

Communication study

Effect of sitting vs. standing on perception of provider time at bedside:
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ABSTRACT

Objective: Patients commonly perceive that a provider has spent more time at their bedside when the provider sits rather than stands. This study provides empirical evidence for this perception.**Methods:** We conducted a prospective, randomized, controlled study with 120 adult post-operative inpatients admitted for elective spine surgery. The actual lengths of the interactions were compared to patients' estimations of the time of those interactions.**Results:** Patients perceived the provider as present at their bedside longer when he sat, even though the actual time the physician spent at the bedside did not change significantly whether he sat or stood. Patients with whom the physician sat reported a more positive interaction and a better understanding of their condition.**Conclusion:** Simply sitting instead of standing at a patient's bedside can have a significant impact on patient satisfaction, patient compliance, and provider–patient rapport, all of which are known factors in decreased litigation, decreased lengths of stay, decreased costs, and improved clinical outcomes.**Practice implications:** Any healthcare provider may have a positive effect on doctor–patient interaction by sitting as opposed to standing during a hospital follow-up visit.

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1. Introduction

Literature results vary regarding the effect of provider posture on patients' perceptions of both the length of time and the quality of the patient–provider interaction. Medical and nursing students throughout the country are commonly taught that patients will perceive the provider as present at the bedside longer if the provider sits rather than stands during the interaction [1]. However, little published research substantiates this assertion. Several studies have been conducted on this topic in various settings, including the frenzied environment of the emergency room staffed with providers the patients had never before met, the emotional environment of a cancer practice that regularly gives bad news, and the sometimes impersonal setting of outpatient clinics that employ multiple physicians. Gross et al. [2] were the first to report a strong correlation between patient satisfaction and

length of visit in the outpatient family practice setting, noting that certain physician behaviors can increase or diminish that level of satisfaction. No previous studies have been conducted in an elective inpatient post-operative setting.

With ever-increasing patient loads, limited resources, and exhausting work demands for physicians, it is imperative to understand the essentials of an effective patient visit. In daily practice, especially in the inpatient setting, it may be difficult for the physician to sit down during the visit due to perceived lack of time, lack of physical space, or lack of available chairs. We built upon the results of the previous studies by focusing on the lower-acuity illness setting of routine inpatient postoperative visits (as opposed to emergency or ICU care), conducted by a surgeon with whom the patients already had an established relationship.

Compared to the length of patient visits in the other studies, a routine post-operative visit is a very short interaction. In this pilot study, we sought to highlight the effect of posture in such a brief, focused encounter with a provider well known to the patient, and with whom the patient would continue in follow-up. We had two hypotheses: (1) hospitalized patients would perceive that the physician spent more time with them than he actually did when he sat during rounding versus when he stood, and (2) the physician

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Random #: even=sit, odd=stand	Study Participant #	Room ID (deleted after completion)	Sit vs Stand	Actual Time	Perceived Time
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Fig. 1. Data collected.

would actually spend more time at the bedside when he sat versus when he stood.

By examining patients' perceptions of provider time at bedside compared to the actual provider time at bedside, we may then further generalize to other health care settings and improve patient perceptions of the provider–patient interaction. These patient perceptions are a component of patient satisfaction [2–4], which is associated with decreased litigation, decreased cost, increased referrals, improved compliance, and improved clinical outcomes [2,3,5–7].

2. Materials and methods

2.1. Design

After approval from the appropriate Institutional Review Board, this prospective, randomized, controlled study was conducted at one academic medical center between April 2007 and June 2008.

2.2. Data sources and description

The study included 120 adult post-operative neurosurgical inpatients, divided into two groups of approximately 60 patients each. All patients admitted to the medical center by one neurosurgeon for elective spine surgery were automatically included, unless they were unable to communicate because of a current or previous medical condition or a language deficit, were sedated because of ventilator dependence, or were drowsy due to narcotic analgesics given to relieve post-operative pain. Inclusion criteria also included the ability to communicate in English and being eighteen years or older. Eligibility for inclusion was determined by the nursing researcher and attending physician based on this criteria and on the patient's neurocognitive status during rounds. All visits in the study were first post-operative visits, within 24 h of surgery. The attending surgeon was interested in improving patient–physician relationships and was neutral regarding the role of posture before the project began.

