

PHYSICIAN EMPATHY: DEVELOPMENT AND PRELIMINARY VALIDATION
AND RELIABILITY TESTING OF TWO RATING SCALES

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by

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DEDICATION

This thesis is dedicated to my wonderful family: my parents, Richard and Rosemary, whose unwavering support and encouragement have made me the person I am today; my sisters, Andrea and Christina, who have inspired and enlightened me; and my grandparents, who paved the way for our success with unconditional love, support, and inspiration.

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ABSTRACT

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The aim of this study was to develop and pilot test two valid and reliable rating scales to measure physician empathy observed by raters through two different channels of communication (verbal and emotional tone) from the perspective of patients visiting their primary care physician. Four subscales were developed (Verbal: Affiliation, Patient Centeredness; Emotional Tone: Positive Affect, Physician Involvement). A secondary aim was to investigate group differences in empathy scores between high stress and low stress physicians. It was expected that physicians in the high stress category would be rated as having less observed empathy than those in the low stress category. Contrary to what was hypothesized, results of this study concluded that high stress physicians demonstrated more empathy than low stress physicians on both the Affiliation and Positive Affect subscales. No other significant differences in empathy ratings between high and low stress physicians were found. Physician empathic communication

(Affiliation, Patient Centeredness, Positive Affect, and Physician Involvement) was correlated with the patient satisfaction subscale, Physician Information Giving; and Patient Centeredness was correlated with the patient satisfaction subscale, Patient Choice, demonstrating predictive validity. Physician stress was correlated with physician control over his or her practice situation. Implications for future studies, physician training, and managed health care providers are discussed.

CHAPTER I

INTRODUCTION

“The (medical) interview is the most powerful, encompassing and versatile instrument available to the physician” (Engel, 1988, p.115). Communication between the physician and patient has long been considered to be important in health care (Frankel, 2000). Research revealing the effects of communication and human interaction on the process and outcomes of medical care has provoked growing interest and attention from researchers in many academic disciplines (Beck, Daughtridge, Sloane, 2001; Frankel, 2000; Frankel & Stein, 1999; Heritage & Maynard, 2006; Ong, De Haes, Hoos, & Lammes, 1995). It is empirically evident that the quality of the physician-patient interaction is a critical factor in patient and physician outcomes (Bensing, 1991; Ong, et al., 1995; Roter, Hall, & Katz, 1987). Primary care physicians are considered to be at the corner stone of communication in the medical profession because of the importance of primary care in the management of chronic diseases, such as diabetes, hypertension, coronary artery disease, and congestive heart failure (Greenfield, Kaplan, Ware, Yano & Frank, 1988). Concurrently, joint decision-making between the physician and patient positively influences patients’ adherence to medical recommendations and likelihood of carrying out health-related behavior change (DiMatteo, 1993).

The traditional role of physicians in clinical settings typically has been paternalistic, that is, controlled largely by the physician with little input on behalf of the patient. Although there has recently been an influx of education, involvement and responsibility for personal health on the part of individual patients, physicians still maintain a powerful status in the eyes of many patients, which further explains the strong influence of physicians' behavior during physician-patient interactions. One of the most resounding effects of the increased prevalence of managed care appears to be changes in the physician-patient relationship (Hadley & Mitchell, 2002).

New developments in the health care system have changed the role of primary care physicians, arguably adding more job-related stress to physicians. Primary care physicians presently wear two hats: administrators of "first contact and continuing care for persons with any undiagnosed sign, symptom, or health concern" (American Academy of Family Physicians, 2008) and "gatekeepers" of health organizations expected to control the traffic of patients by determining what specialty care they need or if they need it at all (National Center for Health Statistics, 2007). The primary care profession is inherently a high stress profession, and as physicians lose autonomy and control over their job situation, stress levels continue to mount. The potential effect that physician job characteristics may have on communication with patients and subsequent patient outcomes can be detrimental to the health care process. This unnecessary increase in stress can be curbed but it is imperative that health psychology researchers, health care educators, and policy makers understand the potential harm that elevated stress and diminished empathy can have on patient outcomes. This study examines physicians of

varying stress levels and examines their communication with patients and relationship to patient satisfaction.

Functions of Physician-Patient Communication

Physician communicative behaviors in medical interactions can serve two functions: instrumental and affective (Ong et al., 1995). Instrumental or task-focused behaviors refer to the technically based skills and expertise of physicians. Examples of instrumental behaviors include asking questions, giving information, discussing test results and discussing treatment plans (Bensing, 1991). Affective communicative behavior, however, refers to socio-emotional behavior, such as showing concern, being open and honest, showing empathy, giving reassurance, and showing approval (Ong et al., 1995).

Affective behavior appears to play a crucial role in medical communication because it is present in all face-to-face interactions regardless of the content or purpose of the conversation (Hall, Roter, & Rand, 1981). A physician's ability to understand another's emotions and to properly convey his or her emotions significantly contributes to patient satisfaction with the physician-patient relationship (DiMatteo & Taranta, 1979). Physicians' affective behavior is also essential to patient outcomes, such as adherence and willingness to follow treatment advice (DiMatteo et al., 1993).

Verbal Communication and Emotional Tone

Affective behavior may be demonstrated through both verbal and nonverbal channels. Separate analysis of verbal and nonverbal messages has been done in previous research in order to understand the role that subtle, nonverbal expressions of emotion play in predicting patient outcomes (Haskard, DiMatteo, & Heritage, 2008; Roter,

Frankel, Hall, & Sluyter, 2006). Bensing (1991) suggests that only 7% of emotional communication is actually conveyed verbally, while 22% is transferred by voice tone and 55% is received through eye contact, body posture, voice tone, gaze, laughter, facial expressions, touch, and physical distance. Furthermore, ill patients are extremely responsive to nonverbal cues conveyed by their physician because fearful, anxious, and confused feelings may accompany illness and it is natural for patients to search for subtle hints from their doctors about how they should think or feel (Freidman, 1979). Generally, physicians' verbal behaviors have been found to have significant associations with clinical outcomes (Beck, Daughtridge, & Sloane, 2002).

Tone of voice is an important channel for conveying messages about emotional states (Davitz, 1964; Hall et al., 1981). Previous research has determined that particular affective cues expressed by voice tone fall into general categories including anxiety, anger, dominance, assertiveness and sympathy (Hall et al., 1981). These categories represent global dimensions of the evaluation, activity, and potency factors of the semantic differential (Osgood, Suci, & Tannenbaum, 1957). These dimensions can be communicated through underlying messages in voice tone.

Physician Empathy

Empathy is expressed through verbal behavior and emotional tone, is considered a vital component of the physician-patient relationship, (Frankel, 2000) and, according to Rogers (1975) is one of the most powerful therapeutic interventions. Cohen-Cole & Bird (1991, p. 21) define empathy as "... a term indicating one person's appreciation, understanding, and acceptance of someone else's emotional situation." Bylund and Makoul (2005) suggest that empathy is transactional and is not just given from patient to

physician; rather, the patient presents an “empathic opportunity” which may determine the physician’s expressed empathy. In other words, some patients may provide several opportunities for the physician to respond empathically, while others may not provide any empathic opportunities. Since physician empathy is a product of empathic opportunities provided by the patient, it is important to consider such opportunities when investigating physician empathy (Bylund & Makoul, 2005).

Empathy is a multidimensional construct with affective, cognitive, and behavioral components (Bylund & Makoul, 2005; Nicolai, Demmel & Hagen, 2007). Some researchers combine all three dimensions thereby conceptually defining physician empathy as a physician’s ability to cognitively understand the patient’s needs, be affectively sensitive to the patient’s feelings, and to behaviorally convey empathy to the patient (Feighny, Arnold, Monaco, Munro, & Earl, 1998). For the current study, the behavioral dimension is considered most relevant for investigating physician-patient interactions because it is not the physician’s internal empathy, but how it is conveyed and viewed by the patient (Bylund & Makoul, 2005) and how the physician communicates it (Hojat et al., 2002; Nicolai, Demmel, & Hagen, 2007), that is considered most relevant.

Many researchers have examined empathy from physicians’ internal perspective, which typically relies on a type of self-report measure in order to gain insight regarding physicians’ perceptions or feelings of their empathic capacity (Hojat, Mangione, Nasca, Gonnella & Magee, 2005). For instance, a physician may feel empathy but may not adequately express empathy to the patient; this would cause the physician to appear to lack empathy from the perspective of the patient or outside observer. This demonstrates a need for further study into how physicians’ empathy is perceived through the eyes of the

patient or outside observer. Although empathic attitudes (perceptions) and behaviors (actions) are correlated, they are two different aspects of empathy (Hojat et al., 2002).

In order to capture physicians' empathic behaviors, two different rating scales (one to measure empathy conveyed verbally and the other to measure empathy conveyed through emotional tone) using an adjective bipolar scale have been developed in an attempt to measure perceived physician empathy through external observation (audiotapes and judgments of the audiotapes by trained raters) in an attempt to gain insight into the patients' perspective. The primary focus of the current study is to conduct pilot analyses on the scales to determine whether the scales are reliable, valid, and generalizable.

