Observer’s Perceptions of Nonclinical Touch during Physician-Patient Interaction

by

McKenzie Marie Vorpahl

September 1, 2018

A dissertation submitted to the faculty of the Graduate School of the University at Buffalo, State University of New York in partial fulfillment of the requirements for the degree of Doctor of Philosophy

Department of Communication
Acknowledgements

During these past four years pursuing a doctoral degree, a lot of life has happened. As the end/M-form is in sight, I have so many people to thank for helping me along the way. First, to my advisor, Dr. Lance Rintamaki: I cannot thank you enough for lying to me all those years ago about Buffalo weather being “not that bad”. Coming to Buffalo, New York has dramatically changed my life, and I owe that to you (after all, you did take me to Wegmans for the first time). As if on cue, you have always sent me cheering emails just when I needed them the very most. Thank you for taking a chance on me as an advisee, for always believing in me, and for making research and education endlessly entertaining. As an instructor and mentor, I just hope that I can be as generous and encouraging to my students as you have been to me.

To Dr. Janet Yang: There are simply not enough words to describe how wonderful you are. You truly make being a serious scholar and active mom look effortless – something I aspire to be more like every single day. Thank you for being hard on me when I needed the push, and for always believing that I could do great things. I appreciate all of your guidance, both professional and personal. I would not be where I am today without you.

I would also like to thank Dr. Thomas Feeley. In every interaction that I have ever had with you, I have always left laughing and thinking. You are the life of the party, but your insight has always inspired me to improve any project that I have worked on. Thank you for always going out of your way to help me achieve my goals.

Last (but certainly not least), thank you to my amazing family and friends for their help along the way. From helping me problem solve, letting me vent, even to watching my son so I could sneak away to study or write this dissertation, I am forever grateful. To my awesome husband, Matthew: Thank you for never letting me give up, no matter what. You are my best
friend, and greatest fan. Thank you for listening to me for hours as I repeatedly asked, “how does this paragraph sound?” and for cutting me some slack when I said, “this will only take me a couple of minutes to work on”. Of course, thank you to my sweet son for waiting until Winter Break 2016 to make your grand appearance into this world so that I did not miss any final presentations. Although I am pretty sure your first word was “data”, you have been such a trooper as I have needed to lull you to sleep with statistics books, or speed-work during your naps. Being your mom has motivated me to see this through because you, my dear, deserve the moon. This one is for you, kid.
Table of Contents

I. **Abstract** ........................................................................................................... viii

II. **Chapter 1: Introduction** ................................................................................ 1

III. **Chapter 2: Literature Review** .................................................................... 3
    A. Provider-Patient Communication ................................................................. 3
        1. Patient-Centered Care .............................................................................. 4
           a. Patient-centeredness and patient outcomes ........................................ 5
    B. Patient Perceptions ....................................................................................... 6
        1. Patient Satisfaction .................................................................................. 6
        2. Patient Experience .................................................................................. 8
    C. Nonverbal Communication in Medicine ..................................................... 10
        1. Nonverbal Immediacy ............................................................................. 14
           a. Immediacy as communicated support ................................................ 15
        2. Nonverbal Cues and Expectancy Violations ........................................... 16
    D. Study Objectives ......................................................................................... 17

IV. **Chapter 3: Methods** ................................................................................ 19
    A. Study Overview ............................................................................................ 19
    B. Stimulus Materials ...................................................................................... 20
    C. Analogue Patients ....................................................................................... 21
    D. Measures .................................................................................................... 22
        1. Patient Satisfaction ................................................................................. 22
        2. Patient Experience .................................................................................. 23
        3. Relational Communication Scale for Observational Measurement ....... 23
V. **Chapter 4: Results** ................................................................. 25
   A. Manipulation Check .............................................................. 25
   B. Experimental Effects ......................................................... 26

VI. **Chapter 5: Discussion** ..................................................... 28
   A. Implications ................................................................. 29
   B. Strengths and Limitations .................................................. 30
   C. Future Directions ............................................................ 33
   D. Conclusion ........................................................................ 34

VII. **Table 1** .......................................................................... 36

VIII. **Table 2** ........................................................................ 37

IX. **Table 3** ........................................................................... 38

X. **Table 4** ........................................................................... 38

XI. **Appendix A**: Patient Satisfaction Items ............................... 39

XII. **Appendix B**: Patient Experience Items .............................. 41

XIII. **Appendix C**: The Relational Communication Scale for
      Observational Measurement (RCS-O) .................................... 42

XIV. **Appendix D**: Demographic Variables ................................. 45

XV. **References** ....................................................................... 47
List of Tables

**Table 1:** Means and Standard Deviations of Nonclinical Touch on Patient Perceptions
(conservative sample, \( N = 258 \))………………………………………………………………………………36

**Table 2:** Means and Standard Deviations of Nonclinical Touch on Patient Perceptions (liberal
sample, \( N = 364 \))……………………………………………………………………………………………………37

**Table 3:** Binary correlations among key variables (conservative sample, \( N = 258 \))………………………………………………………………………………………………………………………38

**Table 4:** Binary correlations among key variables (liberal sample, \( N = 364 \))………………………………………………………………………………………………………………………38
List of Appendices

Appendix A: Patient Satisfaction Items ................................................................. 39

Appendix B: Patient Experience Items ............................................................... 41

Appendix C: The Relational Communication Scale for Observational Measurement (RCS-O) ......................................................................................................................... 42

Appendix D: Demographic Variables ................................................................. 45
Abstract

Of all the staff with whom patients communicate with, the physician is arguably the most important. When physicians communicate well, patients are more likely to acknowledge health problems, understand treatment options, and comply with medication regimens. Although what a physician communicates is important, how the information is delivered has the potential to alter a patient’s perceptions of the entire medical encounter. The goal of this study is to test the utility of a simple nonverbal behavior – a nonclinical touch – on patient perceptions of immediacy, subsequent patient satisfaction, and patient experience scores. A total of 394 participants were recruited as analogue patients to assess videos of a physician speaking with patients either using nonclinical touch at the end of the encounter or not doing so. No significant differences were found between the touch and no-touch groups. Implications are raised for the utility of touch in provider-patient interactions, as well as questions over whether or not analogue patients fully experience the impact of touch used by physicians, given that they are seeing and not feeling said touch. This study offers a host of methodological insights on how future research into clinical touch may be pursued.
The Impact of Nonclinical Touch on Observers’ Perceptions

CHAPTER 1

Introduction

“At a time of great changes in the technology and delivery of medical care, what is timeless and unchanging for patients and physicians is the human side of medicine, the nontechnical part” (Savett, 2002, p. xxv).

The patient experience can be thought of as a series of complex healthcare processes, each leaving a critical mark on a patient’s global perception of their care. These processes include calling for an appointment, checking in with a receptionist, providing information to a nurse, and communicating with the physician. However, of all the staff who come into contact with a patient, the physician is arguably the most important. Specifically, the interpersonal skills of a physician are critical in not only providing treatment to a patient, but ensuring a return visit, medication adherence, lessening malpractice risk, and the occurrence of sentinel events (e.g., Haynes, McDonald, & Garg, 2002; Hickson et al., 2002; Stewart, 1995; The Joint Commission, 2007).

Though providers are generally motivated individuals with high self-expectations and a desire to care for patients, health practitioners are facing additional pressures to improve patient experience ratings both by their employers and by the federal government. Considering that patients are increasingly more involved in choosing a hospital, health organizations are using publicly reported measures of satisfaction as a marketing tool for attracting patients and encouraging them to recommend the hospital to family and friends. Moreover, the United States currently utilizes the “Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS),” a standardized survey of patients’ perceptions of hospital care, to tie payment
THE IMPACT OF NONCLINICAL TOUCH

systems to quality outcomes. Essentially, top-percentiles for patient experience determine reimbursement metrics that a hospital will receive. Having to compete against amongst themselves, health organizations are mandated to improve their scorings each year in order to be eligible for government funding from major sources such as Medicare and Medicaid.