2.3. Sampling

A list of 120 integers was randomized ("Random Number Generator" (<http://www.pangloss.com/seidel/rnumber.cgi>). During post-operative rounds, the physician was asked to stand in the patient's room if the random integer was odd and sit if the integer was even. The physician was then asked to visit with the patient, as he would in the usual course of post-operative care.

An observer in the room measured the actual length of the physician/patient interaction with a stopwatch. Timing began when the physician entered the patient's room and ended when he exited. Patient perceived time (retrospective time estimation) was indicated on a standard horizontal ratio-measurement scale marked at equal intervals with zero minutes at the far left and 15 min at the far right. The data collected was entered into a table (Fig. 1). To ensure confidentiality, patient names were not used. Data was not collected on patient gender, age, or level of education. During the sitting encounters, the physician sat in a chair next to the bed or, on the few occasions when no chair was available, sat on the bed near the patients' feet.

Rounds were conducted by the neurosurgeon on weekdays before 5:00 p.m. Because this is a teaching hospital, the physician is accustomed to conducting rounds in front of a diverse audience. Thus, we did not believe the presence of the researcher (a nurse) would affect physician behavior during the interaction. The post-operative patient evaluation was consistent for each patient, including a discussion of the outcome of surgery and a brief conversation regarding the extent of hospitalization and recovery. Each patient was interviewed only once during his/her hospital stay. For some patients, this was the first interaction they had had with the surgeon since their appointment at the clinic before surgery, but in all cases, the patients were already familiar with the physician and his demeanor.

Prior to the physician entering the room, the nurse researcher consulted a randomization table that determined whether the physician would sit or stand. The nurse researcher stood outside the room and timed the interaction with a stopwatch. The entire length of the encounter was timed from the moment the physician entered the room until the moment he exited.

After the physician exited the room, the researcher entered the room to ask the patient to estimate the amount of time the physician had spent in the room during that interaction. To ensure consistency, the same nurse researcher conducted each interview and asked the same questions in the same order. After the patient gave his/her estimate in seconds/minutes, the researcher then spoke from a debriefing script to ensure further consistency among interviews (Fig. 2). The patient then marked whether or not his or her data could be used for the study.

After signing the consent form, the patients then marked on a horizontal time scale a line length that matched their impression of the duration of the interaction. As the study progressed, the research team noticed that when the physician sat at the bedside, many people voiced positive comments about the interaction. It was decided to add a qualitative piece to the research by asking the open-ended question, "What did you think about the interaction with Dr. X?" These comments were recorded by the nurse researcher for the last 38 individuals in the study.

2.4. Data analysis

Prior to testing the hypothesis, the actual time the physician spent with patients when sitting and when standing was compared using SPSS [SPSS 12.0 for Windows 2003; Chicago: SPSS Inc.]. An independent *t*-test was used to perform statistical analysis of the quantitative data, to determine significance, and to examine group

"My name is (name), and I'm a nurse researcher here at the hospital. We are in the process of conducting a study to see if patients think a doctor spends more time in their room when the doctor sits down versus when the doctor is standing the entire time. We asked the doctor to assist us in gathering this information. Before entering a patients' room, we ask the doctor to either sit down or stand up while addressing the patient in that room. The reason we asked you how long the doctor was in your room today was to gather information so that we can examine whether or not sitting or standing affects how long patients think the doctor is in the room. I would like to get your permission to use the information you have given us."

