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RACE, GENDER AND HEALTH LITERACY IN THE MEDICAL ENCOUNTER: A TEST OF CULTURAL HEALTH CAPITAL AND STATUS CHARACTERISTICS THEORY

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RACE, GENDER AND HEALTH LITERACY IN THE MEDICAL ENCOUNTER:
A TEST OF CULTURAL HEALTH CAPITAL
AND STATUS CHARACTERISTICS THEORY

A THESIS APPROVED FOR THE
DEPARTMENT OF SOCIOLOGY

BY

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I dedicate this thesis to my husband, Dr. Antony Miller, my family, and friends.

I could not have made it here without all of your support and encouragement.

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Abstract

The doctor-patient relationship is a form of social support that influences patients' health. Doctor-patient communication impacts doctor-patient relationships and ultimately patients' health outcomes. Physicians' communication styles have been shown to vary based on certain patient characteristics. The variation in communication styles may lead to health disparities by way of communication inequalities between provider and patient. Using Cultural Health Capital (CHC) and Status Characteristics Theory (SCT), we examine what elements most influence a patient-centered medical encounter. The research question guiding this study is: Do patients' cultural health capital influence the type of encounter that he or she experiences more or less than his or her status characteristic? Using a sample of 121 patients and seventeen (17) physicians from a family medical group, we perform binary logistic regression to test these research questions. Our results suggest that as race status characteristic differences increase between doctor and patient, the likelihood of patient-centered encounters occurring, decrease. Furthermore, our results suggest that lower health-literate patients are more likely to experience patient-centered encounters.

Key words: cultural health capital, cultural capital, status characteristics theory, doctor-patient relationships, doctor-patient interactions, medical visit, medical encounter, health literacy, and paternalism.

Chapter 1: Introduction

The U.S. healthcare system is at a pivotal time in history. Not only has the health system changed drastically over the past two decades, but also it is experiencing a shift in the way that the healthcare institution delivers care. In the past, doctors made house calls to see sick patients (Starr 1982). Today, doctors are generally part of a managed care medical group, and patients see doctors at a medical office in a brief visit. Changes to the current healthcare system are further seen in the way that doctors and patients interact with each other. In the past, doctors (generally white males) may have withheld medical information from patients because, in their view, it was in the best interest of the patient to not know everything that was wrong medically (Starr 1982:391). The doctor being considered the expert, and the patient being considered in-need, their relationship began with an imbalance. That is, the doctor held more power and prestige than the patient, and the patient was expected to passively follow the doctor's instruction (like father to child) (Parsons 1951).

Today, healthcare delivery is different than in the past. There are still doctors who interact with patients in a paternalistic manner, and generally doctors are still held in high esteem, however, there are also doctors and patients meeting on more equal grounds. Today, doctors and patients come together in a short office visit to discuss the patient's ailments while the doctor tries to make a diagnosis within the brief timeframe. The interaction between doctor and patient is a critical aspect of our healthcare system (Roter and Hall 2006). Fundamental to this being a productive relationship for both doctor and patient is superior communication between them (Roter and Hall 2006:4). Communication from providers has been shown to impact patient satisfaction, treatment

compliance, patient trust (Ackerson and Viswanath 2009; Roter and Hall 2006), and patient engagement (Alexander et al. 2012). With insufficient doctor communication, patients are less trustful of their physicians, less satisfied with their care, and less likely to adhere to treatment directives (Keating et al. 2002; Roter and Hall 2006); all of which can impact the health of the patient.

When doctor-patient relationships are poor, it not only impact patients' health, but also it can have indirect costs beyond the doctor-patient relationship, such as patient psychosocial distress, and economic costs, such as unnecessary treatment costs, and patients paying for extras out-of-pocket, like mailing completed informational packages prior to meeting with their doctors (Thorne et al. 2005). Costs of inefficient doctor-patient communication can also be seen in physician burnout, emotional exhaustion, and dissatisfaction (Roter and Hall 2006:159-61). Studies have demonstrated that a stronger focus on psychosocial interventions within healthcare can reduce overall costs of healthcare, such as billing costs (Simpson et al. 2001; Thorne et al. 2005).