As most patients lack the technical knowledge to adequately judge physician skill and overall healthcare quality, they rely on familiar service clues, such as displays of warmth, acts of courtesy, respect, empathy, staff responsiveness, facility appearance, and provider communication skills when asked about their global experience (Berry & Bendapudi, 2003). Prior research echoes this, as better provider communication skills – not technical skills – have been significantly associated with higher ratings of overall quality of care (Chang et al., 2006). Simply, it is high-quality communication that distinguishes providers in today’s consumer healthcare marketplace. Consequently, researchers have explored a myriad of communicative behaviors – both verbal and nonverbal – that have potential to impact patient perceptions of quality care. Yet, many studies have yielded lukewarm results or even contradictory findings.

Considering the limited amount of time that a physician has to spend with a single patient, this proposal seeks to explore a simple nonverbal display of immediacy in efforts to improve patients’ perceptions of the physician. In its most basic form, does nonclinical touch increase patients’ ratings of physician immediacy?
CHAPTER 2

Literature Review

Provider-Patient Communication

In the span of a physician’s career, a doctor will communicate with more than 200,000 patients (Arnold, 2003). The effectiveness of these encounters is not only important for determining the quantity, quality, and accuracy of data the physician elicits, but essential for forging a therapeutic alliance, encouraging treatment adherence, and recruiting and retaining patients. When asked, many physicians say they communicate well with their patients. However, evidence suggests that physicians may be grossly overestimating their interpersonal skills. For instance, one study found that 98 percent of physicians thought they had adequately discussed patients’ fears and anxieties, while only 54 percent of patients agreed. Likewise, 77 percent of physicians thought that their patients knew their diagnosis, yet only 57 percent of those patients were able to correctly identify their diagnosis (Olson & Windish, 2010). Such discrepancies between physician perception and patient reality have the potential to not only negatively impact global quality of care evaluations, but also bear real implications for patient health outcomes.

The Joint Commission (2015) contends that communication is one of the root causes in more than 63 percent of sentinel event occurrences. These occurrences are defined as any unanticipated event unrelated to the natural progression of a patient’s illness that results in further injury or death, such as post-operative complication, medical error, delay in treatment, or patient suicide. In contrast, research has shown effective patient-physician communication can improve patient’s health as quantifiably as many pharmaceutical drugs in terms of symptom resolution and improved physiological and mental health statuses (e.g., Bull et al., 2002; Stewart, 1995). In a classic study of surgical patients, communication and rapport between
anesthesiologist and patient before surgery both reduced patients’ need for medication and shortened their hospital stay by 2.7 days on average (Egbert, Battit, Welch, & Bartlett, 1964). More broadly, a review of controlled trials on patient-physician communication found that the quality of communication in the history-taking and management-discussing portions of the medical encounter influenced patient outcomes in 16 of 21 studies. These outcomes included improved emotional health, symptom resolution, pain control, and physiologic measures such as blood pressure and blood sugar levels (for review, see Stewart, 1995). With the benefits of effective communication clearly evident, it is imperative that researchers continue to examine behaviors that improve the quality of care and the patient experience.

**Patient-Centered Care**

Whereas decades ago communication was considered a “soft skill” that reflected the personal styles of a physician, interpersonal communication skills are now viewed as a set of measurable and modifiable behaviors that can evolve. In the past two decades, training in patient-physician communication has become a core competency in various accreditation settings such as the United States Medical Licensing Examination, and the American Board of Medical Specialties’ certification (Duffey et al., 2004; Makoul, 2003). Additionally, physicians are routinely provided with feedback regarding their performance with patients, at times with direct financial and employment implications.

As the importance of communication skills in provider-patient relationships has become more visible in education and practice, a once autocratic infrastructure has shifted from a top-down process in which physicians tweak malfunctions in the human body, to a more holistic, partnered practice. Among the communication styles that have emerged in medical care, *patient-centered care* has become the paradigm for high-quality healthcare. Patient-centered care
emphasizes shared decision-making and information sharing, understanding the patient as a whole person, exploring a patient’s personal illness experience, and focusing on the interpersonal relationship between the patient and physician (Fortin, Dwamena, Frankel, & Smith, 2012; Stewart et al., 2003). Unlike clinician-centered care, patient-centered care is intended to strengthen the doctor-patient relationship through effective communication, concern, empathy, and reassurance (Stein, Frankel, & Krupat, 2005). As stated by Epstein and Street (2011),

Helping patients to be more active in consultations changes centuries of physician-dominated dialogues to those that engage patients as active participants. Training physicians to be more mindful, informative, and empathic transforms their role from one characterized by authority to one that has the goals of partnership, solidarity, empathy, and collaboration. Systems changes that unburden primary care physicians from the drudgery of productivity-driven assembly-line medicine can diminish the cognitive overload and exhaustion that makes medical care anything but caring or patient-centered (p. 101).

With the growing support for patient-focused healthcare, researchers have begun to examine the impact of patient-centeredness on patient outcomes.

**Patient-centeredness and patient outcomes.** An extensive body of literature has described and advocated for a patient-centered approach to medical care due to its connection with positive health outcomes (e.g., Franks et al., 2006; Henbest & Stewart, 1990; Radwin, Cabral, & Wilkes, 2009; Stewart et al., 2000). Findings indicate that this practice style is associated with lower primary care charges, less need for diagnostic tests and external referrals, and overall decreased health care utilization (e.g., Bertakis & Azari, 2011; Epstein et al., 2005; Stewart et al., 2000). As a potential explanation, patients may experience a reduction in anxiety
and an increase in physician trust when they actively participate in their own care and feel that their physician understood and cared about their symptoms (Fiscella et al., 2004; Stewart et al., 2000).

As patients perceive better quality of care from improved communication, this study focuses on patient perceptions as a major determinant for quality care assessments. First, this study highlights two conceptual outcomes: the classic patient satisfaction and the current patient experience measures.

**Patient Perceptions**

With a shift towards active patient participation, patient perceptions have gained greater significance for providers, policy makers, and researchers. Specifically, patient feedback is one aspect of patient-centeredness that is increasingly gaining attention as a useful component of the quality improvement process (Verbeek et al., 2001). Reviewed evidence contends that patient-focus is critical on a myriad of health outcomes, thus, deserving of further investigation; however, our understanding of patient perceptions of healthcare quality is riddled with poor conceptualizations and gaps in understanding and utilization. Thus, the purpose of this review is to first address conceptual issues, summarize what is currently known, and lastly, propose a new study on patient perceptions. Specifically, the two main examples of patient perceptions – patient satisfaction and patient experience – will be discussed.

**Patient Satisfaction**

Patient satisfaction is perhaps the most commonly studied outcome in the healthcare literature. Satisfaction can be defined as fulfilling expectations, needs, or desires of a given patient (Sitzia & Wood, 1997). Yorkston and colleagues (2007) suggest the use of satisfaction as an effective patient feedback tool as it allows for subjective expression of individual opinion. Studies of satisfaction have contributed to our understanding of how patient perceptions affect
behavior. For example, studies have shown that patients who report greater satisfaction with their care are more positive, adherent to medical regimen more, have higher levels of understanding and recall, and are more likely to return for follow-up appointments (Haynes, McDonald, & Garg, 2002; Roter, Hall, & Katz, 1987; Stewart, 1995). Comparatively, less satisfied patients are more likely to be noncompliant, terminate care early, seek alternative healthcare providers, and pursue malpractice lawsuits (Donabedian, 1988; Hickson et al., 2002; Kasteler, Kane, Olsen, & Thetford, 1976; Stelfox, Gandhi, Orav, & Gustafson, 2005). Additionally, satisfaction may be an important indicator for direct health outcomes, such as pain and complication rates. To exemplify, among a sample of post-surgical patients, greater dissatisfaction was significantly associated with increased post-operative pain and complications (Myles, Williams, Hendrata, Anderson, & Weeks, 2000).

To examine the association between satisfaction and health behavior outcomes, considerable effort has gone into developing survey instruments to measure patient satisfaction. In general, instruments have served two functions: first, in research studies in which patient satisfaction is considered to be the outcome, either to assess the value of a new intervention or to identify patient characteristics that may influence evaluations of quality; second, by hospitals and providers to gauge an individual’s satisfaction with utilized services. However, most reviews of the literature have been critical of its use, stating that patient satisfaction remains poorly theorized and lacks a clear, universal definition. In addition, measures have little standardization, low reliability, and uncertain validity (Aspinal, Addington-Hall, Hughes, & Higginson, 2003; Crow et al., 2002; Gill & White, 2009).