Fig. 2. Nurse researcher's debriefing script.

differences in perceived time with the physician. Statistical significance was considered achieved with $p < 0.05$. Researchers examined the actual length of time the physician spent in the room when he sat versus when he stood, the patients' perception of the length of time the doctor spent at the bedside, and the actual amount of time the doctor spent at the bedside versus patients' perception of that length of time. In addition, comments made by patients were classified as either positive or negative. The number of positive and negative comments made by patients was analyzed in comparison to the physician's posture in the room during the course of the interaction. Frequently re-occurring statements are included in Section 3.

3. Results

A total of 127 patients were sampled for the project. Only seven patients were excluded (three refused to participate and four were unable to communicate due to postoperative sedation). Sampling continued until we obtained approximately 60 sitting encounters and 60 standing encounters for a total of 120 patients, which was the stated goal of the study.

3.1. Quantitative results

In both groups of patients, a significant difference was found between patients' perception of time spent at the bedside and actual time at the bedside ($p = 0.01$). The average actual length of time the physician spent at the bedside when he stood was 1 min and 28 s. Patients perceived him as being at the bedside an average of 3 min and 44 s. The doctor sat at the bedside an average of 1 min and 4 s. Patients perceived him as being there an average of 5 min and 14 s (Fig. 3). As mentioned above, the first hypothesis was that patients would perceive the provider as being at the bedside longer if he sat. When two extreme outliers in the standing group falling three standard deviations above the mean were removed because the time estimate was too long, the statistical analysis showed an even greater significant difference ($p = 0.002$) between the amount of time patients perceived the physician as being in the room when he sat versus when he stood. As expected, patients perceived him as being in the room longer when he sat. The second hypothesis was that the physician would spend a longer amount of time in the room when he sat. Contrarily, statistical analysis using a two-tailed t -test showed no significant difference between the physician's actual sit time and stand time ($p = 0.93$ and 0.87 , respectively) (Fig. 4).

3.2. Qualitative results

Thirty-eight patients were asked about their feelings regarding the interaction with the physician. Twenty of these were patients with whom the physician sat and 18 were patients with whom the

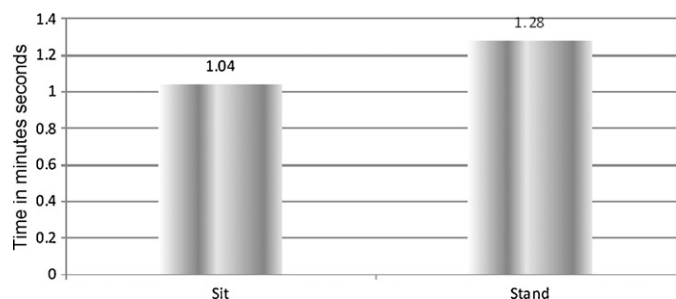


Fig. 4. Actual provider time at bedside, whether sitting or standing.

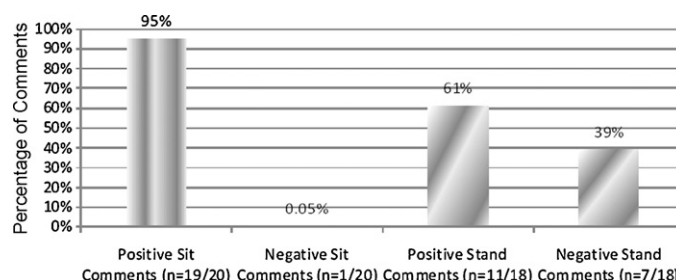


Fig. 5. Percentages of positive and negative comments by provider posture.

physician stood. When the physician sat during the course of the interaction, 95% (19/20) of the comments were positive. Frequently expressed positive comments included: "The doctor took the time to sit and listen," and "He sat down long enough to get all of my questions answered." Conversely, only 61% (11/18) of the patients surveyed expressed positive comments following the interaction when the physician stood. Frequently expressed negative comments included: "I didn't have time to ask the doctor any questions," and "He was in and out of my room before I even knew what was going on." It is notable that more positive comments than negative comments were made in both groups (Fig. 5). However, a substantially higher number of patients ($p < 0.05$) reported a positive interaction when the physician sat.

