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A Mixed-Method Examination of Patient Perceptions of Ideal Physician Behavior and Overall

Quality of Care

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“On my honor, I have not given nor received, nor witnessed any unauthorized assistance on this work”

Abstract

The present study examined three dimensions of physician characteristics and behaviors (knowledge, communication, and compassion) to better understand how patients perceive physicians and overall quality of care. This mixed-methods approach utilized both close- and open-ended survey questions to assess participants' relationship with their physicians. In addition, participants wrote stories to describe best and worst experiences with physicians. Giving participants the opportunity to write stories in their own words allowed for a more nuanced understanding of the complexity of patients' experiences, physician characteristics, and perceptions of overall quality of care. Results indicated that patients perceive physicians who are good communicators as compassionate and knowledgeable, as well. Patients who believed physicians were good communicators, compassionate, and knowledgeable also reported that they received high quality of care from their physicians. Additionally, results suggest that perception of overall quality of care can be explained by a combination of knowledge, communication, and compassion. These findings are applicable to practicing and student physicians who may benefit from understanding factors that influence patients' perceptions of physicians and care to provide a higher quality and standard of care to patients.

Keywords:

Communication

Compassion

Knowledge

Quality of Care

A Mixed-Method Examination of Patient Perceptions of Ideal Physician Behavior and Overall Quality of Care

The doctor-patient relationship is critical to the practice of medicine and essential for high quality of care, diagnosis, and treatment of patients. Focus on this area of medical sociology arose with loss of focus on humanism in modern medicine with advancements in biochemical and pathophysiological aspects of disease (Roter, 2000). Key interactions between physician and patient were also lost when a prescriptive design of interview questions assessing patient's medical history and history of present illness (HPI) replaced unstructured medical histories requiring more communication between physicians and patients (Sari, Prabandari, & Claramita, 2016). Additionally, healthcare reform and managed care has contributed to this shift by limiting the time physicians have with each patient to accommodate more patients each day. Limited time with patients greatly contributes to the loss of the doctor patient relationship and humanism in medicine (Grembowski, Cook, Patrick, & Roussel, 2002). As cited in Ventres (2015), Kerr White Lament captures the essence of this shift in medical culture with the following metaphor: "physicians came to a point of failing to remember that apples are red and sweet in addition to being composed of cells and molecules." Losing sight of the patient as a person is comparable to losing sight of the color and taste of an apple when focusing entirely on cellular and molecular composition of apple, or in this case, disease pathology. Thus, attention to interpersonal components of patient care is critical in the quickly advancing field of modern medicine, since these skills are essential to holistically and thoroughly treat patients (Dorr Goold & Lipkin, 1999).

Theories of Quality of Care in Doctor-Patient Relationships

High-quality relationships between patients and their physicians involve both organizational and systematic factors. Organizational factors include accessibility of doctors, courtesy, and attention to patient comfort in the office or hospital. Systematic factors encompass the care and concern the patient receives (Dorr Goold & Lipkin, 1999). The relationship between patient and physician also relies on how well patients' medical needs are met and concerns are addressed by the physician.

A greater focus on patient perceptions of quality of care began in 1990 in effort to re-emphasize patient-centered care (Al-Abri & Al-Balushi, 2014). According to Donabedian (1966), patient care is not a unitary concept, but rather a multi-component approach to the delivery of quality healthcare. Indicators of quality of care may consider medical outcomes, which include recovery and survival (Yellen, Davis, & Ricard, 2002; Bjertnaes, Sjetne, & Iversen, 2012). The validity and objectivity of outcome measures make studying them advantageous when assessing indicators quality of care. Still, this may not be the most relevant measure, as a patient may have had very positive interactions and received the best care possible, without having a desired outcome because of factors out of the physician's control (Dimatteo et al., 1980).

The Donabedian model provides a framework for the study of quality of care in health care, and this model utilizes *structure*, *process*, and *outcome* as primary measures (Donabedian, as cited in Shojania et al., 2007). *Structure* pertains to context of care delivery in terms of the building, number of health care professionals present, and the organization of the facility. The *process* component of the model focuses on diagnostics, physician care, and interpersonal skills. Researchers use patient interviews, questionnaires, and medical records to assess *process*. The

model also focuses on patient *outcomes*, including satisfaction and quality of life following illness or disease (Perides, 2003). Often, such outcome measures are a greater reflection of the success of medical technology rather than patient experience and quality of care received. The present study focuses on both process and outcome components of the Donabedian model to examine patient perceptions of specific qualities of medical care. This study only examines satisfaction from the outcome component of the model as a reflection or overall perception of quality of care. Measures of patients' perceptions of multiple aspects of their care allow researchers and physicians to better understand patients' beliefs and attitudes regarding particular qualities of their care along their medical journey.

Components of Quality of Care

Previous research on doctor-patient relationships reveals the importance of physicians' knowledge, communication, and compassion to patients' perceptions of their medical care as patients have previously identified these components as being significant and relevant to their care (Berry et al., 2008; Charles, Gafni, & Whelan, 1999; Sinclair et al., 2017).

Knowledge

Physician knowledge refers to how well a physician knows how to manage a patient's condition, past medical history, and the patient as a person (Berry et al., 2008). Patient perception that a physician has the knowledge and skills required to properly treat a condition and care for a patient contribute to level of trust in the physician. Research on patients' perceptions of physicians' knowledge indicates that patients are more concerned with physician knowledge of their past medical history and condition in hospital settings than in clinics or private office settings (Inoue, Inoue, & Matsumura, 2010). Developing a long term relationship with a physician exhibiting strong communication and compassion contributes to patient

perception of how well the physician knows patients and their medical conditions (Inoue et al., 2010). Therefore, a healthy combination of positive interactions contributes to a patient's confidence in physician's knowledge and ability to provide high quality of care.

Physician knowledge has been determined in past studies using questionnaires administered to patients to assess perceptions of physician knowledge about them and their condition (e.g., Inoue et al., 2010). Responses are typically scored using a Likert-type scale to determine perceptions of physician knowledge of patients' values and beliefs regarding medical treatment and responsibilities and daily roles at home, work, or school.