Moreover, scholars have argued that patient satisfaction is merely a measure of affect – or how happy a patient is generally – and the subjective nature of the questions makes feedback
from the measures difficult to translate into quality improvement projects. For example, patients may report being satisfied even if they feel there were problems with the care they received (Epstein, Laine, Farber, Nelson, & Davidoff, 1996). These patients may still identify factors that they do not consider optimal, but explain as necessary compromises to their stay, and therefore, not impactful on perceived satisfaction ratings (Sorlie, Torjuul, Ross, & Kihlgren, 2006).

Additionally, scholars contend that satisfaction is based on the difference between expectations and what actually occurs, satisfaction ratings may vary considerably on an individual level. Specifically, a person with high expectations for their quality of care may indicate less satisfaction than a person with a lower baseline expectation receiving the same care (Kravitz, 1996; Thompson & Sunol, 1995).

As a final criticism to patient satisfaction measures, Nguyen, Attkisson and Stegner (1983) state that the lack of standardized instruments makes it difficult to draw meaningful comparisons between different satisfaction scales. Although flawed, it is important to remind the reader that patient satisfaction surveys are still associated with higher ratings of quality healthcare. However, the drawbacks have led to a shift in assessing quality of care with *patient satisfaction* to assessing quality with ratings of *patient experience*.

**Patient Experience**

Patient experience is increasingly recognized as one of the three pillars of quality healthcare alongside clinical effectiveness and patient safety (Institute of Medicine, 2001). The inclusion of patient experience requires little justification as its intrinsic value – the expectation of humane, empathic care – only increases clinical effectiveness and safety (e.g., Berwick, 2009; Coulter, 2011; Street et al., 2009; Thom, Hall, & Pawlson, 2004; Vincent & Coulter, 2002). Similar to patient satisfaction, patient experience is linked to greater clinical care, reduced
medical error, adherence to recommended clinical practice and medication, preventative care, and resource utilization (for review, see Doyle, Lennox, & Bell, 2013). Although often used interchangeably, patient satisfaction is more affective in nature, while patient experience assesses the process-related aspect of care.

Furthermore, patient experience seeks to overcome pitfalls of its counter by asking specific questions that minimize the subjectivity and confounding of patient expectations (Rosenthal & Shannon, 1997). To exemplify, one study reported that lay people would prefer to know specific aspects of other patients’ experiences, instead of overall satisfaction ratings. That is, perspective consumers would rather know how long a patient waited instead of how satisfied they were with their wait time as they might have different thresholds for acceptability (Edgman-Levitan & Cleary, 1996).

Considering the limitations of using a patient satisfaction measure to evaluate quality of care, organizations have made the shift to well-designed survey instruments that direct patients to report their experiences rather than their feelings. The Hospital Consumer Assessment of Providers and Systems (HCAHPS) was developed by the Centers for Medicare & Medicaid Services (CMS) together with the Agency for Healthcare Research and Quality (AHRQ) as the first national, standardized, publicly reported survey of patients’ perspectives of inpatient hospital care. The survey is utilized to tie reimbursement funding to quality of care improvements, provide consumers with objective and meaningful comparisons among hospitals, and increase transparency in quality of hospital care.

For physicians, especially, the demand to increase patient perceptions of quality of care is critical. As part of the HCAHPS survey, doctors are evaluated by patients on three items: (1) their demonstration of courtesy and respect, (2) how carefully they listen, and (3) how well they
explain things to patients. Each of these items mirrors research findings of common types of patient complaints regarding provider behaviors (e.g., Kennedy, Nordrum, Edwards, Caselli, & Berry, 2015; Wofford et al., 2004). With approximately 38 percent being the median for dissatisfied hospital patients (Ong, De Haes, Hoos, & Lammes, 1995), descriptive and experimental research has attempted to shed light on the communication processes of the physician-patient interaction, with hopes of improving medical consultation.

Although the patient experience score is standardized and well-incorporated into medical practice, academics have been slow to adopt this measure into research. Several studies have reported associations between higher patient experience ratings and positive health outcomes, but few studies have examined communication behaviors that increase these ratings. With so little known about the specific behaviors that drive these scores, this study seeks to test a disputed behavior as an act of physician immediacy, with the potential to increase patient satisfaction and patient experience ratings.

**Nonverbal Communication in Medicine**

For physicians, communicating patient-centeredness goes far beyond what is communicated verbally. Physicians are tasked with not only gathering information to make a medical evaluation, but also attending to the socio-emotional portion of the interaction. The latter process being heavily dependent on nonverbal competency. In fact, only seven percent of affective communication is conveyed verbally, whereas nearly 55 percent is conveyed nonverbally through visual cues such as eye contact and body positioning, and 22 percent is transferred by one’s tone of voice (Bensing, 1991). Patients especially may find themselves in a state of hyper-awareness during medical interactions as they search for any information regarding their diagnosis, the severity, or complexity of their state of health. This may lead to patients relying on a physician’s nonverbal behaviors to a greater extent than during
commonplace conversations. As the focus of this proposal, nonverbal communication is to be thought of as not only a conveyer for leaked information, but instead as a simple tool that an already busy physician can incorporate into their everyday practice. Specifically, we emphasize the potential for nonclinical touch, or social expressions, to increase patient’s perceived centrality.

The ability to understand and use nonverbal behavior is a powerful instrument that can help healthcare professionals connect with patients emotionally and reinforce mutual understanding and respect. Friedman (1979) explains that patients are remarkably sensitive and observant of nonverbal communications conveyed by their physician due to being in a state of heightened fear, anxiety, and uncertainty. Additionally, patients are in a one-down power relationship with physicians as occupational authority is unevenly distributed, leaving patients vulnerable and hyper-cognizant of any signals that they are liked or disliked (Rintamaki & Brashers, 2010). The meaning of a slight grimace, a comforting touch, or an expression of fear from a physician may all be interpreted by a patient, potentially without conscious effort. In fact, Griffith and colleagues (2003) found nonverbal communication skills to be an independent predictor of standardized patient satisfaction. In their findings, nonverbal communication skills accounted for 32 percent of the variance in patient satisfaction for a medical scenario involving chest pain, 23 percent for a depression-abuse scenario, and 19 percent for a more communicatively complicated HIV counseling scenario. Interestingly, the authors found that patient satisfaction was strongly associated with more emotionally expressive nonverbal behavior scores of physicians across medical conditions. That is, patients desired and responded more favorably to physicians who were generally more nonverbally expressive.
It is important to note that not all nonverbal cues are created equal – or so the research contends. Nonverbal communication has been operationalized in many different ways, yet the impact of even subtle cues is underscored in the literature. Previous researchers have examined behaviors such as tone of voice, eye contact, proximity, and touch as factors that impact patient perceptions. For example, frequent eye contact between physician and patient has been shown to improve patient satisfaction ratings (e.g., Bensing, 1991; Griffith, Wilson, Langer, & Haist, 2003). In contrast, for surgeons, ratings of higher dominance and lower concern in tone of voice significantly identified surgeons with previous malpractice claims (Ambady et al., 2002).

When it comes to the usage of haptics, or touch, in medical consultations, the results quickly become hazy. Medical practitioners are well trained in clinical touch, such as to palpate, poke, feel, or otherwise touch a patient for the purposes of diagnosis. Patients have come to anticipate such instrumental touch as necessary for proper examination. Whereas nonclinical, social touches, such as a handshake or a pat-on-the-back, may not always be expected by a patient and convey different meaning from a clinical touch.

Nonclinical touch may significantly impact the medical encounter; however, the literature is mixed as to when and how various forms of nonclinical touch are desired, and the impact social touch may have on patient perceptions. Evidence illustrates how touch may be a useful tool in encouraging compliance and reducing anxiety. For instance, in caring for elderly adults, a major cause of illness and complications is inadequate nutrition due to poor eating behaviors. One study reported that when verbal encouragement to eat was accompanied with a gentle touch, patients were significantly more likely to comply (Eaton, Mitchell-Bonair, & Friedman, 1986). Additionally, patients undergoing flexible bronchoscopy procedures frequently feel anxiety before and during the procedure. Researchers found that when the performing staff
pulmonologist used verbal empathy and touch (laying his/her left hand on the patient’s right shoulder) before the procedure, patients with high baseline anxiety levels showed reduced anxiety (Choi et al., 2016).