A large body of literature demonstrates the impact of doctor-patient communication on patient and physician health outcomes. There is less literature focusing on the mechanisms that influence communication between doctors and patients. In this study, we examine factors that influence doctor-patient communication. Specifically, we examine the influence of cultural health capital (CHC) and status characteristics theory (SCT) on doctor-patient communication. CHC intends to help explain the interaction between a doctor and a patient within a medical setting, whereas SCT helps to explain differences in communication styles between two people based on their status. Using a dataset consisting of 121 patients' audio-recorded medical visits,

we explore the research question of: *Do patients' level of cultural health capital influence the type of encounter that he or she experiences more or less than his or her status characteristic?* The results of this study will build on existing knowledge of doctor-patient communication and its impact on the doctor-patient relationship. This study will provide a deeper understanding of the elements that influence doctor-patient communication. Understanding what factors most influence the type of doctor-patient encounter that occurs could help ameliorate health disparities.

The current mode of healthcare delivery occurs primarily through patients meeting with doctors. The doctor-patient encounter is the context in which ailments are discussed and treatment decisions are made. What is discussed in the encounter, and its evolution has distinct consequences. As long as healthcare is delivered primarily in a meeting between doctors and patients, it is imperative that their communication during the medical visit is productive.

Chapter 2: Doctor-Patient Encounter

Encounter Overview

It is well documented that doctors have enjoyed a unique power position in the United States. Parsons (1951) supplied the framework, and others have extended his initial framework. The rise of the medical profession was well documented in Paul Starr's work (1982), and Eliot Freidson (1970) developed and outlined the perspective of professional dominance on how occupations achieve and maintain status in society. Studies have documented the occupational prestige of the medical professional, particularly doctors. Constantly ranking at the top for occupational prestige are physicians (Hauser and Featherman 1977; Nakao and Treas 1989). These factors taken

together illuminate how physicians gained and maintained their imbalanced power over patients.

Power differentials between patients and doctors are deeply rooted in our society (Starr 1982). These power differentials are displayed through the traditional passive patient, and the dominant paternalistic physician when patients and physicians communicate in the medical encounter (Charles et al. 1999). But, the traditional roles of doctor and patient have become inconsistent with the current healthcare climate. New roles are comprised of engaged patients and supportive physicians (Alexander et al. 2012), which the traditional model of paternalism does not afford.

Doctor-patient communication during the medical encounter is an essential aspect of the development of the doctor-patient relationship (Roter and Hall 2006:4). The doctor-patient relationship forms specifically during the medical visit. The medical visit interview is the primary mode of health related care in that physicians and patients conduct a dialogue regarding the patient's medical situation (Roter and Hall 2006). The average length of the medical visit interview is 17 minutes (Shaw et al. 2014). The medical interview consists of 14 elements and three main functions (Goold and Lipkin 1999) (Figure 1). The three main functions of a medical visit are gathering patient information, developing a productive relationship, and communicating ailments and treatment options. These functions are interwoven. For example, a nervous patient will not fully understand what the physician is saying; an untrusting patient will not fully disclose medical information to the physician. Therefore, the nature and completeness of the information obtained is directly determined by the quality of the relationship (Goold and Lipkin 1999:26).

The 14 elements of the medical visit, shown in Figure 1, may also impact the quality of the doctor-patient relationship. Ineffective use of the visit elements can result in poor communication between doctor and patient, which in turn affects their relationship. A few examples of ineffective use of visit elements are physicians not answering patients' questions clearly, not taking adequate time to answer patients' questions, or not giving patients enough medical information (Keating et al. 2002). Furthermore, there can be misdiagnoses (Mamede et al. 2016), dissatisfaction, and lower patient trust of the physician (Keating et al. 2002) when communication is poor between doctor and patient.

Effective use of these elements, however, result in patients feeling heard, respected, and cared for, as well as patients having the opportunity to communicate ailments and understanding (Goold and Lipkin 1999). Additionally, when doctor-patient communication is superior, there are more accurate diagnoses, more effective medical interventions, improved quality of life, quicker recoveries, higher satisfaction (Roter and Hall 2006:6), as well as more informed decisions by patients (Matusitz and Spear 2014).

Doctor-Patient Characteristics and Communication

Physicians' and patients' communication styles can be based on participants' characteristics, such as race, gender, or health-literacy skills. For example, a qualitative study showed that when patients and doctors came from different cultural backgrounds (i.e., a discordant encounter) patients felt uncomfortable divulging personal information because they believed doctors from different cultures might not identify with their concerns. The authors posited that due to structured medical interviews (i.e., scripted

communication from physicians) that there was not much leeway for patients to discuss cultural barriers and concerns (Gao et al. 2009). In addition, Peck and Denney (2012) found that when non-white patients met with white doctors, these patients experienced encounters that were physician-dominant (i.e., the physician controls the visit and the patient is passive) versus when white patients met with white doctors (p.10). This physician-dominant encounter was also shown to occur for female patients who met with male doctors (p.10).