Communication

Communication is critical for establishing a strong doctor-patient relationship and building a good rapport, which are central to effective and therapeutic patient care (Fong Ha, Surg Anat, & Longnecker, 2010). Positive communication between a physician and patient is essential to support the patients' emotional health and enhance understanding of medical conditions and treatment plans (Stewart et al., 2000). A doctor's interpersonal skills, which are built on basic communication skills, also contribute to effective collection of patient information, accurate diagnoses, and formation of a good rapport (Duffy, Gordon, Whelan, Cole-Kelly, & Frankel, 2004).

Communication has been measured using numerical ranking or Likert-type scales. According to a study by Arora (2003), physicians' communication when interacting with cancer patients significantly affects patients understanding of their condition, outcomes, and treatment options. Patients faced with understanding complicated medical terminology, decision-making regarding treatment options, and coping with fear of outcomes rely on healthcare providers to understand and effectively explain terms and information, while also providing the patient with

necessary emotional support (Charles, Gafni, & Whelan, 1999). Patients' responses to close-ended questionnaires reveal desire for better communication with their physician (Duffy et al., n.d.; Buller & Buller, 1987). Interpersonal and communication skills have also been deemed a core competency that physicians must demonstrate. Development of the Communication Assessment Tool (CAT) has proven to be another reliable measure of communication for physicians-in-practice and student physicians that uses numerical rankings to assess communication (Makoul, Krupat, & Chang, 2007).

The physician's ability to communicate technical information in layperson's terms is necessary for the patient to understand, ask questions, and to properly cope with the anxiety and uncertainty associated with diagnosis and illness. Physicians can process and respond to patient concerns more effectively when providing patients with the opportunity to tell full narratives about their illnesses. A complete story enables thorough integration and interpretation of illness by both the physician and the patient (Stewart et al., 1999).

The physician's responsiveness to patient concerns and emotions helps establish trust and respect between the doctor and the patient by ensuring the patient feels understood and cared for (Mahmud, 2010). This relationship is critical when vulnerable patients rely on a physician's skill, expertise, and good will to provide high quality care. Complications may arise if patients do not have a relationship with their physician that allows for open communication, trust, and compassion (Dorr Goold & Lipkin, 1999). Patients may assume a very passive role in care if unaware of their right to have a voice and a say in treatment plans or if uncomfortable communicating openly with a physician (Dorr Goold & Lipkin, 1999). Additionally, without trust and communication, the patient may not consider the physician's perspective when deciding

on a treatment plan, seeking advice, or looking for ways to cope with a recent diagnosis, which can affect patient perception of the physician and the quality of care received (Roter, 2000).

Compassion

Compassion contains enhanced features of empathy and motivation to be loving, altruistic, and perform acts of kindness for others (Bendapudi, Berry, Frey, Parish, & Rayburn, 2006; Sinclair et al., 2017). Compassion requires an awareness and desire to reduce suffering, which goes beyond providing necessary medical services to patients. Compassion is commonly referenced and conflated with empathy and sympathy. To clarify the differences between these terms, the literature defines sympathy as an emotional reaction triggered by the misfortune of others, while empathy incorporates understanding and appropriate response to the misfortune of others (Sinclair et al., 2017). Beyond sympathy and empathy, compassion includes added elements of selflessness and desire to proactively be altruistic and caring to provide encouragement to the suffering (Sinclair et al., 2017).

In a study by Sinclair and colleagues (2017), advanced cancer patients were interviewed by research nurses and reported that physician compassion included elements of relieving suffering, enhancing well-being, and improving the quality of care. These patients identified compassion as the preferred medium of care that helped reduce suffering. In response to the emergent themes from participants' interviews, compassion was defined as: "a virtuous response that seeks to address the suffering and needs of a person through relational understanding and action" (Sinclair et al., 2017, p. 444).

Though sometimes measured via responses to open-ended prompts, compassion has been measured using numerical ranking or Likert-type scales (Fogarty, Curbow, Wingard, McDonnell, & Somerfield, 1999). For example, patient perception of physician compassion has been

measured following optimistic and less optimistic physician comments in a clinical trial. Researchers used a numerical ranking scale adapted from Fogarty, Curbow, Wingard, McDonnell, and Somerfield (1999) to assess physician compassion: warm/cold, pleasant/unpleasant, compassionate/distant, sensitive/insensitive, and caring/uncaring. By combining the results, a numerical compassion score, ranging from 0-50 with a lower score indicating more compassion, was used to measure physician compassion. Higher compassion scores were associated with lower patient anxiety and higher patient satisfaction with their care (Fogarty et al., 1999).

Summary of Components of Quality of Care

Patient perceptions of knowledge, communication, and compassion have been individually examined and referenced as relevant characteristics for a physician to possess. Communication has been referenced with compassion and knowledge respectively, but the extent to which these three characteristics are related and uniquely explain patients' perceptions of their overall quality of medical care is unknown. The present study aims to explore associations among these characteristics and the extent to which they uniquely predict overall quality of care using both quantitative and descriptive data to better understand dynamics of physician-patient relationships.

Patients' Narratives of Quality of Care

Reviewed literature demonstrated the importance of knowledge, communication, and compassion in patients' medical care. This research typically used closed- or open-ended questionnaires and interviews, which are limiting. While these methodologies have been revealing, they do not allow participants to share particular stories of their medical experiences that may disclose how patients' construe their unique experiences with physicians.

Narrative medicine highlights the fundamental need for personal stories about medical experiences to be shared. Patient stories are dynamic entities, or concepts that cannot easily be studied, understood, or mastered by physicians or researchers. Narratives help researchers gain a rich understanding of the patient experience through unique descriptions highlighting the dynamics of doctor patient relationships and the determinants of negative and positive patient experiences with physicians. Additionally, past research suggests that physicians have potential to deliver higher quality of care to patients when openly listening to patient stories with special emphasis on the context of these stories (DasGupta, 2008).

