

Philip J Moore

Department of
Psychology
George Washington
University School of
Medicine
2125 G St NW
Washington, DC 20052

Nancy E Adler

Department of
Psychiatry

University of California,
San Francisco (UCSF)
School of Medicine

Patricia A Robertson

Department of
Obstetrics and
Gynecology
UCSF School of
Medicine

Correspondence to:

Dr Moore

pjmoore@gwu.edu

Competing interests:

None declared

West J Med

2000;173:244-250

Medical malpractice: the effect of doctor-patient relations on medical patient perceptions and malpractice intentions

ABSTRACT ● **Objective** To examine the causal effects of doctor-patient relations and the severity of a medical outcome on medical patient perceptions and malpractice intentions in the event of an adverse medical outcome. ● **Design** Randomized between-subjects experimental design. Patients were given scenarios depicting interactions between an obstetric patient and her physician throughout the patient's pregnancy, labor, and delivery. ● **Participants** One hundred twenty-eight postpartum obstetric patients were approached for participation, of whom 104 completed the study. ● **Main outcome measures** Patients' perceptions of physician competence and intentions to file a malpractice claim. ● **Results** Positive physician communication behaviors increased patients' perceptions of physician competence and decreased malpractice claim intentions toward both the physician and the hospital. A more severe outcome increased only patients' intentions to sue the hospital. ● **Conclusion** These results provide empiric evidence for a direct, causal effect of the doctor-patient relationship on medical patients' treatment perceptions and malpractice claim intentions in the event of an adverse medical outcome.

In the past 30 years, medical malpractice has become 1 of the most difficult health care issues in the United States. In addition to billions of dollars in legal fees and court costs,

medical malpractice premiums in the United States total more than \$5 billion annually,¹ and "defensive medicine"—procedures performed to protect against increasing

litigation—is estimated to cost more than \$14 billion a year.² In addition, although most claims do not result in awards, being involved in a malpractice suit is often a personally and professionally devastating experience.³⁻⁶ Studies have repeatedly shown that the quality of medical care alone is a poor predictor of a medical malpractice claim,⁷⁻¹⁴ and researchers have argued that the rapport between physicians and their patients is a principal determinant of patients' evaluation of their treatment.^{5,15-19}

In examining this doctor-patient hypothesis, recent research has found that physicians who exhibit more negative communication behaviors are more likely to have been sued in the past for malpractice than those with more positive doctor-patient relations.^{20,21} Although these data demonstrate associations between doctor-patient relations and malpractice claims, they do not indicate that rapport caused these differences in claims against physicians. Rather, past experience with malpractice claims may have affected physicians' subsequent interactions with their patients. Thus, there remains a need, as noted by Slawson and Guggenheim, "to find a way to demonstrate the likelihood that most suits brought against physicians are caused by a breakdown of doctor-patient relationships."^{22(p981)}

The most effective method for identifying causal relationships is an experimental design in which participants are randomly assigned to systematically controlled conditions. In the only experimental examination of the doctor-patient hypothesis, researchers showed students a videotape of a hypothetical office visit between a dermatologist and his patient that resulted in either discomfort or scarring.²³ The study found that negative physician communication decreased perceptions of physician competence and raised expressed intention to file a malpractice claim. However, the length of the office visit differed significantly between the positive and negative communication conditions. In addition, whether this research with students would generalize to actual medical patients is unclear.

Malpractice claims may be more likely in cases where clinical outcomes are more severe. Although more severe outcomes are associated with higher monetary awards to malpractice plaintiffs,²⁴ the direct effects of outcome severity on patients' intention to file a malpractice claim have not been examined. We, therefore, wished to address 2 research questions in our study. First, are malpractice claims more likely when the clinical outcome is more severe? Second, are these affected by the quality of the doctor-patient relationship?