Furthermore, Makoul, Zick, and Green (2007) found that the majority of patients (78%) want to shake hands with their physician during ritualized greetings, a behavior that most physicians (82.9%) routinely perform (Makoul et al., 2007). A study in Pakistan found that many patients desired social touch on their shoulder from doctors as a way to convey comfort, support, respect and healing (Khan et al., 2014). Likewise, a study of Chilean patients found that being touched by a physician was associated with perceptions of good care (Scarpaci, 1988). Given the mounting evidence of myriad benefits of nonclinical touch, authors from the StuderGroup recommend the use of appropriate nonclinical touch from practitioners as a way to convey interest and comfort; thus, potentially increasing patient experience ratings (Ketelsen, Cook, & Kennedy, 2014).

Nevertheless, nonclinical touch in medical encounters is not a panacea, as some research suggests nonclinical touch can have no effect on or even lower patient satisfaction scores (e.g., Larsen & Smith, 1981; Street & Buller, 1987; Weinberger, Greene, & Mamlin, 1981). As a general criticism to this body of work, conceptualizations of social touch are vague, if not nonexistent. For instance, Larsen and Smith (1981), a frequently cited article in the literature, found that touch led to lower ratings of patient satisfaction. To arrive at this conclusion, the researchers coded for the presence or absence of touch without ever considering type, placement or duration. Therefore, it is uncertain whether the touch occurring in their analyses was a brief, comforting touch below the knee when leaving an encounter or a lingering caress on the thigh during an exam. As touch can be highly contextual, this oversight warrants further examination.
without dismissing the potential value of nonclinical touch in affecting outcomes during physician-patient communication.

**Nonverbal Immediacy**

Although more research is needed to explore the impact of nonclinical touch on patient satisfaction and experience, evidence exists to support a positive relationship between nonverbal immediacy and patient perceptions. According to the Mehrabian classification (1969, 1971, 1972), immediacy is defined as the degree of “closeness” of two persons during an interaction, stating that immediacy behaviors could reduce distance between communicators. Andersen (1979) first broadened the concept of immediacy to instructional communication studies by introducing the construct of nonverbal immediacy as “the nonverbal behavior manifestation of high affect” (p. 545). These nonverbal immediacy behaviors can be defined as non-spoken interpersonal messages that show signals for communication and can convey emotion and warmth, availability, and openness (Andersen, Andersen, & Jensen, 1979; Andersen & Andersen, 1982).

Notably, five nonverbal behaviors serve as a function of immediacy: touch, distance, forward lean, observation, and body orientation. Of interest to this study, touch refers to the bodily contact between a communicator and his/her addressee. Although immediacy has been studied predominately in the context of instruction, several studies have linked immediacy in health care to increased attention and sharing, interpersonal connection, trust, and caring (Conlee, Olvera, & Vagim, 1993; Hill et al., 2014; Kreps & Neuhauser, 2013).

As a composite measure, nonverbal immediacy has been found to correlate with high ratings of patient satisfaction (e.g., Conlee, Olvera, & Vagim, 1993; Larsen & Smith, 1981; Richmond, Smith, Heisel, & McCroskey, 2001). Although touch on its own has not yielded the
same results, it is reasonable to infer that, if used appropriately, touch could have the ability to comfort an anxious patient or signal a sense of partnership and affiliation between the patient and provider.

**Immediacy as communicated support.** As part of patient-centered care, physicians are expected to share information and decisions, but also listen to patients and demonstrate empathy. Although physicians easily recognize the need for such communicative behaviors, in a hurried environment they may not adequately employ interpersonal skills. For example, Morse and colleagues (2008) found that, without training, doctors took advantage of less than 10 percent of opportunities to convey empathy. Empathy – an emotion theoretically and empirically linked with patient-centeredness and patient satisfaction (Montague et al., 2013) – is a conscious behavior, and takes virtually no time, which may indicate a lack of physician awareness of the affective, human side of medicine.

Across communication literature, haptic behaviors are often described as nonverbal actions associated with comforting messages. Nonverbal behaviors such as eye contact and social touch (e.g., handshake, hug) between clinician and patient have been found to positively influence patient’s assessment of clinician’s empathy (Montague et al., 2013). Historically, such touch conveys immediacy, trust, receptivity and affection (Burgoon, 1991; Mehrahian, 1971; Thayer, 1988). In fact, across relational communication research, the absence of touch may communicate greater detachment (Burgoon, Buller, Hale, & de Turck, 1984). When the goal of healthcare is patient-centeredness, missed opportunities to connect with patients via empathy displays or comfort and support can negatively impact the provider-patient relationship.
Nonverbal Cues and Expectancy Violations

Evidence resulting from investigations of touch in medical encounters has produced a somewhat conflicting view of patient/physician interactions. What is clear, however, is that patients desire physicians who communicate warmth and empathy – a description consistent with nonverbal immediacy. It is our contention that a violation of expectations model of nonverbal communication provides a useful framework for explaining the potential for touch to increase perceived immediacy, and ultimately, produce higher ratings of patient satisfaction and experience.

Expectancy Violations Theory (EVT; Burgoon, 1993; Burgoon & Jones, 1976) seeks to explain the unexpected nonverbal behaviors of humans during interactions. The theory posits that while communicating, individuals hold expectations about the nonverbal behaviors of others. Violations of one’s expectations – such as an unexpected touch or change in proximity – may trigger arousal, leading the individual to evaluate the violation either positively or negatively. EVT makes the counterintuitive claim that violations of expectations are sometimes preferable to met expectations.

Burgoon and Hale (1988) state: “Given the frequency with which we encounter others who deviate from expected behaviors in their daily transactions, it becomes an important communication issue to determine if and when such violations have favorable as opposed to detrimental consequences. The rise in interest in strategic communication behavior and communication competence also endorses the value of examining how violations may be used as strategic, goal-attaining acts” (p. 58).

Notably, when extending the model domain to immediacy violations, researchers found that high immediacy violations (e.g., forward lean, decreased proximity) produced high ratings
of intimacy, similarity, and involvement for interactions with both strangers and friends. In the contrary, non-immediacy behaviors (e.g., increased social distance, closed off body language) were interpreted as detachment, dissimilarity, and lower credibility (Burgoon & Hale, 1988).

Studied within educational settings, research has established that the nonverbal component of immediacy may have a larger impact on student learning than the verbal component (Christophel, 1990). Specifically, nonverbal immediacy violations like touch may be valuable in predicting and explaining student evaluations of instructors’ capabilities, friendliness and interest (e.g., Lannutti, Laliker, & Hale, 2001; Stewart & Lupfer, 1987). Although nonverbal immediacy violations have not been studied within the context of medicine, it is logical to presume that touch may not be intrinsically negative. Rather, touch may function as a physician immediacy behavior, impacting patient perceptions. Future studies are warranted to investigate this possibility.

In brief review: Patient-centeredness refers to treating a patient holistically by treating both their biological ailments and their affective outlook. Of import to this study, we focus on a patient-centered nonverbal cue – nonclinical touch – as a tool for increasing ratings of physician immediacy. As healthcare funding agencies are increasingly relying on patient experience metrics to determine quality, we offer nonverbal immediacy as a crucial concept for actualizing patient satisfaction and experience perceptions.

**Study Objectives**

As reviewed, nonverbal immediacy is a measure of interpersonal affect. Although nonverbal immediacy has only recently debuted in healthcare, immediacy has been shown to positively impact perceptions of connectedness and caring in dyads. The utility of nonverbal cues, such as touch, have been heavily debated across literatures, creating a need for the
following controlled experiment. As touch has been conceptualized as a behavior with the potential to alleviate anxiety, promote comfort and interpersonal closeness, we anticipate the following relationships for touch on nonverbal immediacy:

\[ H_1: \text{A nonclinical touch from the physician during the closing of a medical interaction will result in higher ratings of immediacy.} \]

Furthermore, physicians who are perceived to be greater in immediacy are commonly associated with higher ratings of patient satisfaction. Hence, we expect increased physician immediacy to positively impact patient perceptions.

\[ H_2: \text{Immediacy will be positively related to both patient satisfaction (H}_{2a} \) and patient experience scores (H}_{2b}. \]
CHAPTER 3

Methods

Study Overview

The purpose of this research is to find a simple, nonverbal behavior that can be easily implemented by physicians in hopes of increasing nonverbal immediacy, as well as subsequent patient ratings of satisfaction and physician-related experience scores. This study used three trained actors to video record a hospitalized patient-physician interaction. Four videos were created, using a male and a female patient, alongside the same male physician. The actors utilized the same script in four: Two experimental conditions (one with the male patient and one with the female patient), in which the physician utilizes a nonclinical touch (i.e., a light touch on the knee), and two control conditions with both gendered patients, which are void of any nonclinical touch. Outside raters were recruited through an online survey mechanism (Amazon Mechanical Turk) then assessed the levels of physician immediacy in the scenarios, as well as serving as analog patients to assess patient satisfaction and experience.