Physician Empathy and Patient Outcomes

Empathy conveyed by physicians through words or affect has not only been shown to improve patient satisfaction (Stewart et al., 2000; Sullivan et al., 2000), but also appears to have health promoting benefits (Van Dulmen & Bensing, 2002). In a review of the literature, Di Blasi and colleagues (2001) found that empathy had one of the strongest health promoting effects. More specifically, research findings link empathic interactions to reductions in patients' blood pressure (Hwang et al., 1998) and pain (Weiss, 1990). Also, patients' perceptions of physician empathy are positively associated with reduced emotional distress and increased disease-related self-efficacy in cancer patients (Zachariae et al., 2003).

A study by Wasserman, Inui, Barriatua, Carter and Lippincott (1984) reported that physician empathy was related to overall visit satisfaction and reduction in concerns.

Global assessments of empathy and appreciation of a patient's situation (empathy) have

been demonstrated to have a positive relationship with patient satisfaction (Comstock, Hooper, Goodwin & Goodwin, 1982). A review of the literature on communication and health outcomes found that the majority of the studies reviewed demonstrated a correlation between effective physician-patient communication (including empathy) and health outcomes (Stewart, 1995). The outcomes most affected were patients' emotional health, symptom resolution, functional status, physiologic measures, and pain control (Stewart, 1995). Furthermore, several studies have established a link between the absence of supportive, empathic communication and increased medical malpractice suits (Lester & Smith, 1993; Beckman, Markakis, Shuman & Frankel, 1994; Levinson, Roter, Mullooly, Dull & Frankel, 1997). Research suggests that there is a relationship between physician empathy and better patient outcomes, such as increased patient satisfaction; however, very little observational research has been conducted about how empathy is communicated between the physician and patient in the medical visit (Barnett, Howard, King, & Dino, 1981).

Effects of Physician Stress on Empathy

The inability of physicians to successfully cope with stress and the demands of medical practice may diminish the quality of doctor-patient relationships thereby diminishing medical care effectiveness; (Shapiro, Schwartz & Bonner, 1998) moreover, empathy may be lost when physicians are overwhelmed by stress (Shapiro et al., 1998). Frankel and Stein (1999) state that practicing medicine in a highly time-pressured, stressful environment is one barrier to clinicians' ability and willingness to show empathy toward patients. This theme has been demonstrated in studies of medical students and residents which have shown that empathy seems to suffer rather than thrive during the

course of medical school (Bellini, Baime, & Shea, 2002; Shanafelt, Bradley, Wipf & Back, 2002; Thomas et al., 2007). Empathy levels have been shown to decrease between entry to medical school and the end of the first year, supporting the notion of researchers and physicians alike that stress reduction and empathic communication skills should be part of the curriculum in medical school because coping with stress is such a crucial skill for physicians (Holm, 1997; Klitzman, 2006; Lee, Back, Block, & Stewart, 2002;; Shapiro et al., 1998). Results from a multicenter study of medical students and residents by Thomas and colleagues (2007) suggest that the decline of empathy in medical residents appears to be related to distress, which has the strongest effects on residents' care of patients compared to other factors such as physician depression.

Neumann et al. (2007) investigated both patient- and physician-specific determinants of physician empathy and the influence of physician empathy on long-term outcomes of cancer patients. Results from this study found that patient-perceived busyness of the medical office had a strong negative effect on physician empathy, which indirectly influenced patients' desire for more information regarding findings and treatment options from the physician as well as patients' depression. Neumann and colleagues (2007) concluded that physicians' stress negatively influenced the relationship between physician empathy and each of the following factors: information giving, the preventive effect on patient depression, and patients' quality of life.

Physicians' Stress, Satisfaction, and Control

While the effect of stress on physicians is now acknowledged at each stage of physician training and practice, the sources of stress at different time points are distinct (Thomas et al., 2007). Practicing physicians are confronted with issues regarding

malpractice suits, reimbursement issues, degree of autonomy, and issues related to office and administrative duties (Linzer et al., 2002; Thomas et al., 2007). Other sources of distress are similar at all stages of physicians' careers, such as dealing with patient death and suffering, medical errors, fatigue, and difficulties with balancing personal and professional lives (Thomas et al., 2007). Physicians today are more predisposed to job-related stress, possibly as a consequence of changes in the organization and delivery of health care (Hojat et al., 2002). This increase in physician stress can impair patient interactions, deplete the quality of care, and lead to physician burnout (Linzer et al., 2002). Coping with stress appears to be one of the greatest challenges facing practitioners in the medical profession (Lee, 1987). Stress has been shown to have harmful effects on one's physical and mental well-being (McCabe & Schneiderman, 1985; Selye, 1976). The tremendous stress intrinsically found in the medical profession places physicians at a greater risk for problems associated with stress, such as depression, anxiety, alcohol/drug abuse, and suicide (Johnson, Michels & Thomas, 1990; Notman, Salt & Nadelson, 1984; Pitts, Winokur & Stewart, 1961; Richings, Khara & McDowell, 1986).

Physician satisfaction is considered to be an important aspect of the physician-patient interaction due to the strong relationships it has with patient outcomes, such as patient adherence to treatment, patient health status, coping with disease, quality of life, patient recall and understanding of medical information, and patient satisfaction (DiMatteo et al., 1993; Grembowski et al., 2002; Ong et al., 1995; Roter et al., 1987). Job stress and satisfaction are inversely related to each other, and it appears that job satisfaction actually protects the mental health of medical professionals against job stress (Ramirez, Graham, Richards, Cull & Gregory, 1996). Some of the greatest sources of job

stress include lack of organizational support, inadequate salary, making critical on-the-spot decisions, dealing with crisis situations and working overtime (Peltzer, Masego & Mabeba, 2003).

Major predictors of stress among physicians are control factors which include workplace control, control over medical decision making, and control over hassles and interruptions (Linzer et al., 2002). In some cases, physicians' perceived control was found to indirectly influence ratings of empathy through communication behavior. Physicians who attributed positive patient outcomes to causes that they were able to control received higher empathy ratings from standardized patients (Silvester, Patterson & Koczwara, 2007). Many studies reporting physician dissatisfaction have identified physician perceived loss of autonomy as being of great concern to physicians and a factor in their lack of satisfaction (Conte, Imershein & Magill, 1992; Donelan, Blendon, Lundberg, et al., 1997; Murray et al., 2001; Schulz, Scheckler, Moberg, Johnson, 1997). Researchers also warn that system-level barriers, including limited access to care for patients and increased administrative burdens, can cause physician dissatisfaction potentially leading to negative effects on patient care (Conte et al., 1992; Donelan et al., 1997; Kerr et al., 2000; Murray et al., 2001; Pathman, Williams & Konrad, 1996; Petrozzi, Rosman, Berenz & Young, 1992; Schulz et al., 1997; Skolnik, Smith & Diamond, 1993). Other studies have found that dissatisfaction was much more likely when physicians felt they did not have the freedom (autonomy) to make clinical decisions that met their patients' needs, a sufficient level of communication with specialists, enough time with their patients, the ability to provide high-quality patient care, and the

ability to maintain continuing relationships with their patients (Devoe, Fryer, Hargraves, Phillips & Green, 2002).

Purpose of this Study and Research Questions

The aim of this pilot study was to develop a reliable and valid rating scale to measure physician empathy conveyed through physicians' verbal communication and emotional tone and observed by raters from the perspective of patients visiting their primary care physician. The scale was validated by computing correlations with measures of patient satisfaction. A secondary aim was to investigate group differences in empathy ratings between high stress and low stress physicians. Furthermore, two scales measuring both verbal communication and emotional tone were rated in order to separately examine manifestation of empathy through verbal context (Physician Verbal Empathy Scale) and emotional tone (Physician Emotional Tone Scale). The Physician Verbal Empathy Scale was rated by three raters who were instructed to rate each item based on the physicians' conversation with the patient; specifically, what the physician says as opposed to how he or she says it. The Physician Emotional Tone Scale was rated by six raters who were instructed to rate each item based on the physician's tone of voice, or how the physician speaks to the patient without focusing on the physician's words. Finally, relationships between physician stress and physician perceptions of control were examined.

Research questions of the current study were: (1) Can a reliable rating scale be created to measure physicians' empathic communication in audiotaped medical visits? (2) Can predictive validity of the rating scale be demonstrated based on correlations with patient satisfaction? (3a) Do verbal ratings of empathic communication differ between high stress physicians compared to low stress physicians? (3b) Do ratings of empathic

emotional tone differ between high stress physicians compared to low stress physicians?

4) Are physician stress and physician perceived control over practice setting correlated?

It was predicted that high stress physicians would be rated as displaying less empathy than low stress physicians in separate analyses of verbal and emotional tone ratings. It was also predicted that physician stress and control over practice setting would be significantly correlated.