SUBJECTS AND METHODS

Participants

Participants were 104 obstetric patients at a major university medical center, for whom institutional review board approval was obtained before the research began. Patients

The core scenario describes the pregnancy, labor, and delivery of a woman, Jane Larsen, giving birth to her first child, including her interactions with her obstetrician, Dr David Miller. The scenario begins with Jane's initial office visit (for which Dr Miller is 30 minutes late), which includes a comprehensive health history and physical examination. Follow-up visits typically include a brief physical examination, measurement of the baby's heart rate, and a discussion of any changes Jane has noticed since her last visit. During the final 2 months of the pregnancy, Dr Miller reviews the labor and delivery process. Jane feels contractions beginning soon after the 38th week of pregnancy, at which point she phones Dr Miller and is admitted to the hospital. After Jane has undergone 5 hours of labor in the hospital, her contractions suddenly become abnormally strong and frequent. An anesthetic is administered to reduce the intensity of the contractions, but to little effect. The fetal heart rate then begins to decrease rapidly, at which point Dr Miller performs a cesarean section.

ranged in age from 18 to 45 years, with a mean age of 32 years. All patients had borne a child in the previous 6 to 12 months. Fifty-nine participants (57%) were white, 18 (17%) were Latina, 11 (11%) were Asian, 9 (9%) were African American, and the rest (6%) were from other ethnic backgrounds. Three participants (3%) had not completed high school, 27 (26%) were high school graduates, 42 (40%) were college graduates, and 32 (31%) had earned graduate degrees.

Procedure

Participants were chosen from patients at the University of California, San Francisco, Obstetrics and Gynecology Faculty Practice. We chose to study obstetric patients because they are among the most likely to file malpractice claims in the event of an adverse medical outcome.¹⁹ Prospective participants were identified by medical records review, and only women who had delivered healthy babies in the previous 6 to 12 months were contacted. Patients who did not speak English and those with a history of either psychological problems or drug addiction were not considered for participation.

A preliminary power analysis was conducted to determine the necessary sample size for this 2-factor analysis of variance. A power of 0.80 was assumed, and an α of 0.05 was chosen. To detect a moderate effect (Pearson product moment $r = 0.30$), a minimum sample size of 82 participants was required.²⁵ Given an expected refusal rate of 25% and a questionnaire return rate of 85%, a total of 128 postpartum women were contacted for participation.

Women who met the inclusion criteria were contacted by phone and asked if they would participate in a study involving the opinions of recent mothers about various aspects of pregnancy. Of 128 women who were contacted, 123 agreed to participate in the study, each of whom was then mailed a study packet. Each packet included a cover

letter (providing a brief introduction and directions), a consent form, and the study instrument containing a scenario and response questionnaires. A total of 104 women subsequently completed and returned the materials. No significant differences were found between respondents and nonrespondents in age, ethnicity, education, length of pregnancy, or postpartum hospitalization. In addition, the rate of return for questionnaires did not differ significantly across experimental conditions.

Study scenarios

The study instrument presented to each patient included 1 of 4 scenarios depicting the interactions between an obstetric patient and her physician throughout the patient's pregnancy, labor, and delivery. Based on interviews with physician members of the Obstetrics and Gynecology Faculty Practice, each scenario included a common core scenario, in addition to elements specific to its experimental condition. Each participant was asked to respond as if she were in the position of the patient described. An example of a case scenario is shown in the box.

Experimental conditions

Two factors were included in the current research design. Two levels of doctor-patient relations (positive or negative) were combined with 2 levels of medical outcome severity (mild or severe) to comprise a 2 × 2 between-

subjects experimental design. A randomly ordered series of integers from 1 to 4 was used to assign each participant to 1 of the 4 experimental conditions.

Doctor-patient relations

The quality of doctor-patient relations was varied according to physician communication behaviors. Among pilot study patients, 7 physician communication behaviors emerged as most important for doctor-patient rapport. These behaviors included whether the physician was friendly, personally interested in the patient, emotionally supportive, communicated clearly, let the patient know what to expect, confirmed patient understanding, and offered suggestions to make the pregnancy easier. Using pilot information gained from both physicians and patients, specific examples of these behaviors (summarized in table 1) were inserted throughout each scenario.