Although the gold standard for evaluating nonverbal communication is direct observation of clinical interactions, it is important to note that these observations are often intrusive and resource intensive (Jones & LeBaron, 2002). Further, the employed method allows for strict researcher control over natural variances that occur in real time observations that may otherwise confound outcomes, as well as overcoming ceiling effects common in clinical patient research (e.g., van Vilet et al., 2012). Following precedence set by Hall and colleagues (2015), participants watched one of two physician portrayals and served as analogue patients reacting to the physician. The analogue patient method has received validation as an alternative to real patients when assessing patient satisfaction, patient-centered behaviors, and other evaluations of
clinical communication (Blanch-Hartigan, Hall, Krupat, & Irish, 2013; van Vliet et al., 2012).

The overarching hypothesis is that participants in the treatment condition will evaluate the interaction more favorably, indicating higher levels of nonverbal immediacy, patient satisfaction and experience scores.

**Stimulus Materials**

The stimuli are scripted video-vignettes, showing a physician and a hospitalized patient interacting from three angles. As mentioned, the videos feature a male and a female patient, separately, interacting with a male physician. The physician – a practicing medical doctor – is wearing a white coat and speaks to the patient in a naturalistic manner. The patient is shown sitting up in a hospital bed, wearing a hospital-issued gown. The interaction involves a physician discussing a patient’s sepsis and desire to leave the hospital, and lasts seventy-five seconds.

The nonclinical touch occurs in the final phase of the medical encounter when the physician explains his availability and encourages the patient to call for him should the patient have any further needs. The conclusion of clinical encounters has received limited attention, and is important for establishing lasting impressions that could impact adherence, return, and overall perceptions. As described, the clinician briefly touches the patient’s knee during concluding remarks of the medical interaction in the experimental groups.

To create groups for comparison (stimulus versus control), three camera angles were used during filming. This process allowed video editing to seamlessly alter only the last scene with the touch/no touch, leaving the remainder of the videos identical in all versions. Simply, the stimulus video shows an ending that includes the nonclinical touch, whereas the control video do not include any form of touch during the same verbal concluding remarks. Participants were
randomly assigned into viewing conditions (one out of four), and instructed to watch the video until the end.

**Analogue Patients**

Analogue patients (APs) are defined as untrained viewers given the task of rating their perceptions of a medical interaction. The APs are asked to imagine or pretend that they are the patient in the scenario while viewing or evaluating a provider (Blanch-Hartigan, Hall, Krupat, & Irish, 2013). The AP method has been used to assess providers’ communication and overall satisfaction with care, among other variables (Blanch et al., 2009; Mazor et al., 2005). Furthermore, AP responses have been correlated with objectively measured outcomes, such as patient-centeredness (Blanch-Hartigan et al., 2010). In a validity study of analogue patients as proxies in practitioner-patient communication research, van Vilet et al. (2011) posit APs’ “evaluations of communication equaled clinical patients’ perceptions, while overcoming ceiling effects” (p. 1528).

Using the analogue patient approach, participants \( N = 394 \) were recruited using Amazon’s Mechanical Turk (MTurk), a crowdsourcing Internet marketplace used to coordinate anonymous human participants. In efforts to recruit quality participants, parameters restricted participants to only site-labeled ‘Masters’. Additionally, monetary compensation was provided only to participants who completed the entire survey. Institutional review board approval (IRB) was obtained prior to data collection.

Participants ranged in age from 20 to 69 \( (M = 38.3, SD = 10.52, \text{median} = 36) \). The majority of participants were White (76.1%) and Asian (15.1%). Over half the participants had a college degree or more than a four-year college degree (45.9% and 8.5%, respectively), with only three participants having never completed high school.
Further, of the sample, only eight participants reported being in poor overall health, and 15 participants reported being in poor overall mental or emotional health. Most participants either reported being in very good (36.3%) or good (33.5%) overall health, and very good (34.3%), good (26.6%), or excellent (23.1%) overall mental or emotional health. It is important to reflect on these findings as compromised health may lead to participants negatively evaluating even the best of care. Particularly, research has shown a significant decline in HCAHPS scores in patients identified in severely depressed patients (Ketelsen, Cook, & Kennedy, 2014). As a precaution, analyses were conducted to test for any differences due to health condition; however, no differences were found. Specifically, neither overall health $F(3, 360) = 1.52, p = .21$ nor mental health status ($F(3, 360) = 1.80, p = .15$) impacted patient experience scores.

After consenting to participation, analogue patients (APs) were instructed with the following message:

“In today’s experiment you will be watching a visit between a doctor and a hospitalized patient. Only watch the video once. Afterwards, you will rate the doctor’s interaction with the patient. We want you to imagine you were the patient and rate how you would feel about the doctor and his interaction with you. It’s important that you watch the (short) video all the way to the end.”

Following this message, the APs were randomly distributed into one of four conditions (two with touch and two without touch).

**Measures**

**Patient satisfaction.** Analogue patients evaluated overall patient satisfaction using one global satisfaction item ($M = 1.86$, $SD = .06$), and two functions of satisfaction. All items were measured on a seven-point Likert scale ranging from 1 ‘extremely satisfied’ to 7 ‘extremely
unsatisfied’. Specifically, patient satisfaction of technical skills was measured by seven items (α = .96, M = 1.71, SD = .05), including satisfaction regarding the “doctor’s ability to diagnose.” Patient satisfaction with the physician’s communication skills were measured using seven separate items (α = .93, M = 2.19, SD = .06), exemplified by statements such as “the doctor empathized with me or felt concern for me.”

**Patient experience.** Next, three items from the aforementioned HCAHPS survey were used to assess patient experience (α = .69, M = 1.43, SD = .55). Response categories ranged from 1 ‘strongly disagree’ to 5 ‘strongly agree’. This measure was modified for a single physician interaction, while still capturing the essence of patient experience. The three items target the occurrence of certain behaviors and processes that patients have determined to be most important: Courtesy and respect, physician listening, and physician explanation leading to patient understanding.

**The relational communication scale for observational measurement.** The relational communication scale for observational measurement (RCS-O; Gallagher, Hartung, & Gregory, 2001) is an adaptation of Burgoon and Hale’s (1984) relational communication scale. The RCS-O, modified for this study, includes 19 items (α = .939, M = 2.73, SD = .05). Response categories ranged from 1 ‘strongly agree’ to 7 ‘strongly disagree’. Specifically, the RCS-O examines third-party observations of doctor-patient interactions on six dimensions. However, only three dimensions were considered relevant for inclusion in this study. Together, immediacy/affection (α = .90, M = 2.66, SD = .06), similarity/depth (α = .88, M = 3.54, SD = .07), and receptivity/trust (α = .89, M = 2.16, SD = .05) are referred to as a measure of intimacy. Of greatest import, immediacy was measured using eight items, such as the reverse-coded statement “the physician
communicated coldness rather than warmth.” As the primary interest to this research, immediacy was analyzed separately, as well as part of the intimacy composite ($\alpha = .94, M = 2.73, SD = .94$).
CHAPTER 4

Results

Manipulation Check

A series of analysis of variance (ANOVA) tests were performed to check the success of random assignment. No significant demographic differences (health status, education, and ethnicity) were detected. Thus, random assignment was successful.