Narrative medicine enables physicians to follow a patient's narrative thread to better interpret a patient's story from his or her perspective, which also helps improve communication when working with patients. According to Charon (2001), this practice also incorporates narrative competence, which is the ability to "acknowledge, absorb, interpret, and respond to stories" (Charon, 2001, p. 1897). Medical practice in concert with narrative competence provides a model for more effective approaches to patient care. A narrative practice provides the physician with a more effective means of practicing medicine with greater empathy, communication, and professionalism, while also promoting reflection and establishment of a greater trust between the physician and patient. The patient benefits by being listened to, which promotes increased openness with the physician (Charon, 2001).

Without the environment and the relationship to tell a full story or ask questions, patients become susceptible to a less focused, more expensive diagnostic work up, and possible misdiagnosis. Lack of listening can lead to an unfocused differential that requires more unnecessary and expensive tests to be run. Thus, the principles of narrative medicine provide patients with more engaged, authentic, and successful care, and this practice also provides

researchers with a richer understanding of patient experience and how patients choose to describe and tell positive and negative stories about physicians (Charon, 2001).

The Present Study

The present study utilizes a mixed-methods approach to assess patient perceptions of ideal physician characteristics, including knowledge, communication, and compassion, in relation to perceptions of overall quality of care among individuals with previously diagnosed chronic conditions. This study builds off of previous research that has either used closed- and open-ended questions to assess patient perception of physician characteristics and to examine patients' stories about medical care to better understand medical experiences. Specifically, I examined: (a) how do patients with chronic illnesses perceive their physician in terms of the physician's knowledge, communication, and compassion, and to what extent are these physician characteristics related? (b) do perceptions of physician knowledge, communication, and compassion predict perceptions of overall quality of care? (c) how frequently do patients describe instances of good (or bad) physician knowledge, communication, and compassion in their personal narratives of their best and worst medical experiences and when describing the physician characteristics most important to them? (d) is the frequency with which patients mention physician characteristics in personal narratives associated with the extent to which they view physicians as being knowledgeable, communicative, and compassionate? Based on the research reviewed, I hypothesized that patients who believe their physician communicates well and is compassionate are more likely to be satisfied with the overall quality of care they are receiving from their physician. Knowledge was not expected to be correlated with one another, but may be described in relation to communication and compassion when assessing a physician's behavior and qualities. I also expected that these three measures would uniquely predict aspects

of quality of care. Additionally, I expected that participants who are satisfied with the care they receive from their physician will include aspects of communication, compassion, and knowledge in their story describing their best experience with their physician and will describe a lack of these characteristics in stories about the worst experience with their physician.

Method

Participants

Individuals over the age of 18 with a chronic condition (71 female, 31 male, $M_{age} = 35$; $SD = 13.8$; age range: 18-94) were recruited from Prolific academic as study participants and the Rollins Institutional Review Board (IRB) approved this study. Prolific academic provides demographic screenings, micropayments, and ensures efficient recruitment of target respondents.

Procedure

Participants on Prolific Academic received a notification to participate in the study if they met the following criteria: over the age of 18 and suffered from a chronic condition or illness. Participants from around the world received \$7.65/hour to take the survey, which took approximately 15 minutes to complete. Participants first read a study description and provided consent before responding to the close- and open-ended survey questions and narrative prompts developed in Qualtrics. Commonly studied themes regarding patient perception of physicians in the literature were examined and knowledge, communication, and compassion were selected for further study. The mixed- method design of the study provided a holistic examination of the three physician characteristics to better understand patients' perceptions of physicians. Narrative researchers emphasize the role of narrative in understanding individuals' construed experiences shared in their own voices; participants' responses to the narrative prompts allowed for a more nuanced window into participants' perspectives about their illness and physician characteristics.

Data were exported to Excel, organized, and then imported into SPSS for analysis and qualitative responses to open-ended prompts and narratives were imported into Nvivo.

This approach to coding the qualitative data involved multiple, close readings through each participant response with a focus on the three themes of interest, while also capturing other relevant themes pertaining to quality of care such as professionalism. While professionalism was not assessed in the quantitative portion of the study because of an incomplete understanding of this physician characteristic, it was assessed in open-responses and narratives to learn more about this physician characteristic and its relevance to patients' perceptions of physicians and overall quality of care. A master Nvivo file containing all stories was shared between two independent researchers who coded separately and merged files back together. All discrepancies were discussed and resolved. This required three rounds of coding for the four themes until the researchers achieved acceptable reliability (Cohen's Kappa > .80). In addition to the construct definitions used in previous research, participants' responses to the open-ended questions also were used to help craft operational definitions of each physician characteristic that were then used to code the narrative responses (see Appendix A). Words and phrases could only be coded individually (see Appendix B).

Measures

The survey included multiple items requesting participants' demographic information: age, gender, type of chronic condition, and years since diagnosis of the chronic condition. Multiple measures of the physician's knowledge, communication, and compassion were assessed using previously established quantitative scales, open-ended questions, and narrative prompts (see Appendix A).

Survey scales. I assessed physician *knowledge* using a six item scale measuring physicians' holistic knowledge of patients including, but not limited to, patient roles and responsibilities at work, home and school, patient concerns about chronic condition, and patient values and beliefs on health in clinics and hospitals (Inoue et al., 2010). Each item on the scale was scored on a 6-point Likert scale (1= doesn't know at all to 6= knows very well). I averaged the items to compute an overall knowledge score for each participant ($\alpha = .908$). Participants ranked physician knowledge for statements such as patient "entire past medical history," "complete list of current medication," and "values and beliefs on health."

I assessed physician *communication* using seven items adapted from a physician-patient communication behaviors (PPCB) scale and measured on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) (Wachira, Middlestadt, Reece, Peng, & Braitstein, 2013). Items were averaged to compute an overall communication score for each participant ($\alpha = .92$) Scale items included statements such as "My doctor listens carefully to what I have to say." I chose the seven items from the nineteen item scale because of consistency with communication definitions from other scales and relevance to patient perceptions of general physician communication that were pertinent to the present study.