Medical outcome severity

Immediately following the description of the labor and delivery, a final paragraph indicated the severity of the medical outcome for the newborn child. In all scenarios, this paragraph began with the following sentence: "Soon after the birth, it was determined that the baby had experienced ischemia (sharply reduced blood flow) and asphyxia (a lack of oxygen) as a result of these complications."

Table 1 *Positive and negative physician communication behaviors*

Behavioral categories	Specific communication behaviors	
	Positive	Negative
Friendly	Greeted patient warmly Apologized for delay	Did not greet patient Did not apologize for delay
Personal interest in patient	Asked informal questions Gave patient undivided attention Made eye contact	Asked no informal questions Always seemed in a hurry to finish Made no eye contact
Emotionally supportive	Praised patient for quitting smoking during pregnancy Offered condolences on death of patient's father Never critical when making recommendations	Admonished patient for having smoked before pregnancy No response to death of patient's father Often critical when making recommendations
Provided explanations	Explained changes patient experienced during pregnancy Pointed out possible obstacles to patient adherence	Did not explain changes patient experienced during pregnancy Did not point out any obstacles to patient adherence
Communicated clearly	Rarely used medical terms Explained terms when used	Often used medical terms Did not explain terms
Confirmed understanding	Encouraged patient to ask questions Listened carefully to patient	Did not encourage questions Interrupted patient frequently
Made suggestions to make pregnancy easier	Offered referral for counseling Provided strategies for overcoming obstacles to adherence	Did not offer counseling referral Provided no strategies for overcoming obstacles to adherence

The final sentence then determined the outcome severity conditions. In the mild outcome conditions, the baby was said to have “a slight chance of experiencing some developmental problems or long-term mental impairment, [but] this was very unlikely because most babies who suffer mild asphyxia live perfectly normal lives.” In the severe outcome conditions, patients read that further tests “indicated that the infant had almost certainly suffered serious brain damage, which would lead to significant developmental problems, as well as long-term mental retardation.”

Patient response measures

Patient satisfaction

To measure patient satisfaction with the depicted physician, participants completed the Patient-Doctor Interaction Scale (PDIS), a standardized questionnaire designed to assess patients' perceived quality of treatment by a physician.²⁶ The PDIS has undergone extensive validation and is frequently used to measure medical patient satisfaction.²⁷ It consists of 18 items, half of which are framed positively (eg, “The doctor explained the reasons for his recommendations”) and half negatively (eg, “The doctor used many words I did not understand”). Participants indicated the extent to which they agreed with each statement on a scale from 1 (“strongly disagree”) to 5 (“strongly agree”). After negatively framed items were reverse-scored, responses were combined and averaged, resulting in an overall score for each participant that ranged from 1 to 5, with higher numbers representing greater satisfaction. In the current context, this measure provides a check on the effectiveness of the doctor-patient conditions. For this reason, patients were presented with the PDIS immediately before the description of labor and delivery. In addition, participants were asked to complete each section of the study before beginning the next section.

Patient perceptions

Using the same 1-to-5 scale (strongly disagree to strongly agree), patients indicated their beliefs about the competency of the physician described in the scenario, the predictability of the complications associated with the births, and the physician's responsibility for the outcome. Specifically, participants indicated their agreement, respectively, with the following statements: “The doctor was competent,” “The complications of the birth were predictable,” and “The doctor was responsible for the complications of the birth.” To obtain more detailed information about patients' perceptions of responsibility, the questionnaire also asked participants to indicate the percentage of responsibility (from 0%-100%) they attributed to the physician, the patient herself, the nursing staff, and chance.

Malpractice claim intentions

Finally, again using a 5-point scale, patients indicated their agreement with the statement, “Given what happened in the pregnancy described earlier, I would be likely to file a malpractice claim against the physician.” Using the same scale and type of question, patients then indicated the likelihood that they would file a malpractice claim against the hospital.