To ensure that participants fully attended to the stimulus video, this study employed two different manipulation check strategies. In the first, more conservative, manipulation check observers were asked about the placement of physician touch. Participants selected one of the following: (1) the physician touched the patient on the head, (2) the physician touched the patient on the shoulder, (3) the physician touched the patient on the knee, and (4) the physician did not touch the patient. This exclusion criteria allowed only participants who fully attended to the nonverbal stimulus, or lack thereof, to be meaningfully compared. Subsequent analyses only included participants who accurately answered the question in relation to their assigned condition ($N = 258, 65.5\%$).

In the second, more liberal, manipulation check participants were asked if the patient was ultimately discharged from the hospital or remained in the hospital as a result of the conversation between the physician and patient. As the conversation was centered on this one question, only participants who correctly answered (“the patient remained in the hospital”; $N = 364, 92.39\%$) were included in subsequent analyses. This criteria for exclusion was utilized to explore the possible that, although participants may not have been overtly aware of the administered touch, nonclinical touch could have still influenced their impression about immediacy, satisfaction and experience. Data analyses using both manipulation checks are included below.
Experimental Effects

To explore the impact of social touch on patient perceptions, a series of t-test analyses were conducted. As previously mentioned, four video conditions were created using two different patient actors. However, participants did not respond differently based on the gender of the patient, an initial concern of the researcher. Specifically, participants from conditions featuring a male patient ($n = 182, M = 2.65, SD = 1.10$) or female patient ($n = 182, M = 2.67, SD = 1.10$) did not rate physician immediacy differently, $t(362) = -0.19, p = .85, d = .02$. Thus, two groups were compared (touch versus no touch) in further analyses (see Table 1 and Table 2 for group comparisons).

H1 predicted that a nonclinical touch from the physician during the closing of a medical interaction would result in higher ratings of immediacy. Results using the conservative exclusion criteria were not significant, $t(256) = -0.38, p = .71, d = .04$. Thus, analogue participants in the touch condition ($n = 97, M = 2.58, SD = 1.18$) did not perceive greater physician immediacy than analogue participants who were not in the touch condition ($n = 161, M = 2.63, SD = 1.07$).

Similarly, results from the more liberal manipulation check also did not demonstrate a significant relationship between nonclinical touch and ratings of immediacy, $t(362) = -1.14, p = .26, d = .12$. Again, analogue participants in the touch condition ($n = 192, M = 2.72, SD = 1.10$) did not perceive greater physician immediacy than analogue participants who were not in the touch condition ($n = 172, M = 2.59, SD = 1.06$) as hypothesized.

More broadly, results revealed that nonclinical touch was not a significant predictor of greater perceptions of intimacy, $t(256) = -0.20, p = .84, d = .03$. Hence, analogue participants in the touch condition ($n = 97, M = 2.71, SD = 1.08$) did not perceive greater intimacy than participants who were not in the touch condition ($n = 161, M = 2.74, SD = .94$). This finding was
echoed with the more liberal sample, $t(362) = -0.73$, $p = .47$, $d = .07$. Analogue participants did in the touch condition ($n = 192$, $M = 1.45$, $SD = .55$) did not perceive greater intimacy than those in who were not in the touch condition ($n = 172$, $M = 1.43$, $SD = .54$).

H2 posits that immediacy will be positively related to both patient satisfaction and patient experience scores (see Table 3 and Table 4). Results indicate a significant, moderate positive correlation between immediacy and overall patient satisfaction ($N = 258$, $r = .47$, $p < .001$; $N = 364$, $r = .51$, $p < .001$). Further, there was a significant strong positive correlation between immediacy and patient experience ($N = 258$, $r = .66$, $p < .001$; $N = 364$, $r = .66$, $p < .001$).

Considering the strength of correlations between dependent variables, a MANOVA was performed to assess the impact of touch to patient perceptions (i.e., immediacy, patient satisfaction and patient experience). There was no significant difference between the touch and no touch conditions on the combined dependent variable patient perceptions, $F(1, 256) = .41$, $p = .84$; Wilks’ Lambda = .99, partial $\eta^2 = .01$. 
CHAPTER 5

Discussion

The aim of this study was to identify a simple nonverbal behavior that could be utilized to convey physician immediacy to hospitalized patients. Specifically, this research examined whether a brief touch to the knee of a hospitalized patient would lead analogue patients to perceive higher ratings of immediacy, as well as related patient satisfaction and patient experience scores. Ultimately, results did not yield a significant interaction between nonclinical touch and physician-related immediacy. Further analyses also explored the impact of nonclinical touch on patient satisfaction and patient experiences scores. These results were also not significant.

The second hypothesis was supported, showing a positive relationship between immediacy and patient satisfaction, as well as between immediacy and patient experience. This finding suggests that immediacy may be a useful concept in shaping communication encounters with patients. That is, patients may be more satisfied with physicians who are rated as more immediate. Similarly, physicians who are perceived to be more immediate may have higher patient experience ratings. Prior research echoes our findings as physician immediacy has previously been correlated with overall patient satisfaction (e.g., Conlee, Olvera, & Vagim, 1993; Larsen & Smith, 1981; Richmond et al., 2001). Additionally, higher levels of satisfaction have been linked to better care experiences (e.g., Jha, Frye, & Schlimgen, 2017).

Unique to our study, however, is the strong relationship between immediacy and patient experience scores. Although often used interchangeably, patient satisfaction is a measure of contentment based on the perceived quality of healthcare received by a patient, whereas patient experience is a more task-related measure. Comparably, patient experience is a newer line of
research where patient satisfaction has been extensively researched in the past. Considering the significant relationship between patient satisfaction and experience alongside the relationship between immediacy and patient experience, it seems likely that patients rely on affect even when responding to process-related metrics. As previously mentioned, patients often lack the schema needed to evaluate medical information and technical skills and, instead, rely on familiar cues such as affect to evaluate medical encounters.

**Implications**

Today, traditional processes are being challenged because patient outcomes have become the basis for healthcare reimbursements and incentives. A recent report states that U.S. hospitals that achieve “superior” patient experience ratings net margins that are, on average, 50% higher than those of hospitals reporting “average” patient experience rankings (Francis, 2016). With a national spotlight on improving patient perceptions, understanding factors that maximize patient experience scores matter now more than ever.

Considering decades of empirical evidence linking effective communication to improved health care outcomes, including improved patient perceptions, it is necessary for scholars and practitioners alike to continue researching and training medical professionals in patient centered communication. As patient centeredness emphasizes the relational connection between patient and provider, training in immediacy may be an important addition to medical education. Although immediacy is relatively new to health care-related contexts, immediacy has been shown to improve the connection between patients and physicians, with patients working more closely to achieve important health goals (Kreps & Neuhauser, 2013). Such behaviors go beyond information exchange such as what is taught for effective medical interviewing and enter a socio-emotional aspect of care that humanizes the medical experience for patients and physicians.
It is important to note that communication is a modifiable skill that is simple for physicians to develop, hone, and incorporate into encounters with patients and families. In previous research, communication skills training interventions for healthcare practitioners have been shown to be effective in improving providers’ communication with patients, leading to an increase in patient satisfaction scores (e.g., Lau, 1999; Kennedy, Caselli, & Berry, 2011). As patients are increasingly being viewed as consumers of health care, medical professionals and organizations only stand to benefit from improving the communication skills of anyone who interacts with patients.

**Strengths and Limitations**

Several strengths to our study must be kept in mind when interpreting our results. First, this study utilized analogue patients to strictly control the interaction between patient and physician. Video editing allowed standardization across all four videos as the physician’s medical rationale was the same in all groups. Additionally, to head off the possibility that participants evaluated the interaction differently between gender concordant and gender discordant groups, this study featured both a male and female patient in each stimulus condition. Analyses revealed that participants did not respond differently based on the gendered dynamic of the interaction. Thus, conditions were simplified to compare touch versus no touch interactions. As a possible oversight in this study, information regarding participant gender was not collected. Although the gender of the patient did not influence results, it is possible that the gender of a participant could have impacted their perceptions of the medical encounter.