I assessed physicians' *compassion* using eight items drawn from an affective behavior scale measured on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) (Dimatteo et al., 1980). I averaged items to create an overall compassion score or each participant ($\alpha = .91$). Scale items include statements such as "The doctor really cares about me as a person. I'm just not part of his/her job." The eight items selected from the original nine item scale were perceived to be the most reflective of compassion alone and did not have direct overlap with other themes being examined in the present study.

Participants' perceptions of overall quality of care were assessed using the average of two items created for the present study: "The quality of care I receive from my physician is exceptional" and "Overall, I am satisfied with the care I am receiving from my physician."

Open-ended questions and narrative responses. Participants described in their own words the ways in which their physician possessed or lacked knowledge, communication, compassion, and professionalism on four open-ended prompts and questions: (a) describe the ways in which your physician shows compassion toward you and your condition; (b) describe the ways in which your physician exhibits professionalism; (c) how would you describe your physician's knowledge of you and your condition?; (d) how would you describe your physician's communication skills when interacting with you? In addition to the four characteristics, participants also described the quality that was most important to them in the physician managing their care for a chronic condition. Finally, participants responded to two narrative prompts: "Write a story about the best experience you have had with a physician" and "Write a story about the worst experience you have had with a physician." The addition of these prompts allowed participants to have the opportunity to share, in their own words, their positive and negative personal experiences with their doctors. Narrative responses were coded reliably for the frequency with which each of the four specific themes (knowledge: $k = .83$, communication: $k = .92$, compassion: $k = .90$, professionalism: $k = .80$) occurred within each response. Additional words or phrases that seemed to describe a particular physician characteristic that did not fit into the other four categories were coded as 'other'.

Results

Data analysis and results are described in terms of the over-arching research questions of the present study: (a) how do patients with chronic illnesses perceive their physician in terms of

the physician's knowledge, communication, and compassion, and to what extent are these physician characteristics related? (b) do perceptions of physician knowledge, communication, and compassion predict perceptions of overall quality of care? (c) how frequently do patients describe instances of good (or bad) physician knowledge, communication, and compassion in their personal narratives of their best and worst medical experiences and when describing the physician characteristics most important to them? (d) is the frequency with which patients mention physician characteristics in personal narratives associated with the extent to which they view physicians as being knowledgeable, communicative, and compassionate?

Associations among Perceptions of Physicians' Characteristics and Overall Quality of Care

To examine patients' overall perceptions of their physicians, I computed sample means and standard deviations for each physician characteristic. Knowledge scores ($M = 4.50$; $SD = 1.12$) indicated that physicians were knowledgeable about patients and their conditions. Communication scores ($M = 4.17$; $SD = .79$) indicated that, overall, participants strongly agreed that their physicians were good communicators. Compassion scores ($M = 3.78$; $SD = .65$) indicated that, overall, participants agreed that their physicians were compassionate.

I analyzed data using SPSS to address primary research questions regarding the relationship between physician behaviors and characteristics and patients' perception of overall quality of care. I conducted a series of Pearson's correlations to test associations among perceptions of the three physician characteristics and overall quality of care. Compassion was moderately correlated with the other physician characteristics (r ranged from .68 to .78) and strongly correlated with overall quality of care ($r = .80$). Similarly, communication was moderately correlated with the other physician characteristics and overall quality of care (r

ranged from .73 to .78). Knowledge also was moderately correlated with overall quality of care ($r = .78$) (see Table 1).

Physician Characteristics as Predictors of Patients' Perceptions of Overall Quality of Care

Next, to examine the variance in patient perceptions of overall quality of care uniquely explained by the three characteristics, I conducted a stepwise linear regression analysis using SPSS such that quality of care was regressed on knowledge, communication, and compassion. As shown in Table 2, Model 1 included compassion as the first predictor variable which explained 61.9% of the variance in quality of care. Model 2 included both communication and compassion: communication explained an additional 6.3 % of the variance in quality of care, for a total of 62.1% of the variance explained. Finally, Model 3, added knowledge as a predictor variable, which explained an additional 6.5% of the variance in quality of care for a total of 74.7% of the variance explained. The best fitting model (Model 3) included compassion, $t(102) = 4.41$, $b = .558$ (.127), $p < .001$, communication $t(102) = 2.261$, $b = .252$ (.111), $p = .026$, and knowledge $t(102) = 5.028$, $b = .340$ (.068), $p < .001$.

References to Knowledge, Communication, Compassion, and Professionalism in Best Experience Narratives

In narratives describing best experience stories with a physician, participants provided the most examples of communication and compassion followed by knowledge and professionalism. Participants mentioned communication up to three times in participant narratives describing best experiences with a physician ($M = .54$, $SD = .83$). Participants provided examples such as “He always takes extra time to spend on interaction with me, listening to my questions and answering them patiently” in best experience narratives. Participants mentioned communication once in 22.5% of cases, twice in 9.8% of cases, and three times in 3.9% of cases. Participants mentioned

compassion up to three times in participant responses ($M = .47$, $SD = .78$). They provided examples such as “I felt cared for and reassured on any concerns that I raised.” They mentioned compassion once in 23.5% of participant responses, twice in 5.9% of participant responses, and three times in 3.9% of cases. Participants referenced knowledge less frequently in best experience stories relative to communication and compassion, and referenced it up to two times in participant best experience stores ($M = .15$, $SD = .41$). Examples such as “She provided me with new information about future drugs that can reduce my pain” were provided once in 10.8% of stories and twice in 2% of stories. Professionalism was rarely mentioned in best experience narratives and was referenced up to two times ($M = .08$, $SD = .31$). Participants provided examples such as “My doctor is really confident and respectful of me” and provided examples of physician professionalism once in 5.9% and twice in 1% of narratives. A repeated measures ANOVA, testing differences in frequency of reference to the four characteristics, revealed that there are differences in how frequently participants discussed the four physician characteristics in best experience narratives, $F(3, 101) = 13.29$, $p < .001$. References to communication and compassion were not significantly different; however, there were significant differences in frequency of reference between each of the other factors, $p < .001$ for all.