RESULTS

Preliminary analysis

To examine the effectiveness of the current randomization, we conducted preliminary analyses comparing participant demographic variables across experimental conditions. No significant differences were found between any of these conditions in either participant age, ethnicity (white vs nonwhite), or years of education ($P > 0.46$ for all variables).

Table 2 Mean patient satisfaction, physician competence, outcome predictability, physician responsibility, and malpractice intentions for positive and negative physician communication

Response measure	Overall rating	Total No.	Positive communication	No.	Negative communication	No.
Satisfaction†	2.80 (1.17)	104	3.81 (0.67)	52	1.80 (0.52)	52
Physician competence‡	2.70 (1.28)	101	3.06 (1.32)	50	2.35 (1.16)	51
Outcome predictability	3.24 (1.25)	102	3.08 (1.31)	51	3.39 (1.18)	51
Physician responsibility§	3.21 (1.30)	103	2.82 (1.20)	51	3.60 (1.30)	52
Malpractice intentions						
Against physician†	3.12 (1.34)	103	2.55 (1.15)	51	3.67 (1.28)	52
Against hospital§	3.45 (1.29)	102	3.16 (1.27)	52	3.73 (1.25)	50

†Significant difference between positive and negative behaviors ($P = 0.001$).

‡Significant difference between positive and negative behaviors ($P = 0.01$).

§Significant difference between positive and negative behaviors ($P = 0.05$).

Patient satisfaction

Participants expressed an overall mean satisfaction rating of 2.8 out of a possible 5.0 (table 2). Patients presented with positive physician communication behaviors expressed significantly greater satisfaction (mean = 3.8) than those exposed to more negative physician behaviors (mean = 1.8; $F_{1,103} = 291.39$, $P < 0.001$). Patients' expressed satisfaction did not differ significantly with the severity of the medical outcome ($P > 0.34$) or the interaction between outcome severity and communication behaviors ($P > 0.90$).

Physician competence

Patients gave the physician an overall mean competency rating of 2.7. Participants presented with positive communication behaviors reported significantly greater perceptions of physician competence (mean = 3.1) than those exposed to more negative behaviors (mean = 2.3; $F_{1,100} = 8.13$, $P < 0.01$). Neither the severity of the medical outcome ($P > 0.45$) nor its interaction with physician communication behaviors ($P > 0.70$) exerted a significant influence on participants' perceptions of physician competence.

Event predictability

On a scale from 1 to 5, participants rated the predictability of the medical complications as 3.2. This rating did not differ significantly as a function of either doctor-patient relations, outcome severity or their interaction ($P > 0.31$ for all).

Physician responsibility

On average, patients attributed 44% of the responsibility for the adverse medical outcome to the physician, 7% to the hospital staff, 10% to the patient herself, and 39% to chance. Patients exposed to positive doctor-patient relations ascribed less responsibility to the physician for the

adverse outcome (mean = 2.8) than those presented with less positive relations (mean = 3.6; $F_{1,102} = 9.65$, $P < 0.01$). The severity of the medical outcome exerted no influence on any patient perceptions of responsibility ($P > 0.54$), and the effect of outcome severity was not influenced by the quality of the doctor-patient communication ($P > 0.65$).

Malpractice claim intentions

Patients' overall average claim intentions toward the physician and the hospital were, respectively, 3.1 and 3.5 on a 5-point scale. With positive doctor-patient relations, patients reported significantly lower malpractice claim intentions toward both the physician ($F_{1,102} = 21.97$, $P < 0.001$) and the hospital ($F_{1,101} = 5.61$, $P < 0.05$). However, a more severe outcome increased only patients' intentions to sue the hospital ($F_{1,101} = 8.59$, $P < 0.01$) (table 3). Finally, the effect of doctor-patient relations on patient malpractice claim intentions was independent of the severity of the adverse medical outcome ($P > 0.36$).

DISCUSSION

Positive doctor-patient relations increased obstetric patients' perceptions of physician competence, decreased their perceptions of physician responsibility for an adverse medical outcome, and reduced their expressed intentions to file malpractice claims against both the physician and the hospital. Outcome severity affected only expressed malpractice intentions toward the hospital, and the interaction between doctor-patient relations and outcome severity exerted no detectable effect on any outcome measures in the current study.