4. Discussion and conclusion

4.1. Discussion

Patient–physician communication can influence outcomes such as symptom resolution, emotional health, pain control, and even physiologic measures such as blood pressure and blood sugar levels [4,8,9]. Effective communication skills have been associated with adherence to therapy [5], understanding of treatment risks, and even a reduced risk of medical mistakes and malpractice claims [9]. Stewart was the first to review studies linking communication with patient health outcomes, and found that most studies show a statistically significant and clinically important association between improved patient health outcomes and effective provider–patient communication [8]. Currently, 65% of medical schools teach communication skills [9,10]. The Accreditation Council for Graduate Medical Education recommends that physicians become competent in five key communication skills: (1) listening effectively; (2) eliciting information using effective questioning skills; (3) providing information using effective explanatory skills; (4) counseling and educating patients; and (5) making informed decisions based on patient information and preference (Accreditation Council for Graduate Medical Education (ACGME) [9,11]. However, it is not made clear to health

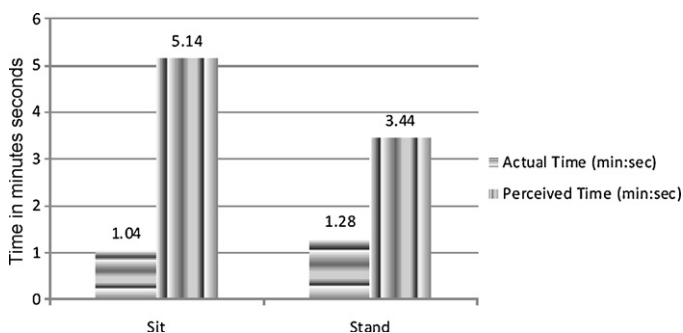


Fig. 3. Actual time and patient perceived time of provider at bedside.

care providers in their training which body posture may be most effective while communicating with patients.

As the technology and complexity of medicine advance, the interpersonal aspects of medical practice may receive less attention but remain important for study [12]. The few other studies that have examined this subject were conducted in the frenzied environment of the emergency room (involving providers whom the patients had never before met), the emotional environment of a cancer practice involving the giving of bad news, or in often impersonal outpatient clinics that employ multiple physicians. In contrast, our study was conducted on an inpatient post-surgical unit using a provider who was well known to the patients and with whom there was an ongoing patient–physician relationship. Because of a paucity of data regarding this particular topic, Griffith et al. recommended that future studies investigate actual patient–physician encounters to consider how nonverbal communication might vary in follow-up visits with more established patients and a tighter patient–physician relationship [13]. Our study aims to help fill this void in the literature.

Overall, patients perceived that the physician spent more time at the bedside when he sat rather than stood, confirming the primary hypothesis. Few previous studies have addressed this issue, but the data collected in this study provide empirical evidence for this commonly held belief. The secondary hypothesis was not supported. Results showed that the physician did *not* spend more time in the patient's room when he sat. Our findings suggest there is no time cost associated with sitting in the patient's presence; the time that the physician actually spent in the room did not change significantly based on posture. Of equal interest in our study is that patients expressed more satisfaction, felt their questions were better addressed, and expressed a better sense of understanding of their condition when the physician sat rather than stood at the bedside. Patients often stated that the physician seemed hurried and abrupt when he stood in the room, but reported that the physician spent an adequate amount of time with them and addressed their questions when he sat. Our findings contradict those mentioned in the Bruera et al. study, in which seated posture did not compensate for a hurried and abrupt manner [14].