Although this study did not find significant relationships between touch and patient perceptions, it provides an opportunity to scrutinize what is known in the literature and what could be done differently in the future. It is a time to step back and recognize that there are two
possible pathways ahead: First, nonclinical touch has no place in medicine. Consistent with past research (e.g., Street & Buller, 1987; Weinberger et al., 1981), touch was not significantly related to patient satisfaction. Specifically, the use of physician touch did not impact overall patient satisfaction ratings \( t(256) = -1.6, p = .87, d = .03 \), satisfaction with physician technical skills \( t(256) = -1.11, p = .27, d = .15 \) or physician communication skills \( t(256) = -3.2, p = .75, d = .04 \). Additionally, nonclinical touch did not impact patient experience scores, \( t(256) = -2.6, p = .80, d = .03 \). Even when using the less conservative sample of participants, physician touch still did not impact overall patient satisfaction ratings \( t(362) = -1.08, p = .28, d = .11 \), satisfaction with physician technical skills \( t(362) = -1.08, p = .28, d = .11 \) or satisfaction with physician communication skills \( t(362) = -7.6, p = .08, d = .45 \). Likewise, nonclinical touch was also not related to patient experience \( t(362) = -3.7, p = .71, d = .04 \).

The second alternative, however, is one met with more optimism. A considerable limitation to this study is the method employed. Although analogue patients have been effective in overcoming ceiling effects, funding restrictions, and overall control issues, removed participants may be unable to experience the full medical encounter. Of greatest importance, these participants did not feel the physician’s touch at a moment of great uncertainty and frustration. Further, many of these participants may not have noticed the slight touch or may have processed it below a realm of consciousness. Notably, although 245 participants saw a video featuring touch, only 97 participants correctly reported “the physician touched the patient’s knee” when asked at the end of the survey. Although employing stricter criteria for participant inclusion was used in attempts to overcome this issue, results showed no relationship among nonclinical touch and dependent variables.
Hence, it is possible that participants relied on other cues, such as facial expression, tone of voice, eye contact, or gesticulation, when evaluating the portrayed physician on measures of immediacy, satisfaction, and experience. Notably, the study population expressed high levels of overall patient satisfaction with 40.4% of participants reporting being ‘extremely satisfied’ and 44.5% of participants reporting being ‘moderately satisfied’ with the physician. Likewise, participants reported high ratings for patient experience ($M = 1.43, SD = .60$) and physician immediacy ($M = 2.58, SD = 1.18$). Interestingly, past research has found that when touch is coupled with other components of nonverbal immediacy, such as eye contact and body orientation, higher nonverbal scores in overall immediacy are associated with a higher patient satisfaction. However, when examined alone, touch was associated with lower satisfaction. The authors consider that touch may be viewed as an aggressive behavior for the first visit before rapport has been established (Larsen & Smith, 1981).

This rationale may be important when considering the impact of nonclinical touch in encounters with medical professionals. Nonverbal affiliative behaviors such as touch are meant to convey immediacy as these behaviors reduce physical and psychological distance between individuals (Andersen, 1979). Though physician immediacy use is globally associated with more patient satisfaction and understanding (Larsen & Smith, 1981; Richmond et al., 2001), a one-time interaction may be problematic to evaluate. Researchers found that the more contact patients had with a physician, the more likely they were to recognize the physician’s use of immediacy behaviors, and subsequently report greater satisfaction and compliance (Burgoon et al., 1987). Considering the brevity of our stimulus video (~1:15), it is possible that participants did not recognize the targeted immediacy behavior to the same extent that they might have if
rapport had been established or if the video featured a longer, fuller interaction with the physician.

Moreover, an overarching limitation for patient-physician research is a plethora of “noise” that contribute to a patient either having a positive or a negative experience. Particularly, a patient can still be satisfied even with inadequate health care (Woolley, Kane, Hughes, & Wright, 1978). In an ideal world, better physician communication leads to better patient perceptions. In reality, even a physician who uses an evidence-based approach may still yield an unsatisfied patient if expectations for care are incongruent (Johnston, 2013). Additionally, past research has shown that pain levels or health status can impact patient perceptions. As both a strength and limitation to this study, eliminating factors such as occurring pain through the use of analogue patients has the ability to focus the research on the communicative behaviors presented. However, using analogue patients does understandably dull some of the realism of the patient-provider interaction. Specifically, considering how healthy the study population reported being, it is possible that participants are unable to currently relate to the hospitalized patient in such a way that they could respond as if they were the patient.

**Future Directions**

A number of directions for future research were identified from the results of the present study. In particular, future studies should address the limitations of this study by investigating actual interactions between hospitalized patients and their physicians. A considerable limitation to this study is the lacking sensation of physical touch experienced by the patient. The results of our study pointed to a problem that only future research can resolve. By changing the methodological approach to include real patients, researchers would lose control over some of
the natural variances that occur between different dyads; however, researchers may be able to capture a truer impression regarding the use of nonclinical touch in medical care.

Additionally, it may also be beneficial to explore this study by manipulating other aspects of patient centeredness during the medical encounter as our physician actor was highly patient-centered throughout, both verbally and nonverbally. For example, a future study may manipulate eye contact, body posture (two nonverbal behaviors that are highly regarded), or the verbal accompaniment in efforts to focus attention on touch as a predictor.

Another future direction is the utility of physician nonverbal immediacy in relation to the betterment of patient satisfaction and experience scores. Immediate behaviors, such as nonclinical touch, may provide physicians an avenue to comfort and connect with hospitalized patients, thus, increasing the perceived quality of care. Still, future research is needed to further explore the relationship between immediacy and process-related measures such as patient experience.

Lastly, patient experience is still an underdeveloped area of research. Although patient experience scores, such as the HCAHPS, are being used to determine funding and reimbursement structures, academics have been slow to adopt patient experience metrics into their research. Affective measure such as patient satisfaction has been criticized for lacking standardization, yet, they are still prevalent. Despite the limitations of this study, our findings suggest that immediacy may be a viable factor in increasing patient experience ratings. Future research ought to continue exploring this connection.

**Conclusion**

As patient perceptions are increasingly being used as quality of care metrics, it is important to consider the impact of communication on the medical interaction. Specifically,
nonverbal communication strategies may play an important role in communicating warmth, care, and connection to hospitalized patients, thus, increasing their perceptions of physician immediacy, as well as patient satisfaction and experience ratings. Although this research did not produce the anticipated results, it is possible that the flaw in this study is not the relationship between nonclinical touch and patient perceptions, but rather the approach we used to study it. With the focus of current medical practice centering on the patient, the future of this line of research is both essential and boundless.
Table 1. Means and Standard Deviations of Nonclinical Touch on Patient Perceptions (conservative sample, $N = 258$).

<table>
<thead>
<tr>
<th>Variable</th>
<th>$n$</th>
<th>$M$</th>
<th>$SD$</th>
<th>$t$</th>
<th>Cohen’s $d$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Immediacy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>258</td>
<td>2.61</td>
<td>1.11</td>
<td>-.38</td>
<td>.04</td>
</tr>
<tr>
<td>Touch</td>
<td>97</td>
<td>2.58</td>
<td>1.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Touch</td>
<td>161</td>
<td>2.63</td>
<td>1.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intimacy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>258</td>
<td>2.73</td>
<td>.99</td>
<td>-.20</td>
<td>.03</td>
</tr>
<tr>
<td>Touch</td>
<td>97</td>
<td>2.71</td>
<td>1.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Touch</td>
<td>161</td>
<td>2.74</td>
<td>.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Patient Satisfaction – Overall</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>258</td>
<td>1.82</td>
<td>1.06</td>
<td>-.16</td>
<td>.03</td>
</tr>
<tr>
<td>Touch</td>
<td>97</td>
<td>1.80</td>
<td>1.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Touch</td>
<td>161</td>
<td>1.83</td>
<td>1.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Patient Satisfaction – Technical</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>258</td>
<td>1.64</td>
<td>.84</td>
<td>-1.11</td>
<td>.15</td>
</tr>
<tr>
<td>Touch</td>
<td>97</td>
<td>1.56</td>
<td>.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Touch</td>
<td>161</td>
<td>1.68</td>
<td>.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Patient Satisfaction – Communication</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>258</td>
<td>2.16</td>
<td>1.10</td>
<td>-.32</td>
<td>.04</td>
</tr>
<tr>
<td>Touch</td>
<td>97</td>
<td>2.13</td>
<td>1.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Touch</td>
<td>161</td>
<td>2.17</td>
<td>1.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Patient Experience</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>258</td>
<td>1.44</td>
<td>.57</td>
<td>-.26</td>
<td>.03</td>
</tr>
<tr>
<td>Touch</td>
<td>97</td>
<td>1.43</td>
<td>.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Touch</td>
<td>161</td>
<td>1.45</td>
<td>.55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2. Means and Standard Deviations of Nonclinical Touch on Patient Perceptions (liberal sample, \( N = 364 \)).