This research has several limitations. First, obstetric patient responses may not generalize to medical patients as a whole, as illustrated by research findings that malpractice claims against surgeons were not associated with the quality of their communication behaviors.²¹ Although this effect may reflect the gender of these surgeons (all but 1

Table 3 Mean patient satisfaction, physician competence, outcome predictability, physician responsibility, and malpractice intentions for mild and severe medical outcomes

Response measure	Overall rating	Total No.	Mild medical outcome No.	Severe medical outcome No.
Satisfaction	2.80 (1.17)	104	2.89 (1.14)	2.72 (1.21)
Physician competence	2.70 (1.28)	101	2.80 (1.26)	2.62 (1.32)
Outcome predictability	3.24 (1.25)	102	3.06 (1.20)	3.40 (1.29)
Physician responsibility	3.21 (1.30)	103	3.13 (1.33)	3.29 (1.29)
Malpractice intentions				
Against physician	3.12 (1.34)	103	2.96 (1.37)	3.27 (1.30)
Against hospital*	3.45 (1.29)	102	3.10 (1.37)	3.80 (1.10)

*Significant difference between mild and severe medical outcomes ($P = 0.01$).

of whom were men), the doctor-patient hypothesis may also be particularly relevant to medical services that, like obstetrics, involve ongoing doctor-patient relationships. These questions can be addressed by future research comparing responses from patients with male with those with female physicians within different medical specialties.

Second, participants in this study were not involved in the cases to which they responded, which may help to explain the modest effects of outcome severity. However, a more severe outcome did increase participants' litigious intentions toward the hospital, indicating some effect of these severity conditions. Moreover, doctor-patient relations exerted significant effects, which presumably would have been even more pronounced had patients actually been involved in the case.

Third, the current research involved patients' expressed malpractice intentions rather than actual behavior. Although intentions do not necessarily translate into behavior, in the context of malpractice decision making, they are a necessary precursor to action. Thus, to the extent that positive doctor-patient relations reduce malpractice intentions, they may similarly influence the eventual decision to file a claim.

Finally, the current participants were of relatively high socioeconomic status. Medical patients with higher levels of education have reported less satisfaction than patients with lower levels of education,²⁸ and wealthier patients are more likely to file malpractice claims than those with lower incomes.²⁹ Thus, although these participants may not be representative of patient populations at large, higher socioeconomic status may be particularly relevant to medical malpractice claims.

The current results support the notion that physicians' interpersonal interactions with patients—apart from the technical care they provide—is a critical aspect of patient care. In addition, although a more serious medical outcome may not make patients more inclined to file a claim against a physician, a less severe outcome may not be sufficient to prevent a claim when the doctor-patient relationship is poor.

The method used in the present research—experimental conditions embedded in scenarios presented to actual patients—is provided as a model for future studies seeking to test the doctor-patient hypothesis, and to identify other determinants of patient satisfaction, perceptions, and other outcomes. For example, the effects of doctor-patient relations found in this and other studies may be attributable to a relatively small subset of behaviors of particular importance to patients. This possibility can be evaluated in future experiments by systematically examining specific communication behaviors, both individually and in combination. The results of such research can help us better understand and address the needs of

medical patients, including those whose outcomes may be poor. In turn, this information can be used to reduce patient stress, potential litigation, and the tremendous costs associated with each, both for those involved and for society as a whole.

Funding: This research was supported by Psychology and Medicine grant MH19391 from the National Institutes of Health, Bethesda, MD, and by grant IRT 560 from the John D and Catherine T MacArthur Foundation, Chicago.