Furthermore, a recent study showed that physicians offered more information to patients who they perceived as having more health-literacy skills (Dubbin, Chang, and Shim 2013). This study, which utilized 23 in-depth interviews, suggests physicians value efficiency, patients who appeared educated, and patients who had a better understanding of their medications and medical history. For example, one physician explained that his first impression of a patient determined how he interacted with that patient. Otherwise, it would be "wasting time" to have "your wheels spin" with patients who are "clueless" about their medical situation (p.116). This study showed that patients with CHC (i.e., health-literacy skills, and the ability to communicate with the physician in a medical dialogue) are better equipped to process information, and better able to communicate with their practitioner, which were health skills that physicians in this study valued (Dubbin et al. 2013). Effective communication between physician and patient is critical given the different roles that both can exhibit during the medical visit.

Doctor-Patient Encounter Typologies

The roles that physicians and patients play in the medical encounter are important factors that shape the medical visit, and are even more important in building

the doctor-patient relationship. A positive doctor-patient relationship results in satisfied patients who are more likely to return to that doctor to continue their care, and less likely to switch doctors, change health plans, or file malpractice claims (Roter and Hall 2006). The doctor-patient relationship in the medical encounter has gone through a transition in the past 20 or so years. While the paternalistic relationship is not completely gone (Falkum and Førde 2001), the roles that doctors and patients embody in the medical encounter can take on other forms now. An often used schema of the doctor-patient encounter are the four typologies developed by Roter and Hall (2006), which are paternalistic, mutuality, consumerist, and default. These four typologies use control and influence of the doctor and patient in the encounter, shown in Figure 2.

The *paternalistic* model refers to a more traditional encounter than the other types of doctor-patient relationship encounters. It is considered to be high-physician control and low-patient control. Typically, the paternalistic encounter involves a physician who acts authoritatively by directing the visit, setting the agenda, and dictating what the patient needs to do for his or her ailment (Parsons 1961; Roter and Hall 2006). In this encounter, the doctor uses closed-ended questions, and the patient takes on a passive role following the doctor's directions. Patients are limited in what they communicate when physicians ask only closed-ended questions. Consequences of this encounter entail possible manipulation or exploitation of medical authority, and patients feeling unable to discuss their ailments (Roter and Hall 2006:29).

Historically, paternalism has been defined as "interference with a person's liberty of action justified by reasons referring exclusively to the welfare, good, happiness, needs, interests or values of the person being coerced" (Weiss 1985:184).

Medical paternalism is thought to be similar between doctors and patients. That is, the physician's interference with the patient's "freedom of action," but qualifying it as being what is best for the patient (Weiss 1985:184). Examples of medical paternalism in history are physicians who would refrain from telling patients everything regarding their medical illness because physicians thought it was in the patient's best interest; and surgeons who suggested not informing patients of the nature of a serious operation until right before a procedure so that the patient would not withdraw themselves from having the surgery (Weiss 1985). To doctors, the less patients knew, the less likely they would question doctors' orders and authority (Roter and Hall 2006:24). Paternalistic doctors worked hard to keep their status position in society. For example, in the 1970's, paternalistic doctors would not share information with women patients, nurses, or healthcare practitioners in general (Starr 1982:391). This misuse of medical authority put the patient's health and life at risk. Today's medical paternalism looks different than it did in the past, but it can still result in negative consequences for patients.

The second type of doctor-patient relationship is the *mutuality* model, which is considered by many to be an optimal relationship for doctors and patients (Goold and Lipkin 1999; Hibbard et al. 2004; Kaplan et al. 1989). In this relationship, there is high physician control and high patient control. Mutuality model is said to be relationship-centered with more collaboration between doctor and patient during the medical visit than under the paternalistic model. In this model, physicians and patients both bring strengths and resources to the relationship and a commitment to work together. The patient discusses his or her issues openly and the physician works with the patient to assist in the articulation of issues. Once these issues are discussed, and expectations are

verbalized, negotiation of treatment decisions between the two participants can begin (Roter and Hall 2006:35). Research shows that patients who are engaged in the medical encounter report more satisfaction, have fewer physical limitations, and have greater adherence to treatment plans. In this relationship, there is a meaningful and necessary exchange that allows patients to be heard and physicians' perspectives to be appreciated (Roter and Hall 2006:36).