References to Knowledge, Communication, Compassion, and Professionalism in Worst Experience Narratives

In worst experience narratives, instances of lack of communication were most common followed by compassion, professionalism, and knowledge. Participants referenced lack of communication up to two times in a given worst experience narrative and mentioned it once in 11.8% of cases and twice in 4.9% of cases ($M = .22$, $SD = .52$). Examples include: “She speaks too quick and rushed through the appointment without letting me ask any questions”. They

referenced lack of compassion in a worst experience narrative up to three times in a given narrative ($M = .18, SD = .50$). Examples such as “The doctor was laughing at me when I was explaining my problem” were provided once in 10.8% of stories, twice in 2% of stories, and three times in 1% of stories. Participants referenced a lack of professionalism up to three times in a single worst experience narrative ($M = .13, SD = .46$). Examples such as “The physician made me wait over twenty minutes, naked and under the gown’ and did not explain the reason for the delay” described a lack of professionalism in a physician patient interaction. They provided examples once in 5.9% of cases, twice in 2% of cases, and three times in 1% of cases.

Participants referenced a lack of knowledge in a worst experience narrative up to one time in a story ($M = .10, SD = .30$). Examples of lack of physician knowledge include: “My physician had seemed to forget the details of my condition.” Participants provided examples once in 9.8% of cases. A repeated measures ANOVA, testing differences in frequency of reference to the four characteristics, revealed that there are differences in how frequently participants discussed the four physician characteristics in worst stories revealed that there are no differences in references to the four characteristics, $F(3, 101) = 1.50, p = .21$.

Which physician qualities were deemed most important to participants?

When I asked participants to describe the most important quality for a physician to possess, compassion was described most frequently followed by communication, knowledge, and professionalism. Participants mentioned compassion up to three times in a single description: once in 28.4% of stories, twice in 5.9% of stories, and three times in 4.9% of stories ($M = .55, SD = .82$). Participants mentioned communication up to two times in a given story and referenced it once in 23.5% of stories and twice in 2% of stories ($M = .27, SD = .49$). Thus, they did not mention it in 74.5% of stories. Participants mentioned knowledge up to three times in a

story: once in 20.6% of stories, twice in 2% of stories, and three times in 1% of stories ($M = .27$, $SD = .55$). Participants did not mention knowledge in 76.5% of stories about the most important physician quality to participants. Finally, participants did not frequently reference professionalism as a very important quality for a physician to possess. They only mentioned it up to one time in a story and in 5.9% of stories ($M = .06$, $SD = .24$). Therefore, 94.1% of stories did not contain information about professionalism (Figure 1). Repeated measures ANOVA for most important physician quality descriptions revealed frequency of references are significantly different, $F(3, 101) = 1.74$ $p < .001$. There was no statistical difference between communication and knowledge means; however, there were significant differences between each of the other factors, $p < .001$ for all (Figure 1).

Is the frequency with which patients mention physician characteristics in personal narratives associated with the extent to which they view physicians as being compassionate, communicative, and knowledgeable?

I conducted a series of Pearson's r correlations to examine whether the number of examples of knowledge, communication and compassion in patient narratives correlated with perceptions of physician's knowledge, communication and compassion and perceptions of overall quality of care. References to communication in "best" experience stories were positively associated with instances of (poor or lack of) communication in "worst" experience stories ($r = .30$, $p = .002$), but there were no additional statistically significant associations between mention of physician characteristics in personal stories and corresponding characteristics assessed via close-ended survey measures.

Summary

Results revealed that communication, compassion, and knowledge were related, but explained unique variance in patients' perceptions of the overall quality of medical care received from the physician managing their chronic condition. Additionally, the number of examples participants provided in narratives and descriptions was not indicative of how communicative, compassionate, or knowledgeable their physician is according mean scores.

Discussion

The present study utilized a mixed-methods approach to assess patients' perceptions of ideal physician characteristics in relation to overall quality of care. Findings revealed that compassion, communication, and knowledge uniquely predicted patients' perception of overall quality of care. Additionally, participants included more examples of communication and compassion in best experience stories. The most examples of compassion, communication, and knowledge were provided in most important quality descriptions. There were not significant differences in frequencies in worst experience narratives. Frequencies did not correlate with mean scores of knowledge, communication, and compassion.

Associations among Physician Characteristics and Overall Quality of Care

As expected, communication and compassion were highly associated; both of these physician characteristics are critical to the development of a trusting relationship between the physician and the patient (Charles et al., 1999). It is no wonder that these characteristics are strongly related, as they employ elements of responsiveness and emotion to patient concern. Doctors demonstrate motivation and desire to reduce patients' suffering through verbal and non-verbal communication, acknowledging patients' struggle, and expressing concern and validation of patients' experiences. Further, communication and compassion are also central to

improvement of the emotional health of the patient and patient understanding of a condition and treatment plan, which have been shown to play a role in both patient perceptions of a physician and perception of overall quality of care received from a physician (Fong Ha et al., 2010).

Compassion and communication exemplify humanistic elements of medicine, and both significantly contribute to treatment of a patient as a person (Stewart et al., 1999). Additionally, a combination of communication and compassion incorporates elements of empathy, which is a person's ability to understand and feel what another person is feeling. This strong association between communication and compassion suggests empathy may be another dimension to explore further when studying physician's characteristics and interactions with patients (Hojat et al., 2002).

As expected, physician knowledge, a vital component of patient care, was strongly associated with other physician characteristics and high overall quality of care. A comprehensive understanding of conditions and diseases, the skill set and experience to manage conditions, and knowledge of the patients medical and personal history are crucial to proper patient treatment (Bryant, Lande, & Moshavi, 2012). It is not surprising that doctors perceived as knowledgeable about patients' conditions and medical and personal history were also perceived to possess strong communication skills and be compassionate. This finding is consistent with research by Shay (2012) who found that positive physician communication was associated with patient perception of the physicians' understanding of the patients' conditions and values, and it provides support for the associations and benefits of incorporating positive communication and knowledge of the patient in appointments. The association between knowledge and communication may also be explained, in part, by the fact that increased communication between the physician and patient facilitates more opportunity for the physician to learn more

about the patient in terms of personal history, symptoms, and management of the chronic condition (Bryant et al., 2012).