References

- Hiatt H. Medical malpractice. *Bull N Y Acad Med* 1992;68:254-260.
- Rubin RJ, Mendelson DN. How much does defensive medicine cost? *J Am Health Policy* 1994;4:7-15.
- Larimore WL. Attitudes of Florida family practice residents concerning obstetrics. *J Fam Pract* 1993;36:534-538.
- Goldsmith JP. Medical-legal concerns of providing high risk neonatal care in an HMO. *HMO Pract* 1989;3:210-215.
- Slawson PF. Psychiatric malpractice: some aspects of cause. *Psychiatr Hosp* 1984;15:141-144.
- Wood CL. Historical perspectives on law, medical malpractice, and the concept of negligence. *Emerg Med Clin North Am* 1993;11:819-832.
- Slavitt DR. *Physicians Observed: A Startling Examination of the Men And Women We Trust With Our Lives*. Garden City, NY: Doubleday; 1987.
- Bernstein AH. *Avoiding Medical Malpractice*. Chicago: Pluribus Press; 1987.
- Edwards FJ. *Solving the Crisis*. New York: Henry Holt; 1989.
- Sowka MP. The medical malpractice closed claims study: conducted by the National Association of Insurance Commissioners. *Conn Med* 1981;45:91-101.
- Gregory DR. Medical malpractice prevention. In: Wecht C, ed. *Legal Medicine*. Philadelphia: WB Saunders; 1982:177-186.
- Herbert V. A proposed solution to the malpractice problem. *N Y State J Med* 1986;86:394-395 [published erratum appears in *N Y State J Med* 1986;86:494].
- Brennan TA, Leape LL, Laird NM, et al. Incidence of adverse events and negligence in hospitalized patients: results of the Harvard Medical Practice Study I. *N Engl J Med* 1991;324:370-376.
- Localio AR, Lawthers AG, Brennan TA, et al. Relation between malpractice claims and adverse events due to negligence: results of the Harvard Medical Practice Study III. *N Engl J Med* 1991;325:245-251.
- Lieberman JA. *The Litigious Society*. New York: Basic Books; 1985.
- Friedman L. *Total Justice*. New York: Russel Sage; 1985.
- Eisenberg H. New light on the costliest malpractice mistakes. *Med Econ* 1973;16:146-150.
- Hicks RG. Ounces of prevention, I. *N Y State J Med* 1973;73:2268-2269.
- Vincent C, Young M, Phillips A. Why do people sue doctors? a study of patients and relatives taking legal action. *Lancet* 1994;343:1609-1613.
- Hickson GB, Clayton EW, Entman SS, et al. Obstetricians' prior malpractice experience and patients' satisfaction with care. *JAMA* 1994;272:1583-1587.
- Levinson W, Roter DL, Mullooly JP, Dull VT, Frank RM. Physician-patient communication: the relationship with malpractice claims among primary care physicians and surgeons. *JAMA* 1997;277:553-559.
- Slawson PF, Guggenheim FG. Psychiatric malpractice: a review of the national loss experience. *Am J Psychiatry* 1984;141:979-981.
- Lester GW, Smith SG. Listening and talking to patients: a remedy for malpractice suits? *West J Med* 1993;158:268-272.

- 24 Brennan TA, Sox CM, Burstin HR. Relation between negligent adverse events and the outcomes of medical-malpractice litigation. *N Engl J Med* 1996;335:1963-1967.
- 25 Keppel G. *Design and Analysis: A Researcher's Handbook*. Englewood Cliffs, NJ: Prentice-Hall; 1982.
- 26 Smith JK. Development of the Smith-Falvo Patient-Doctor Interaction Scale (PDIS). *Dis Abstracts Int* 1983;44:349.
- 27 Bowman MA, Herndon A, Sharp PC, Dignan MB. Assessment of the patient-doctor interaction scale for measuring patient satisfaction. *Patient Educ Couns* 1992;19:75-80.
- 28 Anderson LA, Zimmerman MA. Patient and physician perceptions of their relationship and patient satisfaction: a study of chronic disease management. *Patient Educ Couns* 1993;20:27-36.
- 29 Burstin HR, Johnson WG, Lipsitz SR, Brennan TA. Do the poor sue more? a case-control study of malpractice claims and socioeconomic status. *JAMA* 1993;270:1697-1701.