The length of a patient–physician visit is often determined by factors beyond the physician's control [15,16]. Sanderson-Austin and Wetzler reviewed data from the American Medical Group Association's (AMGA's) Patient Satisfaction Assessment Program among 45,000 providers and found that the aspect of patient care with the most room for provider improvement was the patient's *perception* of time spent during the visit [17]. Productivity-based physicians are expected to see a large number of patients each day, and more technical specialties delegate much of the assessment to allied health providers. As a result, patients may spend even less time with their surgeon [17]. Medical groups reported that providers who make even small changes in how they interact with a patient – such as sitting down when talking with the patient – can make a significant difference in how the patient perceives the time spent [17]. The physician who believes he or she is short on time may show signs of inattention or being rushed, which may cause patients to doubt their physician's dedication to their health problem(s) [15,16]. Practitioners tend to overestimate the amount of time they spend informing patients during an encounter [5,18]. Although a physician may not personally feel rushed, or indeed may not be as short of time as he or she believes, his or her nonverbal communication may create a misperception of hurriedness, leading to adverse consequences [3]. We believe the patients felt the physician was not rushed when he sat, and that his being physically closer and perhaps making better eye contact increased the empathy he expressed both verbally and nonverbally.

Time is an essential component of perception [19], and critical to a patient's experience is his or her perceived *quality* of time [15]. The longer the visit, the more patients are satisfied with the time spent with the physician [2]. Block identified four factors that appear to influence time perception: characteristics of the person experiencing time, time-related behaviors and judgments, contents of a time period, and activities during a time period [20]. These four factors are inter-related; thus, changes in one factor are likely to create changes in the other factors [19].

A literature review revealed only one study that measured the effect of provider body posture on patient *perception* of length of time spent in the patient's room. Johnson et al. conducted a randomized study of 224 patients in the emergency department of an academic medical center, in which patients were asked to evaluate their first interaction with a healthcare professional in that setting [1]. Thirty-four providers, including physicians, residents, physician assistants and medical students, were included. The authors found that provider posture did indeed affect patient perception of time spent at the bedside. Patients consistently underestimated the time providers spent at the bedside when the provider stood, and consistently overestimated time spent at the bedside when the provider sat. However, patient perceptions of the quality of the interaction were not influenced by provider posture. The authors concluded that although provider posture does affect patient perceptions of provider time spent at bedside, it does not affect patient perceptions of the *quality* of that time spent, meaning the provider's bedside manner and his or her understanding of the patient's problem [1].

In contrast, multiple studies have validated that a seated posture appreciably enhances rapport and evokes a sense of interest, compassion, and increased satisfaction among patients [4,14]. In one such study, 69 inpatients with advanced cancer were given a video of two patient/physician interaction sequences. Patients were randomized to view either Video A, in which the physician was standing in the first sequence and sitting in the second, or Video B, in which the physician was sitting in first and standing in the second. The authors noted that 51% of patients preferred the sitting physician, perceiving physician compassion, caring, and encouragement of patient questions [4]. At the end of the study, more than 80% of the patients reported it important that the physician sit during the interaction. The authors noted, though, that when one considers a physician's posture within the context of other verbal and nonverbal aspects of a visit and within the context of the various components of physician behavior, the importance of the physician's posture is likely limited [4,14].

Patients judge a provider's level of compassion not only by the provider's posture but also by the provider's communication skills and use of other interpersonal gestures [14]. Bruera et al. conducted a study in which a group of patients with locally advanced cancer or incurable metastatic disease were selected to watch video sequences of a sitting or standing physician breaking bad news to a cancer patient [14]. The study group preferred physicians who sat, perceiving those physicians as significantly more compassionate and giving them a higher overall impression rating than physicians who stood. When patients were asked about their ideal consultation with a physician, most patients rated physician behaviors such as time spent, respect, a warm and caring attitude, and patience as equal to or higher than a provider's sitting or standing posture. Merely adopting a sitting posture is not likely to compensate for poor communication skills [14].