The need for well-rounded physicians who are knowledgeable, communicate well, and are compassionate is captured by the narrative research of Bendapudi (2006). For example, one patient said: “We want doctors who can empathize and understand our needs as a whole person... We want to feel that our doctors have incredible knowledge in their field. But every doctor needs to know how to apply their knowledge with wisdom and relate to us as plain folks who are capable of understanding our disease and treatment... We would like to think that we’re not just a tumor, not just a breast, not just a victim.” This narrative exemplifies the interplay between the three characteristics and how a physician who provides patients with high quality care is likely to communicate well with patients, care for and be compassionate toward them, and be knowledgeable about both the patient and condition to ensure that the patient is taken care of physically, mentally, and emotionally.

Perceptions of Physicians’ Compassion, Communication, and Knowledge Predict

Perceptions of Overall Quality of Care

Perceptions of physicians’ compassion, communication, and knowledge uniquely predicted perceptions of overall quality of care, explaining approximately 75% of the variance in this outcome measure. This indicates that while physician compassion, communication and knowledge are associated and often co-vary, such that compassionate doctors also tend to be good communicators and knowledgeable, they are independent constructs that uniquely explain patients’ overall satisfaction with and appraisal of their medical care. Previous research studying patient satisfaction supports this finding by revealing that patients’ perceptions of one aspect of care are highly associated with perceptions of other aspects of care (Dimatteo et al., 1980).

However, the present study is novel in its attempt to examine these similar and strongly associated qualities simultaneously as they relate and explain unique variance in patients' perceptions of overall care.

References to Compassion, Communication, Knowledge, and Professionalism in Patients' Personal Narratives about Best and Worst Experiences with a Physician and Overall Quality of Care

Close-ended survey responses provide a limited understanding of patient experiences, impression of a physician, and perceptions of quality of care. In addition to assessing perceptions of various physician characteristics validated by past research, I asked participants to share unique medical stories in their own voices, which allowed for a more nuanced understanding of the complexity of patients' perceptions of physicians' knowledge, communication, compassion, and professionalism that are important to positive medical experiences (Weiss & Midelfort, 2006). Operational definitions of the three physician characteristics and professionalism were enhanced by descriptors and examples of physicians that were provided by participants when they described how their physician exhibited knowledge, communication, compassion, and professionalism, in open-response questions and best and worst stories. Participants shared detailed and complex stories about their best and worst experiences with a physician. These stories included mention of physicians demonstrating compassion, knowledge, and professionalism (or a lack thereof), and being good (and bad) communicators. Communication and compassion were referenced more frequently than knowledge and professionalism in stories about best experiences. In descriptions of most important physician qualities, compassion was described most frequently and was statistically different than other frequencies. High frequency of compassion references are consistent with the stepwise regression model suggesting that

compassion was responsible for explaining the most variance in overall quality of care. Knowledge and communication were not statistically different, but professionalism was referenced significantly less than the other characteristics. This is consistent with previous research, which has shown that patients deeply value and are impacted by the communication skills and compassion shown by their physicians (Emanuel & Dubler, 1995).

The frequency with which participants discussed examples of the four physician characteristics of interest in their personal narratives was not associated with perceptions of physicians' knowledge, communication, compassion or the importance they placed on physician professionalism. This could be because frequency of examples in narratives do not accurately assesses the importance of the characteristics. Another possibility is that the evaluation or rating of the characteristics in the patient narratives are particularly important. In the present study, a narrative response received a communication score of 1 when a patient spoke very highly of a physician because of his or her history of good communication skills as well as when a patient simply referenced an isolated instance in which a physician asked a question or listened to the patient. Future studies may benefit from going beyond counting frequencies of references to physician characteristics and rating the degree of each characteristic (communication, for example) in personal medical narratives.

Limitations of the Present Study

The present study offers insight into a few of the dimensions that comprise perceptions of physicians' characteristics and explain overall perceptions of care, but does not provide a complete understanding of all quality of care determinants of patient perception of overall quality of care. The three dimensions that were chosen were selected with intent to examine both similar and different dimensions of care to assess how greatly patient perceptions were

influenced by diverse determinants. Exclusion of a professionalism scale limits understanding of professionalism in relation to the other three characteristics, but the descriptive professionalism data provides rich description and insight to patient perceptions of professionalism. Focus on only three physician characteristics is limiting because of diversity of factors that have potential to influence perceptions of quality of care, such as outcomes or physician availability.

Additionally, this study does not evaluate the ratings and degree of dimensions in participant stories about their best and worst experiences with a physician. The present study also required participants to write their medical stories anonymously on an online survey platform. One of the powerful features of stories is that they are told to and heard by someone. These patients may have elaborated even more on their best and worst medical experiences if they were writing or orally sharing their stories with a known audience. Additionally, results are limited by cryptic participant responses and responses stating that there was not a best or worst experience to report.

Future Directions

In addition to the three significant correlates of patient perception of overall quality of care established in the present study, understanding additional factors that predict patients' perceptions of their overall medical care would be beneficial in future study. Additionally, development of a scale to accurately and effectively assess professionalism would provide a more complete understanding of this physician characteristic and its relevance to patient perceptions of physicians and overall quality of care. In addition to the four characteristics coded in narrative responses, other potential factors mentioned in participant stories and coded as 'other' could be examined in future study, such as patient outcomes, accessibility of physicians, and thoroughness or comprehensiveness of patient visits. Additional research examining the role

of a physician in relation to patient perceptions of medical care experiences would offer valuable insight into gender stereotypes and disparities in healthcare. It would also be interesting to examine if patients' perceptions of physicians and overall quality of care received differed based on patients' chronic condition.

