985).

The current study adjudicates between these competing explanations for gender differences in healthcare communication by capitalizing on data gathered from a field experiment at the University of Iowa's Carver College of Medicine. Data come from video-recorded encounters

between medical students[2] enrolled in a clinical practice course and "standardized patients," paid actors trained to portray symptoms consistent with a medical illness. While the results from this study are limited by the artificiality of the setting (i.e. both the "doctors" and the "patients" are aware that this is a simulation that is being recorded and assessed), there are several advantages to using such an experiment. First, the medical students know that the interaction is a normal part of their training, making the experimental portion of the study less obvious (i.e. they are told we are collecting data about social interactions without mentioning specifics about hypotheses). Second, standardized patients undergo extensive training to present symptoms in a similar manner, ensuring that the patients do not approach their physicians with different needs or manners of self-presentation (we find no significant gender differences in our coding of standardized patient behaviors). Third, patients are randomly assigned to interact with their physician, thereby ruling out the effects of self-selection. Thus, if physicians are free of bias and gender inequities in healthcare communication are driven by gender differences in patient behaviors and choices, we would not expect to observe any gender differences in this setting.

Data & Methods

We collected complete surveys from standardized patients (actors) and physicians (first year medical students at the University of Iowa) for 318 interactions in 2012 and 2013. The interactions were also videorecorded. These recorded standardized patient interactions are required of all first-year medical students, as part of the medical school curriculum. Physicians were randomly assigned to interact with standardized patients and told to gather detailed patient histories during the interview. Standardized patients were trained to present symptoms and histories associated with various ailments, but the goal of the interaction was not to require the physician to accurately diagnose the illness.

See Table 1 for characteristics of the patients and the physicians. The majority of the standardized patients were white and female, and the majority of physicians were white and male. We use models that adjust for clustering because multiple physicians interviewed the same standardized patient.

After agreeing to participate in the study, physicians and standardized patients were surveyed regarding their demographics, and after each interview, standardized patients and physicians completed a questionnaire asking them to evaluate themselves and their interview partner on the perceived quality of their interaction. These questions included how comfortable, anxious, calm, negative, and attentive they perceived themselves and their interview partner to be during the encounter. All items were on a likert scale from 1-7.

Table 1. Descriptive Statistics, Survey Sample (N=318)

	Mean/Prop.	Standard Deviation	Range
Physician Characteristics (Medical Students)			
Age	60.3	15.6	*22-84*
Male	0.42		*0/1*
White	0.87		*0/1*
Patient Characteristics (Standardized Patients)			
Age	23.4	2.82	*20-38*
Male	0.61		*0/1*
White	0.77		*0/1*

[2] For brevity and ease of reading, we will refer to medical students as physicians or doctors, although it is important to remember they are in fact physicians-in-training.

We also analyze objective indicators of the quality of healthcare communication during the interaction. We coded a random stratified sample (N=225) of viable[3] videos, oversampling videos with at least one interaction partner who was not white in order to maximize the diversity of the sample. All of the medical encounters were coded by three independent, college-age white coders (two female and one male), who were unaware of the hypotheses of the study.[4] Coders underwent extensive training, led by a member of the research team. The coding scheme used to measure the content of medical encounters was inspired by work done with the Roter Interaction Analysis Scale (RIAS), which categorizes events into specific rapport-building, socio-emotional, and task-focused categories (Roter and Larson 2002). First, coders provided their initial impressions of the patient and physician in the medical encounter (including their perception of the patient's and doctor's race, skin tone, gender, performance of femininity/masculinity, etc.). Coders then rated the verbal and non-verbal behaviors of both patients and physicians.[5] Lastly, using timers, the coders measured how much time the patients and physicians each spent talking (in seconds). These values were then divided by the total length of the interview.

Preliminary Results

Standardized patients who are male, compared to their female peers, perceive that their doctor is significantly less comfortable, more anxious, less calm, less happy/more negative, and listens less, as shown in Table 2. When the patient and the doctor are the same gender, the patient reports higher levels of physician comfort and calm in the interaction, but this is not enough to overcome the deficit in the interaction that male patients perceive relative to their female peers. Patients in gender concordant dyads report feeling more personally at ease as well.

Are these subjective patterns supported by the objective measures of the videotaped interactions? One measure of inequality in the physician-patient interview is the length of the interview (with female patients often benefiting from longer interactions), and another is the dominance of the doctor (the amount of time the doctor spends speaking minus the amount of time the patient spends speaking). In our data, there is no difference in the total length of the interview for male and female patients (for male patients, the average total amount of talk time is 9 minutes and 11 seconds; for female patients, it is 9 minutes and 10 seconds). This suggests that the advantage women receive in real clinical settings is not due to physician bias, but rather to differences in patient behaviors or physician selection. Dominance, on the other hand, does vary by gender and