CHAPTER II

METHOD

Overview

The main focus of this study was to develop and pilot a new, reliable rating scale in order to observe empathy through physicians' verbal communication and emotional tone during a medical visit. There are numerous available rating and coding methods to assess communication in the physician-patient relationship (e.g., Roter Interaction Analysis System) but no specific scale or coding form is known to exist to study observed communication of empathy through verbal communication and emotional tone. Both verbal communication and emotional tone were rated in order to separately examine manifestation of empathy through more specific communicative behaviors and through general affect. The primary research question in this study proposal addresses the communicative behaviors of primary care physicians. This study builds on various rating methods that have been developed and extensively studied in past research (Hall et al., 1981; Haskard et al., 2008; Hojat et al., 2002; Nicolai, Demmel & Hagen, 2007).

Original Study Design and Participants

Data for the current study represent a subset of previously collected data from a larger study conducted by the Bayer Institute for Health Care Communication and the University of California, Irvine. The data from this study were analyzed and described in

more detail in Haskard, Williams, DiMatteo, Rosenthal, Kemp White, and Goldstein (2008). The original study included 156 primary care physicians from 3 different medical settings: primary care clinic in a staff model HMO (58 physicians), a university medical center (93 physicians), and a Veterans Administration (VA) clinic (5 physicians). A total of 2196 physician-patient interactions were audio-tape recorded. The primary focus of the original study was to assess the effects of physician and patient communication skills training on multiple outcomes. For the current study only the baseline (pre-training) data were assessed.

Current Study Design

This thesis study involved a correlational design and analysis of previously collected data and uses a new communication rating scale designed for this study. Six raters were assigned to listen to and rate audio-taped physician-patient interactions. The interactions were selected based on predetermined criteria including a focus on physicians' stress levels (see description below). Piloted measurements of the psychometric properties of the scales were assessed and ratings of the scales were validated against patient reports of their satisfaction after the medical care visit.

Rating Scale Development

The current pilot study involved development of two scales to measure two dimensions of empathic communication. The verbal scale was derived from previous research on empathy, which includes significant findings relevant to empathic communication and derivations of items from other empathy scales (Hojat et al., 2002; Nicolai et al., 2007). The verbal scale (see Appendix A) contains 28 items. The first 17 items refer to specific, verbal cues of communication (e.g. "The doctor showed

understanding of the patient's point of view"). Each of these 17 items was designed to capture verbal cues of empathic communication toward the patient, perceived by the raters. Item generation was based on various empathy studies (scales and concepts) and reformulated for the current study (see Appendix A) (Hojat et al., 2002; Klitzman, 2006; Nicolai et al., 2007). Sixteen empathy-related items were rated on a 5-point Likert scale (1 = Never; 2 = Seldom; 3 = Sometimes, 4 = Often, 5 = All the time). These items were designed to capture the level of empathy the physician conveys toward the patient during the medical visit and were formatted to measure more specific aspects of empathy that can only be identified in verbal interactions. The three raters assigned to listen to the physicians' verbal communication were instructed to: "Rate each of the following (2-16) by circling a number for each question according to your perception of how the doctor speaks to the patient. Think of and rate each item independently of the others." One item was included on the scale to measure the frequency of empathic opportunities as perceived by the raters. The same 5 Likert-type responses were used ("Never, Seldom, Sometimes, Often, All of the time"). The question read as follows: "The patient provided the physician an opportunity to be empathic."

The other nine items of the verbal scale were also included in the emotional tone scale described below. These nine items were originally included in the verbal scale to measure empathy through the verbal channel and then to compare those same item responses measured through physicians' emotional tone. Further clarification of the rating process is discussed below.

The emotional tone scale (see Appendix B) was developed based on the semantic differential model (Osgood et al., 1957). The semantic differential model was designed to

measure the meaning of concepts using a dimensional, bipolar scale. Three categories of affective meaning are: the evaluation factor (“good-bad”), potency factor (“dominant-submissive”), and activity factor (“active-passive”) developed by Osgood et al. (1957). The emotional tone scale consists of 20 bipolar adjective descriptor items (see Table 2). The response format for the items is an 8.0 centimeter Visual Analogue Scale (VAS), with three unlabeled, demarcated points along the axis at the 0.0 cm (“All of the time” with corresponding adjective), 4.0 cm (“neutral”), and 8.0 cm (“Never” with other corresponding adjective) position. These items were counterbalanced to prevent response bias. After listening to the entire interaction, the raters were told to place a pencil mark along the horizontal axis of the VAS in the position they believe is in appropriate proximity to the adjective descriptor that most accurately describes the physicians’ affect toward the patient. See “Ratings Procedures” section below for clarification on actual ratings procedures.

Selection of Physician-Patient Interactions for the Current Study

Eighty-five audio-taped physician-patient interactions were selected for inclusion in the current study based on the following criteria: (1) baseline (pre-training) only, (2) physician must have responded to the self-report stress questions (an equal number of high stress and low stress doctors were selected using a median split), (3) English language only, (4) quality of recording was audible. Once the physician met the above criteria, one patient from each physician was selected. Four interactions were excluded from the data set due to three or more raters describing the audiotape being of poor quality, thus too difficult rate; therefore, a total of 85 interactions were included in analyses.

Patients of the qualified physicians had to meet the following additional criteria to be selected: patients' score on the General Health subscale of the SF-36 (McHorney, Ware, & Raczek, 1993) must be below 50 (scored on a 0-100 scale where 0 is poorest possible health and 100 is best possible health) (Ware, Kosinski, & Keller, 1994; Ware, Kosinski, & Dewey, 2000). A criterion for below average health was determined based on past research by John Ware in which the norm-based mean score is 50. A score below 50 indicates that health status is below what is considered average. In the case where more than one patient meets the General Health score criteria the lowest General Health scale score was selected. This selection criterion was included as an indirect method to increase the likelihood that the patient will present an empathic opportunity for the physician under the assumption that the poorer the patient's health the more likely the patient will present an opportunity for the physician to respond empathically (Bylund & Makoul, 2005). If more than one patient had the same General Health subscale score, then the patient with the lowest interaction identification number, which was arbitrarily assigned to each interaction in the original study, was selected.

Measures of Physician Stress, Physician Control, Physician Empathy, and Patient Satisfaction

The Physician's Stress and Life Satisfaction Questionnaire (PSLSQ) scale was developed for the purposes of the original study and was completed by all physicians. A subscale of the PSLSQ used in previous research assessed physician stress (3 items, alpha = .75). Items of this stress subscale include, "I feel stressed out in my current job," "I feel more stressed out in my job than other providers doing the same kind of work," and "I feel that my stress interferes with my ability to deliver quality care," and all items were rated on a 1-5 scale (e.g. 1 = strongly agree, 5 = strongly disagree); however, the values

were reversed in analyses so that the higher values indicated strongly agree, or more stressed. The high stress cohort was defined as physicians who reported above the median stress level of 2.67, while the low stress cohort was defined as physicians who reported below the median stress level.

Physician control data was derived from the PSLSQ which was analyzed to determine whether physician control was correlated with physician stress. The questionnaire asks the physicians: “How would you rate your current practice situation with respect to each of the following specific aspects of care?: (1) Personal control over patient office visit scheduling (visit length, visit intervals, etc., (2) Ability to see acutely ill patients personally when they need urgent care, and (3) Ability to retain control over patients’ primary management after referral to other physicians. Physicians were instructed to respond by rating their level of satisfaction on a 5-point scale (1 = very satisfied, 2 = satisfied, 3 = so-so, 4 = dissatisfied, and 5 = very dissatisfied). Physicians’ stress scores were correlated with physicians’ reports of control.

Patient satisfaction reports were collected from the Patient Satisfaction Questionnaire (PSQ) and used to assess predictive validity through correlations with empathic communication. The PSQ includes the following subscales: “Physician Information Giving,” (e.g. Physician told (the patient) everything, let (them) know the results, explained treatment of alternatives, etc.) ($\alpha = .95$), Patient Perceived Decision-Making” (e.g. “physician asked (the patient) to: take responsibility for (the patient’s) treatment, help make decisions; physician gives some control over treatment decisions” ($\alpha = .74$),” and “Patient Choice” ($\alpha = .96$) (e.g. “Physician offered choices in (the patient’s) medical care, discussed the pros and cons, asked preferred choice, took

preferences into account) (Haskard, Williams, DeMatteo, Rosenthal, Kemp-White, & Goldstein, 2008).

Pilot Testing

Two raters piloted preliminary drafts of the rating scales. The raters were each assigned 2 to 3 interactions that were not rated in the actual study. Each rater individually read through and critiqued the items on the scale pointing out items that needed to be clarified or modified. An individual focus session was conducted with each rater and the researcher in order to evaluate the relevance of the items as an aspect of empathy and to assess the items for clarity and conciseness. The outcome of the pilot testing resulted in further clarification of terms and rewording of 2 items in the verbal subscale in order for them to be general enough to apply to all interactions. Also, one item (“The doctor acknowledged that he or she kept the patient waiting”) was discarded completely for being too specific. The final and most major scale modification was changing the Likert response items. Response items were changed from “strongly agree – strongly disagree” to “never – all of the time,” which better fit the item questions. The emotional voice tone subscale did not undergo any modifications after pilot rating; however, definitions for some adjectives were provided for further clarification.