The third type of doctor-patient relationship is the *consumerist* model, which is referred to as patient-centric with high-patient control and low-physician control. In this model, patients direct the visit, and make decisions (Roter and Hall 2006:26); physicians are there to accommodate patients' requests with their role being more of a technical consultant. This model showcases a "marketplace transaction" (Roter and Hall 2006:27) with physicians selling noncurative services, such as annual check-ups and examinations. Research shows that patients with more education, as well as younger patients, are most likely to espouse this consumerist approach in the medical encounter (Roter and Hall 2006:32). Taken together, *mutuality* and *consumerist* relationship types represent patient-centered medical encounters, which is the focus of this study.

The last type of doctor-patient relationship is the *default* model, which is referred to as low-patient and low-physician control. This model is not a common type of doctor-patient relationship. In this model, both doctor and patient have "defaulted" their control. Both parties may be at odds with one another and the two cannot negotiate. Their relationship is at a dysfunctional standstill with unclear goals and roles (Roter and Hall 2006:37). A patient may feel frustrated, angry or untrusting, therefore he or she may withdraw from care, with the physician unaware of the reason the patient

left his or her practice. In a worst-case scenario, the physician may receive a malpractice complaint. Interestingly, it has been shown that physicians who were sued spent less time with patients, used less humor during their visits, and were less likely to seek patients' input about care during the medical visit. It is believed that most malpractice complaints would not be filed if patients were not angered or dissatisfied over failures in the doctor-patient relationship (Roter and Hall 2006:37-8).

Medical encounters can develop differently depending on certain factors. Roter and Hall (2006) offered four encounter types as a way to understand power relations in the medical encounter between doctor and patient (p. 26). We do not know why one encounter type may be more relevant than others, or why some encounters are paternalistic or patient-centered. The type of doctor-patient encounter that occurs could be related to doctor and patient characteristics. Patients' cultural health capital or status characteristic differences may be related to the doctor-patient relationship that occurs. Therefore, this study examines these frameworks in more detail in order to understand the doctor-patient relationship. This study focuses on a comparison between cultural health capital and status characteristics theories and their influences on the doctor-patient relationship.

Chapter 3: Theoretical Framework

The theoretical frameworks guiding this study are cultural health capital (CHC) and status characteristics theory (SCT). Using these theories, we examine patient and physician characteristics that most influence the medical encounter. Additionally, we compare the influence of these two theories on the outcome of the medical encounter. SCT has a long history showing the importance of how a status-organizing process

transpires in which "beliefs about the characteristics of actors become the basis of observable inequalities in face-to-face social interactions" (Berger, Rosenholtz, and Zelditch 1980:479). CHC is a fairly new theory that attempts to show how patient and physician capabilities, cultural skills, and communication styles, may impact the medical encounter and doctor-patient relationship (Shim 2010). Although SCT is a well-established theory in explaining inequalities in communication, we are one of the first to empirically test whether CHC can help elucidate how doctors and patients interact in the medical encounter.

Cultural Health Capital

CHC is derived from Bourdieu's cultural capital, and extends cultural capital knowledge and skills to a healthcare setting. By definition, cultural capital is the accumulation of resources, both tangible and intangible, which affords an individual certain advantages within society and showcases the individual's class position. Cultural capital specifically encompasses, but is not limited to, an individual's predispositions, language, style of dress, and educational attainment (Grenfell 2012). Bourdieu thought of cultural capital more as a social stratification process where cultural processes could impact life chances for individuals (Abel 2007). Cultural capital is said to be situational, meaning that cultural skills are valued differently in different social contexts and in relation to other's social positions (Bourdieu 1986; Pinxten and Lievens 2014). An arbitrary value placed on certain artifacts or skills and not on others creates an imbalance in power and prestige (Grenfell 2012).

Possessing cultural capital yields personal gains due to having the ability to acclimate to given situations (Grenfell 2012). For example, someone with cultural