[3] Viable videos were clips that recorded the entire interview and that had a physician and patient visible at all times throughout the encounter. We discarded videos that did not meet these criteria before we drew our sample.
[4] Two of the coders have not yet completed their coding; results here are preliminary because not all of the reliability testing can be completed yet. Reliability testing of the first 50 cases coded by all three coders, using Krippendorff's alpha with a threshold of at least 0.66, suggests that the reliability is reasonable for the measures shown here (time the patient and doctor each spent talking, subjective assessment of the doctor's and patient's enacted masculinity, and amount of social contact). Other measures such as measures of smiling, nodding and eye contact have lower reliability scores in these cases and so are undergoing a second round of review for inconsistencies in the implementation of the coding scheme.
[5] Verbal statements were categorized as: a) Social statements (rapport building statements such as "tell me about yourself"), b) Socio-Emotional statements (conveying empathy), c) Affirmative statements (showing that one is listening), d) Biomedical statements (statements pertaining to medicine or illnesses), and e) Procedural statements (describing the process of the medical encounter). If one person interrupted the other, coders made note of the type of interruption (negative, affirmative, or other type). Smiling, making eye contact, or leaning forward or backward were coded at one minute intervals.

performance of masculinity, as shown in Table 3, with male patients and patients perceived as more masculine experiencing less physician dominance. The dominance finding contrasts with the literature, which shows more physician verbal dominance in male-male dyads (Hall et al. 1994). Table 3 also shows that male patients experience more instances of social physical contact (like a handshake), and male physicians are more likely to engage in physical contact, especially with female patients. This fits with the finding that men are more likely to touch other people because of the greater social and situational power they experience (Hall 1984).

These preliminary results demonstrate the types of tests that are possible with these data. All three coders should have completed their coding of the 2012/2013 data before the conference, so we will be able to finalize our reliability checks and results before the presentation.

Table 2. Ordinal Logit Models: Standardized Patient's Subjective Ratings of Physician and Self

	Standardized Patient's Rating of the Physician					Patient's rating of self			
	Comfortable	Anxious	Calm	Negative	Listening	Comfortable	Anxious	Calm	Negative
Patient age	0.00787	-0.00472	0.0137	-0.00921	0.00366	0.0175	-0.000725	0.00992	-0.0269*
	(0.0157)	(0.0142)	(0.0117)	(0.0170)	(0.0143)	(0.0137)	(0.0141)	(0.0191)	(0.0139)
Foreign born	-0.436	0.426	-0.440	-0.107	0.139	-0.0945	-0.0932	0.353	-0.111
	(0.433)	(0.557)	(0.465)	(0.368)	(0.363)	(0.411)	(0.475)	(0.347)	(0.360)
Male physician	-0.151	0.540***	-0.227	0.621***	-0.114	-0.118	0.0846	0.0731	0.0908
	(0.216)	(0.171)	(0.224)	(0.189)	(0.206)	(0.274)	(0.181)	(0.210)	(0.174)
Male patient	-0.626*	0.823***	-0.730**	0.892***	-0.969*	-0.532	0.512	-0.323	0.769**
	(0.358)	(0.267)	(0.364)	(0.314)	(0.495)	(0.474)	(0.396)	(0.503)	(0.389)
Gender concordance	0.465**	-0.263	0.406*	0.0261	0.246	0.466*	-0.541***	0.527***	-0.407**
	(0.210)	(0.165)	(0.221)	(0.184)	(0.213)	(0.263)	(0.180)	(0.202)	(0.184)
Both White	-0.447	0.600*	-0.295	0.254	-0.0175	-0.115	0.247	0.118	0.285
	(0.288)	(0.317)	(0.293)	(0.354)	(0.334)	(0.376)	(0.397)	(0.378)	(0.364)
Observations					318				

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3. OLS Models of Doctor Dominance (Doctor's total time speaking - patient's total time speaking) and Social Contact

	Doctor Dominance				Social physical contact			
	All		Males	Females	All		Males	Females
Male patient	-37.37**	11.13			0.314***	0.0709		
	(16.25)	(31.63)			(0.101)	(0.202)		
Male physician	9.147	6.993	10.41	-1.809	0.210**	0.222**	0.176	0.268**
	(16.19)	(16.14)	(30.12)	(15.92)	(0.101)	(0.101)	(0.146)	(0.124)
Gender concordance	11.79	10.67			-0.0563	-0.0480		
	(16.19)	(16.11)			(0.101)	(0.101)		
Patient masculinity		-18.50*	-55.76***	-1.167		0.0907	0.119	0.0796
		(10.37)	(20.32)	(11.13)		(0.0652)	(0.0954)	(0.0869)
Both White	-32.63**	-30.65*	56.63	-63.50***	0.0782	0.0641	-0.0765	0.115
	(16.17)	(16.12)	(34.44)	(16.65)	(0.104)	(0.104)	(0.178)	(0.128)
Constant	11.90	46.80*	161.6	46.70*	1.157***	0.988***	1.042**	0.927***
	(19.61)	(27.62)	(97.67)	(26.52)	(0.124)	(0.174)	(0.459)	(0.206)
Observations	196	196	63	133	225	225	76	149

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

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