Ratings Procedures

Following pilot testing and modification of the scale, ratings of the verbal and emotional tone of physicians based on audio-tape recordings were completed. Six “naive” individuals were selected as raters. Past research has found that evaluations of judges who don’t have extensive prior knowledge of medical communication to do this rating task, or “naïve judges,” are most closely related to evaluations of actual patients

after medical visits (Hall et al., 1981). Previous research has shown females to be more sensitive to affect in voice tone (Ambady, Hallahan, & Rosenthal, 1995), which is why all six raters were female.

The order in which each rater listened to the interactions was randomly designed using an incomplete counterbalancing method to control for practice, fatigue, and order effects. Three raters rated all 85 interactions using the verbal scale only (which contained 9 items that were also part of the emotional tone scale). Three separate raters completed ratings of all 85 interactions using the 20-item emotional tone scale (containing 9 items identical to both scales and 11 unique items). The three raters assigned to the verbal channel were supposed to be given different instructions for the nine items identical between both scales; it was originally proposed that the verbal scale raters would listen only to the physicians' words when rating these items, while the three raters assigned to rating the emotional tone scale would listen to only the physicians' tone of voice. This difference in rating instructions would have allowed the researcher to compare identical items through different channels of communication (i.e., compassion conveyed verbally versus through emotional tone) and thereby compare empathy in different communication channels. The researcher inadvertently gave both sets of raters (all six raters) identical instructions (see exact instructions in Appendices A and B) for rating the nine shared items, thus preventing the researcher from answering the original research question regarding comparisons in physicians' empathy in different communication channels. To remedy this mistake, the researcher used these nine shared items as rated by all 6 raters for all analyses of the emotional tone scale.

CHAPTER III

RESULTS

Statistical Analysis Plan

Inter-rater reliability was assessed across the three raters of verbal communication and the six raters of emotional tone. The items of the scales were subjected to principal components analysis to determine subscales. Validity was assessed through correlations with patient self-reported satisfaction from the PSQ. Differences in empathy for high and low stress physicians were assessed and correlations between physician self-reported stress and physicians' perceived control over their practice situation were investigated.

Research Question 1: Analyses of Inter-rater Reliability

Inter-rater reliability was calculated using Cronbach's alpha to evaluate the level of agreement among the three raters of the verbal scale as well as among the six raters of the emotional tone scales (these analyses will answer research question 1) (see Tables 1 and 2). As noted in Table 1, items with low reliability (≤ 0.25) were not included in further analyses. The inter-rater reliability of two items of the verbal scale (Items 6 and 7) was calculated using only two of the three raters due to missing data from one of the raters (see Table 1). The mean inter-rater reliability of the 17 items of the verbal scale was .40. The mean inter-rater reliability for the nine items of the emotional tone scale was .62.

Descriptive Statistics

For the verbal scale, the individual scores for each of the three raters were averaged to represent an overall score for that item (see Table 3). The individual scores for each of the six raters of the emotional tone scale were averaged to represent an overall score for that item (see Table 4). The means, standard deviations, and ranges for each individual item are listed in Tables 3 and 4. The overall mean of all items from the verbal scale was 3.78 (SD=.54, Range = 2.61) (refer to Table 3 for individual item values). The overall mean of all items from the emotional tone scale was 6.29 (SD=.99, Range = 4.5).

Table 1

Inter-rater Reliability: Physician Verbal Empathy Scale (Based on Three Raters)

Number of Item	Inter-rater Reliability	N of Valid Cases
1. At any point during the visit did the doctor address the patient by his or her name?*	.804	85
1a. If yes, was it the patient's: First name, Last name, Both first and last name, or Other *	.810	19
2. The doctor used "we" or "us" when talking to the patient during the visit.	.396	85
3 The doctor discouraged the patient. ¹	.486	85
4. The doctor disclosed a personal experience to make the patient feel better.	.646	85
5. The doctor listened to the patient.	.429	85
6. The doctor ignored the patient's real concerns. ²	.097	85
7. The doctor made sure the patient understood.**	.270	85
8. The doctor focused on the patient.	.478	85
9. The doctor understood the emotional status of the patient.	.441	85
10. The doctor showed understanding of the patient's point of view.	.400	85
11. The doctor put the patient at ease.	.471	85
12. The doctor tried to put him/herself in the patient's shoes.	.438	85
13. The doctor empathized with the patient's main reason for his/her visit.***	.083	85
14. The doctor was contained within his/her own point of view. ³	.412	85
15. The doctor understood the patient's feelings.	.449	85
16. The doctor asked the patient if he or she had any questions.	.441	85
17. The patient provided the physician an opportunity to be empathic.	.666	85

* Item was included for qualitative purposes only. Item was not included in PCA.

** Reliability was based on 2 raters due to missing data.

*** Item was not included in PCA due to low interrater reliability.

1 – Item was reversed. The statement is intended to capture if the doctor *encouraged* the patient. Higher values reflect that the doctor was more encouraging Reliability is based on 2 raters due to missing data.

2 – Item was reversed The statement is intended to capture if the doctor *listened* to the patient. Higher values indicate the doctor listened to the patient more. Reliability is based on 2 raters due to missing data.

3 – Item was reversed. The statement is intended to capture if the doctor was *open* to the patient's point of view. Higher values indicate the doctor was more open to patient's point of view

Table 2
 Inter-rater Reliability: Physician Emotional Tone Empathy Scale (Based on Six Raters)

Item Number	Inter-rater Reliability	N of Valid Cases
1. Compassionate/Not Compassionate*	.748	85
2. Caring /Uncaring	.749	85
3. Sympathetic/ Unsympathetic	.649	85
4. Understanding/ Not Understanding*	.611	85
5. Empathetic/ Apathetic	.630	85
6. Warm/ Cold*	.755	85
7. Active/Passive	.256	85
8. Polite/ Rude*	.638	85
9. Engaged/Not Engaged*	.534	85

* Items were reversed in the scale. Values in the table have been adjusted so the higher values correspond to positive adjectives.

Table 3
Descriptive Statistics of Verbal Scale Items Based on the Average of Three Raters

Item Name	Range	Mean	Std Dev
2. The doctor used “we” or “us” when talking to the patient during the visit.	2.67	2.14	0.61
3. The doctor discouraged the patient.	2.33	4.44	0.39
4. The doctor disclosed a personal experience to make the patient feel better.	2.33	1.47	0.40
5. The doctor listened to the patient.	2.33	4.24	0.43
6. The doctor ignored the patient’s real concerns.	2.00	4.76	0.48
7. The doctor made sure the patient understood.	2.67	4.10	0.70
8. The doctor focused on the patient.	1.67	4.48	0.33
9. The doctor understood the emotional status of the patient.	3.00	3.75	0.61
10. The doctor showed understanding of the patient’s point of view.	3.00	3.59	0.62
11. The doctor put the patient at ease.	2.67	3.54	0.50
12. The doctor tried to put him/herself in the patient’s shoes.	3.00	2.17	0.62
13. The doctor empathized with the patient’s main reason for his/her visit.*	2.67	3.56	0.55
14. The doctor was contained within his/her own point of view.	3.00	5.68	0.65
15. The doctor understood the patient’s feelings.	2.67	3.60	0.57
16. The doctor asked the patient if he or she had any questions.	2.67	1.77	0.55
17. The patient provided the physician with an opportunity to be empathic.*	3.00	3.53	0.81

* Items were not included in Principal Components Analysis.

Table 4
 Descriptive Statistics of Emotional Tone Scale Items Based on the Average of Six Raters

Item Name	Range	Mean	Std Dev
1. Compassionate/Not Compassionate*	5.62	6.03	1.20
2. Caring/ Uncaring	4.62	6.42	1.07
3. Sympathetic/ Unsympathetic	5.25	5.58	1.12
4. Understanding/ Not Understanding*	4.90	6.60	.956
5. Empathetic/ Apathetic	4.30	5.05	1.05
6 Warm/ Cold*	5.02	6.24	1.20
7. Active/Passive	2.78	6.78	.723
8. Polite/ Rude*	4.40	7.07	.879
9. Engaged/Not Engaged*	3.23	6.88	.754

* Item 13, “The doctor empathized with the patient’s main reason for his/her visit.” Was not included in Principle Component Analysis due to low reliability.

^{1, 2} Only 2 raters’ ratings were computed to increase interrater reliability.

Principal Components Analysis

Using the overall average scores of the three raters for the verbal and the six for the emotional tone scale, principal components analysis with varimax orthogonal rotation was conducted in order to assess if the individual verbal and emotional tone items could be reduced into subscales. Internal consistency reliability of the subscales was assessed. Although the Physician Verbal Empathy Scale contains 17 total items, only 14 items were included in Principal Components Analysis. Item # 1 (“At any point during the visit did the doctor address the patient by his or her name?”) and item # 17 (“The patient provided the physician an opportunity to be empathic.”) were not included in Principal Components Analysis because item #1 was not designed to measure empathy quantitatively, rather, it was intended for purposes of anecdotal discussion. Item #17 was excluded from Principal Component Analysis because it was designed to measure *patient* behavior rather than *physician* behavior. This item is not related to the items 2-16, therefore it is not desirable to include it in principal components analysis. The third item (Item # 13: “The doctor empathized with the patient’s main reason for his or her visit.”) was excluded from Principal Components Analysis due to low inter-rater reliability ($\alpha = .083$).