capital will have a better understanding of how to navigate when entering a new social situation and appear natural while doing so (Grenfell 2012). Accordingly, the ability to acclimatize in a medical setting is also connected with an individual's cultural capital. Certain types of cultural capital are more influential in a medical setting than other cultural capital types, such as experience in a healthcare setting, education level, ability to communicate with the doctor, and literacy level (Grineski 2009). When individuals lack cultural capital, this can negatively affect medical outcomes, such as patients not understanding treatment options, and making ill-informed decisions (Grineski 2009). CHC, then, centers these cultural skills to a healthcare setting. Health skills may include how well patients understand medical information presented to them by physicians, and how well patients communicate with physicians (Madden 2015). Additionally, health skills include how patients process medical information in order to make informed health decisions (Eberle 2013). CHC is thought to be more of a "toolkit" (Shim 2010:3) for patients in that employing cultural health skills in the medical encounter helps patients improve their relationship with physicians (Dubbin et al. 2013; Shim 2010). Cultural aptitudes that are part of CHC directly affect patients' understanding of their medical situations. A lack of these cultural health skills would specifically impact patients' communication and level of engagement during the medical encounter (Katz et al. 2007; Shim 2010). With respect to the current study, a patient's cultural health capital skills would help inform him or her on how to interact with the physician. That is, patients with cultural health capital would have abilities to ask health-related questions, explain their medical history, and engage in a medically relevant dialogue

with their doctor. Therefore, it is critical that patients display these health skills during the medical visit when they meet with physicians.

Status Characteristics Theory

SCT is a component of the expectation-states theoretical framework. The premise of the expectation-states theoretical framework is that expectations are a significant factor within interactions between individuals with certain characteristics (Berger et al. 1977). SCT, a status-organizing process, was originally conceived to provide explanations for how people behaved in situations where each party had performance expectations of the other and where they differed on status characteristics, such as age, gender, or race (Burke 2006:271). Expectations based on external status differences may begin during interactions between strangers, but also expectations arise from prior beliefs about the different status characteristics that people have (Berger et al. 1980:481). There are two forms of status characteristics: specific and diffuse. Specific status characteristics refer to proficiency, respected abilities, and achievement (e.g., patient's ability to communicate with the doctor). Diffuse status characteristics refer to expectations of competencies that do not refer to a specific ability (e.g., race or gender) (Burke 2006). Higher-status characteristics have a higher expectation placed on the individual; conversely, lower-status characteristics have a lower expectation placed on the individual (Berger, Cohen, and Zelditch 1972).

Status characteristics determine the level of participation and influence of the individual within the interaction (Berger et al. 1972). Berger et al. (1980) explain a point of the theory regarding how non-whites and females act differently with other non-whites and females than with whites and males (p. 481). The same idea can be said

for people with the same status characteristics. That is, if people have the same status characteristics, these statuses will cancel each other and therefore, produce an equal interaction exchange (p.488). SCT states that when someone of a higher status makes suggestions, the suggestions are likely to be viewed as more positive than if someone of a lower status makes the suggestion (Burke 2006). This idea can extend to doctors and patients. Given the level of status of doctors in our society, patients would expect that their doctor knows what is best and trust their judgment, and therefore take the physician's advice at face value.

Applying this theory to the current study, the physician and patient bring with them an expectation of performance of the other, which shapes how they interact with each other within the medical encounter. The status-organizing process, where doctors have a high status and influence, and patients have less, shape how both behave in accordance to their level of status. For example, in a paternalistic encounter the physician would expect the patient to take on a submissive role while the doctor acts as the dominant figure in the relationship. Further, with patients having a lower status and thus, less influence in the encounter, physicians would have lower expectations of patients (Berger et al. 1980). However, physicians would not have lower expectations for all patients. They would have higher expectations for patients with the same status characteristics as themselves (e.g., male doctor with male patient), and lower expectations for patients who differed from them on status characteristics (e.g., white doctor with non-white patient). There are implications of this theory for patient outcomes. For instance, Cooper et al. (2003) study showed that encounters with a same race physician and patient (i.e., race-concordant) lasted longer than race-discordant

encounters. Shorter medical visits are associated with less preventative measures being taken, and patients feeling less ease in discussing ailments (Roter and Hall 2006:112). Additionally, Peck and Conner (2011) found that when race and gender status differences were present in a medical interaction, the encounter resulted in being physician-centered.

Chapter 4: Research Question & Hypotheses

The aim of the current study is to gain a deeper understanding of the factors that influence doctor-patient communication, and consequently, their relationship. Specifically, we examine patients' CHC and patients' and physicians' status characteristic differences to see how these factors might impact the communication between doctor and patient during the medical encounter. SCT has been well established and posits that people are organized within an interaction based on their status characteristic, such as race or gender. Further, there are differing expectations placed on people with certain status characteristics. In contrast, CHC is a newer theory that focuses specifically on the medical setting. Shim (2010) posits that CHC can help explain imbalances that stem from things like doctor-patient communication. To this end, we will test the following research question and hypotheses:

Research Question

Do patients' level of cultural health capital influence the type of encounter that he or she experiences more or less than his or her status characteristic?