Study Applications

The present study is applicable to students aspiring to pursue a career in medicine, student physicians, and practicing physicians. Exposure to new people and experiences outside of academia are important for pre-medical students to develop necessary interpersonal skills. Development of these skills is also important for medical students who are just entering the profession. In the first years of medical school when students are learning how to conduct patient examinations, it is important to learn and have an early awareness of the communication and compassion needed with patients to improve comfort level, trust in their physician, and perception of care they are receiving. Developing habits of communicating clearly, listening to a patient's story, and using terms that someone who is not a doctor could understand are important skills to learn as a physician. Practicing physicians can also benefit from results presented in this study by having a greater awareness of the importance of being compassionate and communicating well with patients in addition to being knowledgeable and up to date with the latest medications and procedures. Understanding that communication and compassion are so important to patients in their assessment and impression of their doctor and the care they are receiving from the doctor could influence aspiring and practicing physicians to have a greater awareness and strive to improve interpersonal skills for the benefit of patients. Incorporation of these dimensions will enable physicians to enhance communication with patients while also providing competent, compassionate care.

In sum, the present study expands upon current research that has examined single physician characteristics that may relate to quality of care by providing insight into how multiple dimensions of care are interrelated. Additionally, this mixed methods approach is novel as it combines qualitative analysis of rich participant responses that provide valuable insight into patients' unique experiences with physicians with previously validated quantitative measures in this field.

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Table 1

Inter-correlations for the communication scale, compassion scale, professionalism scale, knowledge scale, and overall quality of care (N=102)

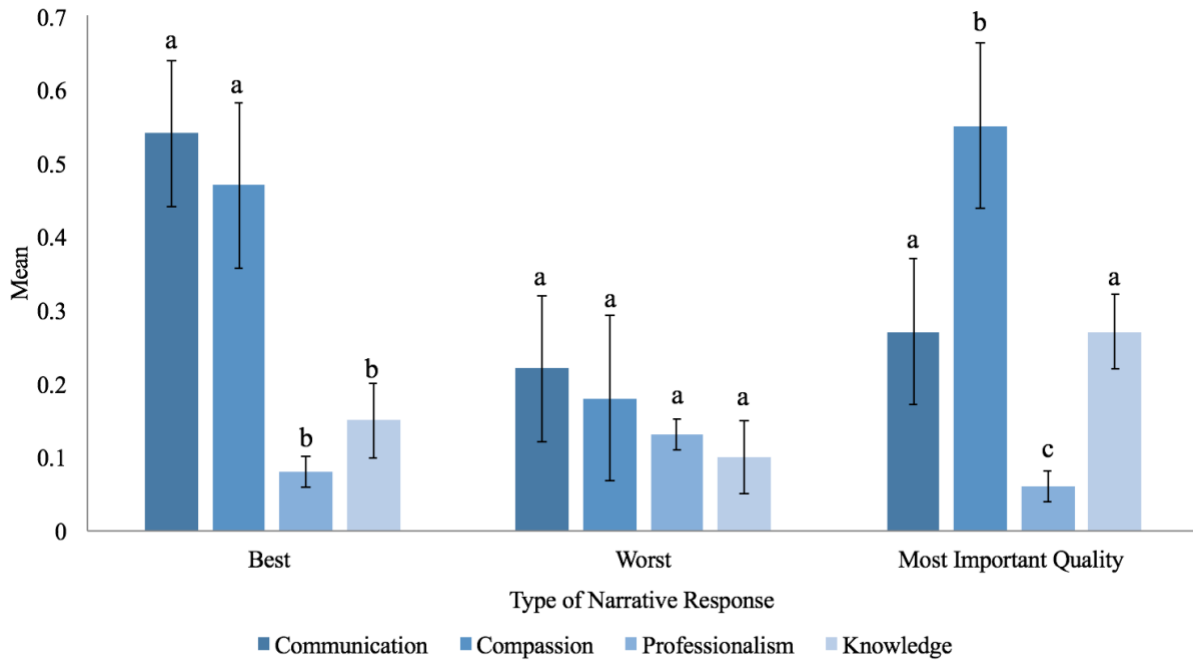
Measure	1	2	3	4	M	SD
1. Communication	1				4.17	.79
2. Compassion	.776**	1			3.78	.65
3. Knowledge	.728**	.677**	1		4.50	1.12
4. Quality of Care	.769**	.798**	.782**	1	4.05	.985

Note. *p < .05. **p < .01. ***p < .001

Table 2

Associations between physician characteristics and patients' perception of overall quality of care (N = 102).

Variable	<u>Model 1</u>				<u>Model 2</u>				<u>Model 3</u>			
	B	SE B	β	p <	B	SE B	β	p <	B	SE B	β	p <
Constant	-.456				-.753				-.639			
Compassion	1.193	.094	.787	.001	.724	.136	.478	.001	.558	.127	.368	.001
Communication					.496	.112	.398	.026	.252	.111	.202	.026
Knowledge									.340	.068	.386	.001
R ²	.619				.682							
ΔR^2					.063				.065			



Note. Within each story, bars that contain different symbols indicate a statistically significant difference in the mean number of references

Figure 1. Means of four physician characteristics in best and worst stories. The number of instances of communication, compassion, professionalism, and knowledge in best and worst experience stories and descriptions of most important quality for a physician to possess.

Appendix A

Age (in years)

Gender

- Male
- Female
- Transgender
- Do not identify

What chronic condition do you suffer from?

Years since diagnosis

- less than 1 year
- greater than 1 but less than 5 years
- greater than 5 but less than 10 years
- more than 10 years

Describe the ways in which your physician shows compassion toward you and your condition.

Describe the ways in which your physician exhibits professionalism.

How would you describe your physician's knowledge of you and your condition?

How would you describe your physician's communication skills when interacting with you?

What is the most important quality your physician possesses that is relevant to your care? why?

Write a story about the worst experience you have had with your physician.

Write a story about the best experience you have had with your physician.