Two principal components accounted for 59% of the variance in ratings of verbal physician empathy, and two components accounted for 89% of the variance in ratings of physician emotional tone empathy. Based on this analysis, two subscales were constructed separately for the verbal and emotional tone scales. The components for the Physician Verbal Empathy Scale were named: Affiliation (9 items; $\alpha = .93$) and Patient Centeredness (5 items; $\alpha = .64$) (see Table 5 for specific items included in each subscale). The components for the Physician Emotional Tone Empathy Scale are: Positive Affect (7 items; $\alpha = .97$) and Physician Involvement (2 items; $\alpha = .80$) (see Table 6 for specific items

included in each subscale). The average internal consistency reliability of the four subscales is 0.84.

Table 5
Subscales: Verbal Empathy Scale

Affiliation (9 items, $\alpha = 0.93$)

3. The doctor discouraged the patient
5. The doctor listened to the patient
6. The doctor ignored the patient's real concerns.
8. The doctor focused on the patient.
9. The doctor understood the emotional status of the patient.
10. The doctor showed understanding of the patient's point of view.
11. The doctor put the patient at ease.
14. The doctor was contained within his/her own point of view.
15. The doctor understood the patient's feelings.

Patient Centeredness (5 Items, $\alpha = 0.64$)

2. The doctor used "we" or "us" when talking to the patient during the visit.
 4. The doctor disclosed a personal experience to make the patient feel better.
 7. The doctor made sure the patient understood.
 12. The doctor tried to put him/herself in the patient's shoes.
 16. The doctor asked the patient if he or she had any questions.
-

Table 6
Subscales: Emotional Tone Empathy Scale*

Positive Affect (7 items, $\alpha = 0.97$)

1. Compassionate / Not Compassionate
2. Caring / Uncaring
3. Sympathetic / Unsympathetic
4. Understanding / Not Understanding
5. Empathetic / Apathetic
6. Warm / Cold
7. Polite / Rude

Physician Involvement (2 Items, $\alpha = 0.80$)

8. Active/ Passive
 9. Engaged/ Not Engaged
-

* All items were rated by all six raters

Research Question 2: Correlation Analyses

Next, correlations were computed between the verbal and emotional tone subscales and the patient satisfaction subscales of the PSQ to show some preliminary evidence of predictive validity. Table 7 shows the bivariate correlations between the four subscales of the Physician verbal and emotional tone empathy scales and three Patient Satisfaction subscales. All four empathy subscales (Affiliation, Patient Centeredness, Positive Affect, and Physician Involvement) are significantly correlated with the subscale, Physician Information Giving from the PSQ scale. In addition, the empathy subscale, Patient Centeredness is significantly correlated with the subscale, Patient Choice, from the PSQ scale. Correlations between Affiliation and Patient Choice as well as between Positive Affect and Patient Choice approached statistical significance ($p = .066$). No significant correlations were found among the Affiliation, Patient Centeredness, Positive Affect, and Physician Involvement subscales and the Patient Perceived Decision Making subscale from the PSQ. Likewise, no significant correlation was found between Physician Involvement and Patient Choice.

Table 7
Intercorrelations Between Subscales of the Verbal and Emotional Tone Scales and Patient Satisfaction Subscales of the PSQ

Subscale	Patient Perceived Decision Making	Patient Choice	Physician Information Giving
Verbal Scale (n = 85)			
1. Affiliation	.054	.206±	.273*
2. Patient Centeredness	.086	.221*	.289**
Emotional Tone Scale (n = 85)			
3. Positive Affect	.149	.205±	.291**
4. Physician Involvement	.085	.038	.248*

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

±Correlation is significant at the .066 level (2-tailed)

Research Questions 3a and 3b: Comparisons of High Stress and Low Stress Physicians

Independent samples T tests were computed to compare the high stress and low stress physicians on the verbal and emotional tone subscales, illustrated in Table 8.

Table 8
Independent Samples T-Test: Comparisons between High Stress and Low Stress Physicians

Subscales	t	df	p
Affiliation	-2.518	72.978*	.014**
Patient Centeredness	-1.767	82	.081
Positive Affect	-2.056	71.098*	.043**
Physician Involvement	-.967	82	.336

* The Levene's test for homogeneity of variances was significant for Affiliation ($F = 5.76, p < .05$) and Positive Affect ($F = 6.72, p < .05$), indicating unequal variance between groups.

** Indicates significant differences between high stress and low stress groups.

Results from this analysis were counter to the hypothesis that high stress physicians would receive lower empathy ratings, while low stress physicians would receive higher empathy ratings. Physicians who reported stress levels above 2.67 on the PSLSQ (using a median split) were considered "high stress" physicians, conversely those who reported stress levels below 2.67 were considered "low stress" physicians. The Levene's test for homogeneity of variances was significant for Affiliation ($F = 5.76, p < .05$) and Positive Affect ($F = 6.72, p < .05$), indicating unequal variance between groups. Table 8 illustrates the results of the t tests comparing high stress and low stress physicians. High stress physicians received significantly higher empathy ratings on Affiliation ($M = 4.12, SD = .34$), compared to low stress physicians ($M = 3.90, SD = .46$). Although not significant, differences between high stress physicians ($M = 2.40, SD = .34$) and low stress physicians ($M = 2.26, SD = .41$) in Patient Centeredness approached significance ($F = .565, p = .08$). High stress physicians received significantly higher empathy ratings

on Positive Affect ($M = 6.36$, $SD = .80$) compared to low stress physicians ($M = 5.92$, $SD = 1.15$). No significant differences in Physician Involvement were found between high stress ($M = 6.90$, $SD = .63$) and low stress physicians ($M = 6.76$, $SD = .63$).

Research Question 4: Comparisons of Physician Stress and Perceived Control Over Practice

Correlations were also computed between the stress and control subscales of the PSLSQ. A significant negative correlation was found between the physician stress subscale of the PSLSQ and the physician perceived control over practice subscale of the PSLSQ ($r = -.38$, $p < .01$)

CHAPTER IV

DISCUSSION

The primary goal of this study was to develop and pilot two reliable and valid scales with which to measure physician empathy conveyed both verbally and through emotional tone. The first research question of this study was focused on assessing the reliability of these two scales. Two unique scales were developed in an attempt to accurately capture physician empathic behaviors during a typical medical visit with a patient. This study found that the items of the two scales developed for this study could each be combined into two subscales with acceptable reliability (Physician Verbal Empathy Scale: Affiliation and Patient Centeredness, average internal consistency reliability of these subscales = 0.66; Physician Emotional Tone Scale: Positive Affect and Physician Involvement, average internal consistency reliability of these subscales = 0.83).

Affiliation is a term comprised from a combination of several behaviors designed to establish and maintain a positive relationship between the physician and patient, including behaviors that communicate interest, empathy, friendliness, warmth, genuineness, honesty, candor, compassion, a desire to help, devotion, sympathy, authenticity, a nonjudgmental attitude, humor, and a social orientation (Buller, 1987; Ben-Sira, 1976, 1980; DiMatteo, Prince, & Taranta, 1979; Freemon, Negrete, Davis, &

Korsch, 1971; Friedman, DiMatteo, & Taranta, 1980; Jensen, 1981; King, LaGrone, & Miller, 1984; Korsch et al., 1968; Korsche & Negrete, 1972; Street & Weinmann, 1987; Vickery, 1983).

The nine items from the Physician Verbal Empathy Scale that were statistically and conceptually similar were items such as: “The doctor listened to the patient,” “The doctor understood the emotional status of the patient,” and “The doctor showed understanding of the patient’s point of view.” The second subscale of the Physician Verbal Empathy Scale was Patient Centeredness. Patient Centeredness refers to specific verbal behaviors that the physician displayed to show the patient that he or she is putting the patient at the center of their focus. Five items comprised this subscale, such as “The doctor used “we” or “us” when talking to the patient during the visit,” “The doctor disclosed a personal experience to make the patient feel better,” and “The doctor asked the patient if he or she had any questions.”

Positive Affect was one of the two subscales of the Physician Emotional Tone Scale. This term refers to more general emotional aspects of the physician’s tone of voice. It has been found that positive affect produces greater overall patient satisfaction (Korsch & Negrete, 1981). Seven VAS items comprise this subscale: compassionate, caring, sympathetic, understanding, empathetic, warm, and polite, which are all considered positive affect toward a patient. Physician Involvement was the other subscale of the Physician Emotional Tone Scale. This subscale includes two items (active and engaged), which describe the degree to which the physician appears to be emotionally active, or involved with the patient during their conversation.