<table>
<thead>
<tr>
<th>Variable</th>
<th>( n )</th>
<th>( M )</th>
<th>( SD )</th>
<th>( t )</th>
<th>Cohen’s ( d )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Immediacy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>364</td>
<td>2.66</td>
<td>1.08</td>
<td>-1.14</td>
<td>.12</td>
</tr>
<tr>
<td>Touch</td>
<td>192</td>
<td>2.72</td>
<td>1.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Touch</td>
<td>172</td>
<td>2.59</td>
<td>1.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intimacy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>364</td>
<td>2.73</td>
<td>.94</td>
<td>-.73</td>
<td>.07</td>
</tr>
<tr>
<td>Touch</td>
<td>192</td>
<td>2.77</td>
<td>.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Touch</td>
<td>172</td>
<td>2.70</td>
<td>.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Patient Satisfaction – Overall</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>364</td>
<td>1.86</td>
<td>1.06</td>
<td>-1.08</td>
<td>.11</td>
</tr>
<tr>
<td>Touch</td>
<td>192</td>
<td>1.92</td>
<td>1.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Touch</td>
<td>172</td>
<td>1.80</td>
<td>1.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Patient Satisfaction – Technical</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>364</td>
<td>1.71</td>
<td>.89</td>
<td>-1.08</td>
<td>.11</td>
</tr>
<tr>
<td>Touch</td>
<td>192</td>
<td>1.76</td>
<td>.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Touch</td>
<td>172</td>
<td>1.66</td>
<td>.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Patient Satisfaction – Communication</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>364</td>
<td>2.19</td>
<td>1.09</td>
<td>-.76</td>
<td>.08</td>
</tr>
<tr>
<td>Touch</td>
<td>192</td>
<td>2.23</td>
<td>1.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Touch</td>
<td>172</td>
<td>2.14</td>
<td>1.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Patient Experience</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>364</td>
<td>1.44</td>
<td>.55</td>
<td>-.37</td>
<td>.04</td>
</tr>
<tr>
<td>Touch</td>
<td>192</td>
<td>1.45</td>
<td>.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Touch</td>
<td>172</td>
<td>1.43</td>
<td>.54</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3. Binary correlations among key variables (conservative sample, $N = 258$).

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Overall patient satisfaction</td>
<td>–</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Satisfaction with Technical Skills</td>
<td>.67**</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Satisfaction with Communication Skills</td>
<td>.67**</td>
<td>.70**</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Patient Experience</td>
<td>.57**</td>
<td>.56**</td>
<td>.72**</td>
<td>–</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Immediacy</td>
<td>.47**</td>
<td>.46**</td>
<td>.68**</td>
<td>.66**</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>6. Intimacy</td>
<td>.48**</td>
<td>.47**</td>
<td>.73**</td>
<td>.68**</td>
<td>.92**</td>
<td>–</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01, ***p < .001.

---

Table 4. Binary correlations among key variables (liberal sample, $N = 364$).

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Overall patient satisfaction</td>
<td>–</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Satisfaction with Technical Skills</td>
<td>.67**</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Satisfaction with Communication Skills</td>
<td>.69**</td>
<td>.71**</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Patient Experience</td>
<td>.56**</td>
<td>.51**</td>
<td>.70**</td>
<td>–</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Immediacy</td>
<td>.51**</td>
<td>.47**</td>
<td>.66**</td>
<td>.66**</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>6. Intimacy</td>
<td>.52</td>
<td>.47**</td>
<td>.72**</td>
<td>.69**</td>
<td>.92**</td>
<td>–</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01, ***p < .001.
Appendix A

PATIENT SATISFACTION ITEMS

Directions: These questions ask how you feel about the care you received from Dr. XXX. We are interested in your feelings, good and bad, about the medical care you received.

How UNSATISFIED or SATISFIED are you with each of the following statements?

1 2 3 4 5 6 7
1 = extremely satisfied; 2 = moderately satisfied; 3 = slightly satisfied; 4 = neither satisfied nor dissatisfied; 5 = slightly dissatisfied; 6 = moderately dissatisfied; 7 = extremely unsatisfied

Overall:

(1) My overall satisfaction with the doctor

Technical/cognitive competence:

(2) The doctor’s technical competence
(3) The doctor’s ability to diagnose
(4) The doctor’s understanding of treatment options and medications
(5) The confidence I place in the doctor’s medical judgement
(6) The respect I have for the doctor’s advice to me
(7) The competence of the doctor in investigating my problem

(8) The doctor’s skill and expertise

Communication style/skill:

(9) The respect and consideration the doctor showed me

(10) How much the doctor thought of me as a whole person

(11) The explanations the doctor gave me made me feel personally important

(12) How much the doctor made me feel personally important

(13) How much the doctor empathized with me or felt concern for me

(14) How much the doctor allowed me to participate in decision making

(15) How much the doctor encouraged me to ask questions
Appendix B

PATIENT EXPERIENCE ITEMS

DIRECTIONS: Please answer the questions in this survey about your encounter with Dr. XXX from today.

1  2  3  4  5
1 = strongly agree; 2 = agree; 3 = neither agree nor disagree; 4 = disagree; 5 = strongly disagree

(1) Did the doctor treat you with courtesy and respect?
(2) Did the doctor listen carefully to you?
(3) Did the doctor explain things in a way you could understand?
Appendix C

RELATIONAL COMMUNICATION SCALE FOR OBSERVATIONAL MEASUREMENT

(RCS-O)

DIRECTIONS: The following statements describe the ways some people behave while talking with or to others. Please indicate in the space at the left of each item the degree to which you believe the statement applies to Dr. XXX.

*Items must be reverse coded before analysis

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 = strongly agree; 2 = agree; 3 = agree somewhat; 4 = neither agree nor disagree; 5 = disagree somewhat; 6 = disagree; 7 = strongly disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Immediacy/Affection

_____ IA1. The physician was intensely involved in the conversation with the patient

_____ IA2*. …did not want a deeper relationship with the patient.

_____ IA3. …found the conversation stimulating.

_____ IA4*. …communicated coldness rather than warmth.
____ IA5. …created a sense of distance between he/she and the patient*.

____ IA6. …acted as if he/she was bored*.

____ IA7. …was interested in talking to the patient.

____ IA8. …showed enthusiasm while talking with the patient.

Similarity/Depth

____ SD1. The physician made the patient feel that they were similar to he/she.

____ SD2. …tried to move the conversation to a deeper level.

____ SD3. …acted like he/she and the patient were good friends.

____ SD4. …seemed to desire further communication with the patient.

____ SD5. …seemed to care if the patient liked him/her or not.

Receptivity/Trust

____ RT1. The physician was sincere.

____ RT2. …was interested in talking with the patient.

____ RT3. …wanted the patient to trust him/her.

____ RT4. …was willing to listen to the patient.

____ RT5. …was open to the patient’s ideas.
RT6. …was honest in communicating with the patient.
Appendix D

DEMOGRAPHIC VARIABLES

DIRECTIONS: The following statements are about you.

##. In general, how would you rate your overall health?
(1 = excellent, 2 = very good, 3 = good, 4 = fair, 5 = poor)

##. In general, how would you rate your overall mental or emotional health?
(1 = excellent, 2 = very good, 3 = good, 4 = fair, 5 = poor)

##. What is your age group?
1. Under 21
2. 21 to 34
3. 35 to 44
4. 45 to 54
5. 55 to 64
6. 65 or older

##. What is the highest grade or level of school that you have completed?
1. 8th grade or less
2. Some high school, but did not graduate
3. High school graduate or GED
4. Some college or 2-year degree
5. 4-year college graduate
6. More than 4-year college degree
##. What is your race? Please choose one or more.

1. White
2. Black or African American
3. Spanish/Hispanic/Latino
4. Asian
5. Native Hawaiian or other Pacific Islander
6. American Indian or Alaska Native

##. What language do you **mainly** speak at home?

1. English
2. Spanish
3. Chinese
4. Russian
5. Vietnamese
6. Portuguese
7. Some other language
References