Please answer the following questions about how your physician communicates with you.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
My doctor encourages me to express my thoughts concerning my health problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My doctor listens carefully to what I have to say.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My doctor understands what I have to say.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My doctor checks to make sure I understand everything.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My doctor gives me as much information as I want.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My doctor responds to my questions and concerns.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My doctor encourages me to ask questions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please answer the following questions about your physician's compassion toward you and your condition.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
This doctor really cares about me as a person. I'm not just part of his/her job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This doctor acts like I don't have any feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This doctor always treats me with a great deal of respect and never "talks down" to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This doctor always relieves my worries about my medical condition.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This doctor doesn't act like I'm important as a person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel this doctor does not take my problems very seriously.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This doctor is always very kind and very considerate of my feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This doctor usually does not try to make me feel better when I am upset or worried.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rank physician knowledge for the following statements.

	Doesn't know at all	Knows little	Doesn't Know well	Knows to some extent	Knows well	Knows very well
Complete list of current medication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entire past medical history	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
History of allergy to drugs and food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What worries me most about my health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Values and beliefs on health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Roles and responsibilities at work, home, or school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix B

Coding Categories: The following definitions incorporated operational definitions from Wachira, Middlestadt, Reece, Peng, & Braitstein, 2013, Dimatteo et al., 1980, Inoue, Inoue, & Matsumura, 2010, Wiggins et al., 2009, Davis et al. 2006 and examples from respondents description of each behavioral theme.

Communication

- A. Expressions that describe a physician as someone who encourages the patient to ask questions and express thoughts, listens, and understands what the patient has to say. Code if the participant suggests that the physician ensures that the patient understands everything and provides the patient with as much information as he or she wants. Additionally, code for expressions describing physicians that communicates well and is able to explain things in terms the patient can understand. This also includes language related to speech, remarks, judgments. The focus should be on the physician's communication and not the patient's communication.
- a. Best experience
 - i. *Signal words/phrases:* listens, clarifies, clearly communicates, ensures I understand, nonverbal, explains, phrases things well, open dialogue
 - ii. Example of communication in a "best experience" story
 1. "He is always happy to listen to me and answer questions" (2 separate cases of communication)
 - b. Worst experience
 - i. *Signal words/phrases:* does not listen, does not clarify, never communicates clearly, explains things using phrases I don't understand
 - ii. Example of lack of communication in a "worst experience" story
 1. "I often feel talked at, rather than talked to"
- B. **Disclaimer:** Respondents often talk about communication and compassion simultaneous or as part of the same story. Be careful not to code someone that is actively listening as compassion. Additionally, "openness" should not be coded as communication.

Compassion

- A. Expressions that describe a physician as someone who cares or express concern about the patient as a person, acknowledges the patient's feelings and is kind and considerate, and treats the patient with respect and is not condescending. This also includes a physician's ability and desire to relieve the patient's worries and take the patient's problems seriously. Additionally, code if the patient references the physician's desire to make the patient feel better when he/she is upset or worried.
- a. Best experience
 - i. *Signal words/phrases:* kind and emotionally supportive, sensitive, caring, actively trying to help, looks out for me, reassuring
 - ii. Example of compassion in a "best experience" story
 1. "Always makes the effort to make sure I am comfortable"

- b. Worst experience
 - i. *Signal words/phrases*: tough, not considerate, not comforting, patient not comfortable
 - ii. Example of lack of compassion in a “worst experience” story
 - 1. “No consideration about how I felt”
- B. Disclaimer: Respondents often talk about communication and compassion simultaneously or as part of the same story. Be careful not to code someone that is actively listening as compassion. Additionally, do not code friendly as compassion.

Professionalism

- A. Expressions that describe a physician as someone who takes the time necessary to meet with the patient (does not appear rushed) and apologizes if running late, has a neat appearance, and introduces himself/herself pleasantly. This also includes a physician that exudes confidence.
 - a. Best experience
 - i. *Signal words/phrases*: polite, respectful, courteous, timely, smartly dressed, confidential, respects privacy, white coat
 - ii. Example of professionalism in a “best experience” story
 - 1. “shook my hand, was well dressed, and took the necessary time to address all of my concerns” (3 separate cases of professionalism)
 - b. Worst experience
 - i. *Signal words/phrases*: late, disrespectful, sloppy, careless, not prepared, rushes me
 - ii. Example of lack of professionalism in a “worst experience” story
 - 1. “Tends to be always running late to appointments”
- B. Disclaimer: Would not code for professionalism or lack of professionalism in cases of problems with office scheduling, doctor being busy, or doctor not being accessible. Code for waiting that is specific to the physician. Additionally, time does not necessarily count as an example for (or against) professionalism.

Knowledge

- A. Expressions that describe a physician as someone who knows how to manage the patient’s condition well and knows patient medical history and current medications. Also code for statements suggesting physician knowledge of patient values and beliefs on health in addition to what worries patients most about their health.
 - a. *Best experience*
 - i. *Signal words/phrases*: educated, knows a great deal, complete knowledge, knows me as a person, knows me as a patient, up-to-date, high level of knowledge, remembers me and my condition, does not make hasty decisions, and ensures that the patient receives the best treatments possible
 - 1. Example of knowledge in a “best experience” story
 - a. “she tried to keep up with the latest drugs and developments”

- b. “advised me on my condition and gave me treatment to help”
 - c. “stays up-to date”
 - b. Worst experience
 - i. *Signal words/phrases*: poor knowledge, not experienced, unable to manage my condition, limited knowledge
 - 1. Example of lack of knowledge in a “worst experience” story
 - a. “I was sent home while having a heart attack, she totally missed it”
 - b. “No consideration of how my pregnancy could affect my condition”
- B. Disclaimer: Knowledge is unrelated to physician’s passion for medicine.

Other

- A. Patient outcomes
 - a. Expressions that describe a physician or quality of care based on the patient’s outcome after an injury, procedure, or surgery
- B. Accessibility
 - a. Expressions that describe how busy the physician and may include mention of wait times to get an appointment.
- C. Comprehensiveness
 - a. Expressions that describe a physician as someone who does not appear rushed, takes his time, and completes a full and thorough examination.
- D. Discussion of family involvement or interactions
- E. A physician being very “matter of face”
- F. Disclaimer: Code for accessibility and not professionalism or lack of professionalism in cases of problems with office scheduling or doctor being busy. Code for waiting that is specific to the physician.