The second research question of this study was focused on determining the validity of the Physician Verbal Empathy Scale and Physician Emotional Tone Scale. Predictive validity was demonstrated by comparing empathy ratings of each subscale with reports of patient

satisfaction with their visit with their physician based on three patient satisfaction categories (Patient Perceived Decision Making, Patient Choice, and Physician Information Giving). Physician empathy has been linked to overall visit satisfaction and has been shown to have a positive relationship with patient satisfaction in past research (Comstock et al., 1982; Wasserman et al., 1984). Although the current study is only correlational and cannot draw causal conclusions, there is some preliminary evidence here connecting to previous research indicating that patients are more satisfied with their care when physicians use more empathic communication. It is especially interesting to find that all four of the Physician Empathy Subscales were correlated with Physician Information Giving. One possible explanation for this may be that people, as patients, often lose at least some control over their situation. The uncertainty of the patients' medical condition, outcome of their illness, and possible problems they might face (e.g. difficult recovery, pain, death) are often perceived as being out of their control. It is innately anxiety provoking to feel out of control, especially when it comes to one's health. If the physician works to alleviate the patient's lack of control by providing information to the patient about their condition, treatment options, and what to expect they are, in essence, acting empathically by appeasing the patient's anxiety through increased information giving. The more a physician understands what the patient is going through in terms of feeling out of control or being kept in the dark about their medical status, the more empathic they will likely be, which could explain the correlation between physician information giving and empathy ratings. Similarly, the significant relationship between the Patient Centeredness subscale of the Physician Verbal Empathy Scale and Patient Choice scale of the PSQ, may also support the notion that the more choices or control the patient is given by the physician, the more satisfied the patient feels toward the physician. Moreover, the types of empathic behaviors the Patient Centeredness subscale captured include behaviors

such as “disclosed a personal experience to make the patient feel better” and “made sure the patient understood,” which are types of empathic behaviors that may satisfy patients’ desire to have choices in their medical care. This may also contribute to why patient satisfaction may be directly related to physician empathy (Stewart, 1995).

Research question 3 aimed to determine whether differences in empathic communication existed between high stress physicians versus low stress physicians. The results showed that, counter to our hypothesis, higher stress physicians had higher empathy ratings overall, while lower stress physicians had lower empathy ratings overall. Such results could be explained by several reasons. First, perhaps the median split method used to determine which physicians would be considered high stress and which would be considered low stress did not allow a wide enough gap between the two groups. For instance, the majority of the physicians may have scored very close to the median score causing them all to clump together, thus preventing large group differences from being seen. Second, assuming the high and low stress groups were accurate, physicians’ higher stress levels may keep such physicians in a higher state of arousal and could possibly enhance their communication skills, namely empathy. For example, a physician in a busy practice may be more stressed than a physician in a slower practice but he or she must also stay organized and on top of his or her work so not to fall behind or make dangerous mistakes. Elevated stress levels caused by a busy practice setting may facilitate effective communication, including empathic behaviors because effective communication is vital to keeping a busy practice running efficiently. Future research should explore practice-setting variables, which may have important implications for health care managers and physicians alike. Considering the innately high stress environment physicians are subjected to, they may operate more effectively under higher stress and may possibly be more sensitive to patients’ feelings. Low

stress physicians, on the other hand, may also be more apathetic and less responsive to patient concerns.

The results further showed that high stress physicians demonstrated more Affiliation and Positive Affect, while low stress physicians demonstrated less Affiliation and Positive Affect. Correspondingly, the subscales that do not show significant differences between high and low stress physicians may provide further insight into a possible explanation for such findings. Patient Centeredness and Physician Involvement are subscales that included more specific communicative behaviors (e.g., “The doctor asked if the patient had any questions.”) that may be performed with little to no emotional basis. For instance, perhaps a physician, no matter his or her level of stress, is in the habit of saying, “Do you have any questions?” to every patient at the end of their consultation. This phrase could easily be “hard-wired” into the physician’s routine thus requiring little to no emotion on behalf of the physician. On the other hand, an affiliative behavior (e.g. “The doctor put the patient at ease.”) or positive affect (delivered through physician’s tone of voice) may require more emotional effort on the physician’s part because these are communicative behaviors that cannot be easily habituated or rehearsed, they are more likely to be genuine conveyances of empathy, thus possibly accounting for differences between more and less stressed physicians in these two scales. This rationalization could be further explained by notions presented in previous research such as that of Hojat and colleagues (2002) who discuss the differences between two dimensions of empathy: empathic attitudes (perceptions) and behaviors (actions), which are correlated but considered different aspects of empathy. It is debated whether certain aspects of empathy can be learned or are simply innate, and although more research is necessary to determine whether differences exist between types of empathy, it seems possible that empathic behaviors may be learned more easily than attitudes. Examining what types of empathy can

be more easily taught and how each type is conveyed during communication has important implications for the future of healthcare educators and institutions.

This particular study found that higher physician stress correlates with higher empathy, which counter intuitively seems to indicate that higher stress yields a more positive result in terms of communicative behaviors; however, such an assumption is incongruent with the majority of previous research. Thus, further studies should be conducted to determine the direction of the relationship between physician stress and empathy as rated in audiotaped physician-patient interactions.

Research question 4 assessed the relationship between physician stress and control. The potential relationship between physician self-reported stress and physician perceived control from the PSLSQ was investigated to determine whether control might relate to physician stress. Previous research has shown that some major predictors of stress among physicians are control factors such as workplace control, control over medical decision making, and control over hassles and interruptions (Linzer et al., 2002) and in some cases physicians with greater control received higher empathy ratings from patients (Silvester et al., 2007). The empirical findings from the current study suggest that physician stress may be related to physicians' perceived control. Physician stress was found to be negatively correlated with physician perceived control, which illustrates that physicians who report more work-related stress may be less likely to feel control over their practice setting; however, this correlation does not offer a causal explanation. Although this finding is not new to this field of study, it does have important implications that should be considered by managed health care providers, medical educators, future physicians, and practicing physicians alike. More specifically, managed health care providers should be aware of how physician stress may affect the quality of care their patients receive and more so, understand

that physician perceived control over their practice setting is valuable to physicians' job satisfaction and subsequently, patients' satisfaction. Measures should be taken by managed health care organizations and health administrators alike to protect physicians' perceived control and sense of autonomy in the work place to ensure that patients receive a higher level of quality health care.

Strengths and Limitations

Some strengths of the current study are the fact that a large sample population met the inclusion criteria (n=85). Also, the items of each scale had moderately high inter-rater reliability and evidence for predictive validity was demonstrated against factors of patient satisfaction with the medical visit. Moreover, many studies similar in methodology using audio-taped physician-patient interactions have been done successfully. This substantiates the methods used in the current body of research illustrated with research practices that involved raters evaluating audio-taped medical visits as well as employing similar-type items as those used in the current study, both of which have shown to be effective in capturing communicative behaviors (Haskard, DiMatteo, & Heritage, 2009). The current study also provides two original, reliable scales specifically designed to measure physician empathy conveyed through both verbal and emotional tone toward their patients, which has not been done in previous research. These scales, although preliminary, have helped fill a void in the current body of research and helped pave the way for additional research on physician empathy, correlates of physician variables to physician empathy, as well as correlates of patient outcomes to physician empathy.

Some limitations should be considered when interpreting the results of the current study. Generalizability of results may be limited because the physician-patient interactions

were all recorded from the same region, Southern California, which may not be an accurate representation of conversation styles and general etiquette in other parts of the country. Gender of both patients and physicians was not considered in this study, which could influence empathy ratings. For example, female physicians may be perceived as more empathic than male physicians or female patients may be met with higher empathy from male physicians, or vice versa. Studies in the future should take this variable into account as well as socioeconomic status, ethnicity, and age of both patients and physicians.

The patients' were not rated in this study, which prevents the current study from observing the dynamic between the physician and patient. Patient variables should be considered in future research in order to better understand the patients' role in how the physician conveys empathy toward them. Further, some items on the scale did not directly assess empathy (they assessed what the researcher defined as empathy); therefore, some items of the scale may not have accurately captured true empathic communication if such items were not interpreted as empathic behaviors as perceived by the raters.

Ratings of physician emotional tone may not be as accurate due to the fact that the raters were able to hear the words of the physician. Previous studies have used a technique called content-filtering, which is a process that removes the highest and lowest audio frequencies from an audio-recording. This process makes the recorded voices sound muffled making words inaudible thus allowing only the speaker's tone of voice to be heard (Haskard et al., 2008). Unfortunately, content-filtering was not possible for the current study.

Many of the variables used to measure validity and to run correlational analyses were self-report, such as the physician stress subscale and physician control subscale. In addition, there are some limitations to the number of and individual differences between raters. Although acceptable reliability was demonstrated (Average Internal Consistency Reliability

for each subscale: Affiliation = .74, Patient Centeredness = .59, Positive Affect = .89, Physician Involvement = .77), one cannot control for individual differences among raters' opinions and perceptions in this type of study. The ratings are still personal judgments of how physicians communicate with their patients and there may be innate differences in what each rater expects in communication. Although measures were taken to be sure that each rater understood each scale item and the definitions for each, this study could not control for slight individual differences among raters in their perception of how the physician communicated with the patient. Also, there was not an equal number of raters that rated each scale, thus inter-rater reliability was likely lower for the Physician Verbal Empathy Scale than if six raters rated it.