Patient satisfaction has been shown to connect with treatment plan compliance [2], better treatment outcomes, and patient retention in the patient's preferred health care organization [2,21]. Patient compliance and provider re-use contribute to continuity of care [21] and to more efficient and effective treatment. Lin et al. investigated patients' expectations regarding time needed with

their physicians in an outpatient practice [3]. Meeting or exceeding patient expectations is a major factor of overall patient satisfaction [3]. Baron-Epel et al. termed this idea “perceived expectation fulfillment:” the degree to which patients’ expectations were met [22]. Lin et al. found that patients who perceived a longer-than-expected visit with their physician reported significantly more satisfaction with the visit [3]. Patients report greater satisfaction when they perceive the time spent with their physician has been adequate [16]. Their perception of that time may be influenced less by the actual number of minutes of the interaction and more by the quality of the interaction, the quality of the patient–physician relationship, and whether or not the patient’s expectations for the visit were met [3,16,22,23]. Patients’ evaluation of their medical care is determined primarily not by the quality of care, but rather by patient–physician rapport [7]. Rapport-building influences data-gathering, and both rapport-building and data-gathering influence decision making. All three processes then influence patient outcomes [12].

The authors acknowledge several limitations of this study. Because the patients involved in the study were all post-operative surgical patients, the outcome of the surgery may have affected their perception of the time spent with the physician during inpatient follow-up rounds. In some instances, satisfaction with surgery outcome could have out-weighed poor bedside manner and/or abruptness, while factors such as pain and post-operative complications could intensify such negative characteristics. In future studies, interviewing patients pre-operatively or in another patient care setting might overcome this potentially confounding factor. Secondly, the data collected was formulated by multiple patients’ interactions with one provider—the surgeon. Our physician knew that a study was being performed, that he was the only physician being evaluated, and that the study involved his own behavior (body posture) during patient interactions. It is possible that the amount of time measured was not indicative of his usual practice, but by all accounts, his behavior was consistent with his usual method of practice, including the amount of eye contact with patients and the manner in which he sits and stands. In future studies, collecting information on interactions with more than one provider might be beneficial. A multidisciplinary approach would also help to increase generalization of future research. Furthermore, qualitative data was collected on only a small portion of the patients included in the study. Though it is believed that the patients surveyed depict a valid representation, it is recommended that a greater sample size be included in future studies.

4.2. Conclusion

More research is needed in medical communication to generalize the relative importance of a physician sitting or standing during a medical visit [4]. Strasser et al. recommend that future studies assess whether the physician’s posture influences the patient’s perception of technical aspects such as knowledge, competence, and effectiveness [4]. The authors postulate that a sitting physician may be perceived as more compassionate, whereas a standing physician may be perceived as more knowledgeable, competent, and effective. A patient’s perception of a physician’s compassion is associated with increased physical function, increased emotional health, and decreased physical symptoms [4,8]. Our study, a post-operative hospital-based pilot study at an academic medical center, could be expanded to include additional surgeons, other treatment settings, other types of surgeries, and different populations of patients and doctors.

The results of our analysis of patients’ *perceptions* of provider time at bedside compared to the *actual* provider time at bedside

can be generalized to other health care settings. These results may then lead to decreased litigation, decreased cost, increased referrals, improved compliance, and improved clinical outcomes in these other health care settings [2,3,6,7].

4.3. Practice implications

All healthcare providers on a patient’s care team should consider these findings while new ways of enhancing the patient care experience are being developed. Any healthcare provider has the power to have a positive effect on patient satisfaction with the quality of the visit [2]. Well-attuned providers can adapt their communication and interpersonal skills to different settings and patient cultures to improve the quality of the patient–provider interaction, which then may lead to improved clinical outcomes [5,9,16]. Waitzkin cautioned that providers or institutions may choose to sacrifice effective communication in order to achieve administrative efficiency and optimum patient volume [5,18], but our results show there is no need for this sacrifice. Providers will not need to fear losing time they believe they do not have, because actual time spent at bedside is not increased by sitting. This shift in perception accompanied by a shift in behavior (sitting instead of standing) will enable the provider to gain more perceived time without any actual cost, which in turn will enable the provider to be even more efficient and effective during patient interactions.

Conflict of interest

No financial support was received for this work, and there are no conflicts of interest.

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