The fact that the physicians were aware that they were being recorded may have changed the way they behaved during the medical interaction. This could be another confounding variable that could account for why high stress physicians were rated as more empathic than the low stress physicians. Perhaps higher stress physicians, in this case, tried much harder to appear empathic while being audio-recorded because they know that is what is expected of them. Low stress physicians, on the other hand, may have been more relaxed altogether, thus not being as influenced by the pressure of being audio-taped. Future studies should take this factor into account.

Future Research Implications

Although, both scales were found to be reliable and show preliminary evidence of validity, further psychometric analyses and additional ratings with larger or other samples of audiotaped interactions should be conducted before these scales are used in other contexts

and populations. However, these scales have possible implications for future study of physician communication skills as well as training tools for prospective physicians.

Future research is needed to examine physician empathy more in depth, such as dimensions of empathy, modes of conveying empathy, and to what degree empathy (or what types) can be taught to physicians. Closer examination of both predictive variables that may influence physician empathy as well as outcome variables influenced by physician empathy is necessary to achieve a deeper understanding of how physicians' communicative behaviors can be improved, thus improving patient outcomes. The current study examined physician stress as a variable correlated with empathy; however, more research needs to be conducted to determine whether physician stress could predict physician empathy.

Understanding *how* physician empathy is conveyed to the patient is of great interest to future researchers and educators. If more empathy is conveyed through emotional tone, medical students and practicing physicians should be made aware of the importance of their emotional tone and the potential relevance for patient outcomes. Implications for physician communication training in medical school and in continuing education programs with an emphasis on both verbal and nonverbal communication are supported by the results of this thesis study.

APPENDIX A

PHYSICIAN VERBAL EMPATHY SCALE

1. At any point during the visit did the doctor address the patient by his or her name? (please circle one)

Yes / No

If yes, was it the patient's (please circle one):

(a) First name

(b) Last name

(c) Both first and last name

(d) Other: _____

Rate each of the following (2 – 16) by circling a number for each question according to your perception of how the **doctor** speaks to the patient. Think of and rate each item independently of the others.

2. The doctor used “we” or “us” when talking to the patient during the visit.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

3. The doctor discouraged the patient.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

4. The doctor disclosed a personal experience to make the patient feel better.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

5. The doctor listened to the patient.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

6. The doctor ignored the patient's real concerns.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

7. The doctor made sure the patient understood.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

8. The doctor focused on the patient.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

9. The doctor understood the emotional status of the patient.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

10. The doctor showed understanding of the patient's point of view.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

11. The doctor put the patient at ease.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

12. The doctor tried to put him/herself in the patient's shoes.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

13. The doctor empathized with the patient's main reason for his/her visit.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

14. The doctor was contained within his/her own point of view.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

15. The doctor understood the patient's feelings.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

16. The doctor asked the patient if he or she had any questions.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

The following question is asking about the **patient**:

17. The **patient** provided the physician an opportunity to be empathic.

1	2	3	4	5
Never	Seldom	Sometimes	Often	All the Time

Pay special attention to the *quality and tone of the doctor's voice* while you listen to the interaction.

According to *your perception* of the doctor's voice, rate each of the following items by marking a vertical line on the point that best corresponds to the blank in the statement below. If you *strongly agree* with one of the words then circle the vertical line at the end of the line closest to that word.

Think of and rate each item independently of the others.

The doctor was (fill in the blank) toward the patient:

Compassionate	-----	Not Compassionate
Uncaring	-----	Caring
Unsympathetic	-----	Sympathetic
Understanding	-----	Not Understanding
Apathetic	-----	Empathetic
Warm	-----	Cold
Passive	-----	Active
Polite	-----	Rude
Engaged	-----	Not Engaged

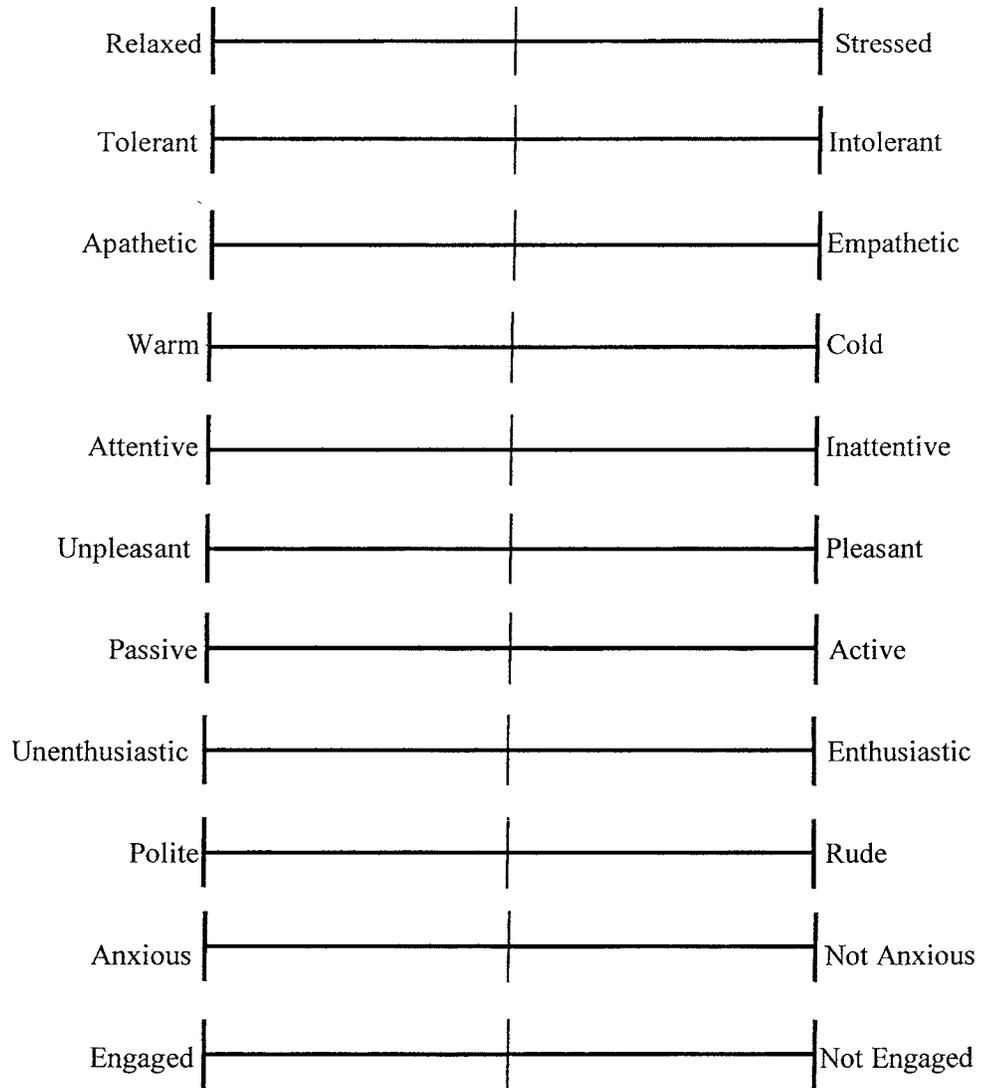
APPENDIX B

PHYSICIAN EMOTIONAL VOICE TONE SCALE

Pay special attention to the *quality and tone of the doctor's voice* while you listen to the interaction. According to *your perception* of the doctor's voice, rate each of the following items by marking a vertical line on the point that best corresponds to the blank in the statement below. If you *strongly agree* with one of the words then circle the vertical line at the end of the line closest to that word. Think of and rate each item independently of the others.

The doctor was (fill in the blank) toward the patient:

Compassionate	-----	Not Compassionate
Uncaring	-----	Caring
Sensitive	-----	Insensitive
Unsympathetic	-----	Sympathetic
Understanding	-----	Not Understanding
Connected	-----	Disconnected
Not Emotional	-----	Emotional
Thoughtful	-----	Thoughtless
Inconsiderate	-----	Considerate



Definitions

Sympathetic: the doctor conveys sympathy toward the patient, but does not express that he or she has also experienced what the patient is or has experienced

Empathetic: the doctor expresses that he or she has personally experienced what the patient is or has experienced; or the doctor appears to feel what the patient is feeling

Apathetic: the doctor has little or no emotion, concern, or interest; the doctor seems indifferent or unresponsive

Tolerant: the doctor is open-minded toward the patients' disposition, beliefs, attitude or feelings; the doctor is non-judgmental

Connected: the doctor establishes a connection between him/herself and the patient in attempt to form a relationship or rapport during the visit

APPENDIX C

ORIGIN OF SCALE ITEMS

Item #	VERBAL RATING SCALE	IDEA FROM LITERATURE	LITERATURE CITED
2, 4, 11	The doctor used "we" or "us" when talking to the patient at any point during the visit.; The doctor disclosed a personal experience to make the patient feel better.; The doctor put the patient at ease.	The 5 items correlating most with empathy were <i>put patient at ease (.64)</i> , <i>reassured patient with appropriate touch (.46)</i> , <i>listened to patient and heard concerns (e.g, non-interruptive) (.44)</i> , <i>made sure patient understood directions (.43)</i> , and <i>concentrated and focused on patient (.40)</i> ;	Colliver, Willis, Robbs, Cohen & Schwartz. (1998). Assessment of empathy in a standardized-patient examination. <i>Teaching and Learning in Medicine, 10</i> , 1, 8-11.
3	The doctor discouraged the patient. (negative)	The 5 items correlating most with empathy were <i>put patient at ease (.64)</i> , <i>reassured patient with appropriate touch (.46)</i> , <i>listened to patient and heard concerns (e.g., non-interruptive) (.44)</i> , <i>made sure patient understood directions (.43)</i> , and <i>concentrated and focused on patient (.40)</i> ;	Colliver, Willis, Robbs, Cohen & Schwartz. (1998). Assessment of empathy in a standardized-patient examination. <i>Teaching and Learning in Medicine, 10</i> , 1, 8-11.
5, 9	The doctor listened to the patient; The doctor understood the emotional status of the patient.	The 5 items correlating most with empathy were <i>put patient at ease (.64)</i> , <i>reassured patient with appropriate touch (.46)</i> , <i>listened to patient and heard concerns (e.g., non-interruptive) (.44)</i> , <i>made sure patient understood directions(.43)</i> , and <i>concentrated and focused on patient (.40)</i> ;	Colliver, Willis, Robbs, Cohen & Schwartz. (1998). Assessment of empathy in a standardized-patient examination. <i>Teaching and Learning in Medicine, 10</i> , 1, 8-11.
6	The doctor ignored the patient's real concerns (negative)	The 5 items correlating most with empathy were <i>put patient at ease (.64)</i> , <i>reassured patient with appropriate touch (.46)</i> , <i>listened to patient and heard concerns (e.g, non-interruptive) (.44)</i> , <i>made sure patient understood directions (.43)</i> , and <i>concentrated and focused on patient (.40)</i> ;	Colliver, Willis, Robbs, Cohen & Schwartz. (1998). Assessment of empathy in a standardized-patient examination. <i>Teaching and Learning in Medicine, 10</i> , 1, 8-11.

7	The doctor made sure the patient understood	The 5 items correlating most with empathy were <i>put patient at ease</i> (.64), <i>reassured patient with appropriate touch</i> (.46), <i>listened to patient and heard concerns (e.g, non-interruptive)</i> (.44), <i>made sure patient understood directions</i> (.43), and <i>concentrated and focused on patient</i> (.40),	Colliver, Willis, Robbs, Cohen & Schwartz. (1998). Assessment of empathy in a standardized-patient examination. <i>Teaching and Learning in Medicine</i> , 10, 1, 8-11
8	The doctor focused on the patient	The 5 items correlating most with empathy were <i>put patient at ease</i> (.64), <i>reassured patient with appropriate touch</i> (.46), <i>listened to patient and heard concerns (e.g, non-interruptive)</i> (.44), <i>made sure patient understood directions</i> (.43), and <i>concentrated and focused on patient</i> (.40);	Colliver, Willis, Robbs, Cohen & Schwartz. (1998). Assessment of empathy in a standardized-patient examination. <i>Teaching and Learning in Medicine</i> , 10, 1, 8-11.
10, 14	The doctor showed understanding of the patient's point of view.; The doctor was contained within his/her own point of view. (negative)	REM rating scale item 3.	Nicolai, J., Demmel, R. & Hagen, J. (2007). Rating scales for the assessment of empathic communication in medical interview (REM): scale development, reliability, and validity. <i>Journal of Clinical Psychology in Medical Settings</i> , 14, 367-375.
12, 13, 15	The doctor tried to put him/herself in the patient's shoes.; The doctor empathized with the patient's main reason for his/her visit.; The doctor was contained within his/her own point of view (negative); The doctor understood the patient's feelings.	The most important component is perspective taking ... Other components of empathy are compassionate care and standing in the patient's shoes, which are both specific to the patient-physician relationship.; REM rating scale item 4	Hojat et al. (2002). Physician empathy: definition, components, measurement, and relationship to gender and specialty. <i>The American Journal of Psychiatry</i> , 159, 9, 1563-1569.; Nicolai, J., Demmel, R. & Hagen, J. (2007). Rating scales for the assessment of empathic communication in medical interview (REM). scale development, reliability, and validity. <i>Journal of Clinical Psychology in Medical Settings</i> , 14, 367-375.
16	The doctor asked the patient if he or she had any questions	Simple processes were suggested such as charting at the bedside instead of after leaving a patient, asking patients if they had any questions at the end of	Klitzman, R. (2006). Improving education on doctor-patient relationships and communication lessons

		interactions , acknowledging having kept patients waiting, and increasing awareness of nonverbal interactions.	from doctors who became patients <i>Academic Medicine</i> , 81, 5, 447-453.
14	At any point during the visit did the doctor address the patient by his or her name? (yes/no) If yes, was it the patient's first or last name? (First name/Last name)	Referring to patients by their name (first, last, or both) may feel more personal and convey more empathy.	

EMOTIONAL TONE SCALE ITEMS	IDEA FROM LITERATURE	LITERATURE CITED
Compassionate / Not Compassionate	The most important component is perspective taking ... Other components of empathy are compassionate care and standing in the patient's shoes, which are both specific to the patient-physician relationship.	Hojat et al. (2002). Physician empathy: definition, components, measurement, and relationship to gender and specialty. <i>The American Journal of Psychiatry</i> , 159, 9, 1563-1569.
Caring / Uncaring	Caring can be felt through tone of voice and can be a way of conveying empathy.	
Sensitive / Insensitive	Sensitivity can be heard through tone of voice and can be a way of conveying empathy.	
Sympathetic / Unsympathetic	Sympathy is similar to empathy and can be a way of attempting to convey empathic intentions.	
Understanding / Not Understanding		Nicolai, J., Demmel, R. & Hagen, J. (2007). Rating scales for the assessment of empathic communication in medical interview (REM): scale development, reliability, and validity. <i>Journal of Clinical Psychology in Medical Settings</i> , 14, 367-375.
Connected/ Disconnected	Connectedness between a physician and his/her patient can be a way of showing they are involved and care.	
Emotional / Not Emotional	"Empathic doctor-patient relations consist of: eliciting feelings , paraphrasing and reflecting, using silence, listening to what the patient is saying, but also what he is unable to say, encouragements and non-verbal behavior."	Ong et al. (1995)

Thoughtful / Thoughtless	Thoughtfulness is a way of performing actions that are consistent with empathic feelings toward another.	
Considerate / Inconsiderate	Consideration when speaking to others is a way of putting him or herself in the patient's shoes.	
Tolerant / Intolerant	Tolerance is a way of demonstrating empathy for others feelings and perspectives.	
Empathetic / Apathetic		Hojat et al. (2002)
Warm / Cold		Haskard, K.B., Williams, S.L., DiMatteo, M.R. Heritage, J., & Rosenthal, R. (2008). The provider's voice: patient satisfaction and the content-filtered speech of nurses and physicians in primary medical care. <i>Journal of Nonverbal Behavior</i> , 32, 1-20.
Attentive / Inattentive	Attentiveness is a way to convey that he or she is focused, interested, and concerned for the patient.	
Pleasant / Unpleasant	Speaking to patients with a pleasant tone of voice conveys subtle feelings of caring and empathy toward the patient.	
Active / Passive		Haskard, K.B., Williams, S.L., DiMatteo, M.R. Heritage, J., & Rosenthal, R. (2008). The provider's voice: patient satisfaction and the content-filtered speech of nurses and physicians in primary medical care. <i>Journal of Nonverbal Behavior</i> , 32, 1-20.
Enthusiastic / Unenthusiastic	Enthusiasm during the medical visit is a way of conveying that the physician is emotionally involved with the patient.	
Polite / Rude	Speaking to patients with a polite tone of voice conveys subtle feelings of caring and empathy toward the patient.	
Gentle / Rough	...the importance of tone, "gentleness," and other subjective aspects of such communication.	Klitzman, R. (2006). Improving education on doctor-patient relationships and communication: lessons from doctors who became patients <i>Academic Medicine</i> , 81, 5, 447-453.

Stressed / Relaxed	Stress conveyed in the physicians' tone of voice may convey harsh or apathetic tones to the patient.	
Anxious / Not Anxious		Haskard, K B., Williams, S L., DiMatteo, M.R. Heritage, J., & Rosenthal, R (2008) The provider's voice: patient satisfaction and the content-filtered speech of nurses and physicians in primary medical care. <i>Journal of Nonverbal Behavior</i> , 32, 1-20.

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