Hypotheses

Given that CHC theory is proposed to explain a medically-centered interaction, we hypothesize the following: *H_1: cultural health capital theory will influence the*

medical encounter outcome more than status characteristic theory. On the other hand, doctors and patients generally begin their relationship with an imbalance in status. That is, the doctor generally holds a higher status than the patient. Therefore, we also hypothesize: *H_2: status characteristic differences (SCT) will influence the medical encounter outcome more than cultural health capital.*

Chapter 5: Data and Methods

Sample

We use data collected from patients and physicians from a large family medical practice over an 11-month period in 2007 and 2008. A total of 121 patients and 17 physicians are included in the analyses. The 17 physicians represent all physicians in the clinic. Other providers who treated patients, such as physician assistants and nurse practitioners, were excluded from participation. Study participants were recruited from the patient pool of physicians who were participating. Patients were identified and randomly selected from daily appointment schedules. The patients were approached while waiting to see their providers. To be eligible for the study, patients had to be 18 years old or older, understand and speak English, and had to have an appointment scheduled with the physician who was their main source of primary care.

Approximately 3,500 patient appointments were in the clinic's database for participating physicians during the data collection period. A relatively small portion of all patients were approached for participation because once a patient consented, the research staff stopped recruiting patients to begin data collection for the enrolled patient (e.g., conducting the previsit interview, setting up audio equipment). Generally, interviewers did not start to recruit new patient participants until a previously enrolled

patient was seeing his or her physician. A total of 271 patients were approached to participate in the study. Of the 271 patients approached, 121 (45 percent) consented and completed all three phases of data collection (previsit questionnaire, audio-taped medical encounter, postvisit questionnaire) with no missing data on the variables in the current analyses. The remaining 150 patients refused or did not provide consent (n = 35, 13 percent), were not eligible (n = 8, 3 percent) for one of the reasons stated above, or did not complete all three phases of data collection (n = 51, 19 percent). The demographics of the remaining patients, however, were similar to the sample in the current analyses. Possible reasons that patients did not complete data collection included being sent from the medical visit directly to other areas of the clinic (e.g., for scans, labs), audio equipment malfunction, and leaving the clinic altogether while the interviewers were busy enrolling other patients.

Previous analyses tested for differences between patients who completed all phases of data collection (n = 121) and those who did not complete all phases or had missing data (n = 51). Peck (2011) compared the groups on status characteristics and social demographic variables. There were no appreciable differences except for patient race. White patients were more likely to be included in the analyses, 66 versus 34 percent.

Data Collection

Once consent was received, patients filled out pre-visit and post-visit questionnaires (34 closed-ended questions, and 60 closed-ended and open-ended questions, respectively). Trained interviewers administered the patient questionnaire, which was comprised of questions about patients' demographic information, and the

visit purpose. While still at the medical facility, and upon completion of the doctor visit, patients filled out a post-visit questionnaire. This questionnaire contains items about what transpired during the visit, such as processes, tests, medications, as well as how satisfied the patient was with the visit and the physician. In addition, patients were asked to assess and characterize the interaction with their doctor.

Roter Interaction Analysis System

The medical visit was audio recorded and trained coders analyzed and coded the audio recordings after the visit. The coders used the Roter Interaction Analysis System (RIAS) to code audiotapes of doctor-patient encounters in the medical visit (Roter and Larson 2002). RIAS is the most used coding scheme for doctor-patient interactions (Heritage and Maynard 2006; Innes et al. 2006; Inui et al. 1982; Johnson Thornton et al. 2011). The system is broadly derived from the work of Robert Bales, which assesses patterns of small group interactions involving problem-solving and decision-making (Bales 1950). RIAS also incorporates social exchange theories relating to social influences, problem-solving, and the reciprocal nature of doctor-patient encounters (Roter 1999). The RIAS coding scheme identifies all statements or complete thoughts expressed during the medical visit (for both patients and doctors), which are coded into one of the 34 mutually exclusive and exhaustive categories. The 34 categories are collapsed into four general categories, shown in Appendix A. (Roter 1999).

The RIAS coding manual describes communication units as “utterances”, which are the smallest distinct speech segments that a classification can be assigned (see Appendix B). Communication units may vary in length. A single sentence is considered as one whole unit, but only if it conveys one thought or references only one item of

interest. Compound sentences are generally divided at the conjunction. Should a thought or sentence be interrupted by one or more seconds then each sentence portion is coded as separate utterances. If the first portion of an interrupted fragment can be categorized, the portion of the second fragment is attributed to the same category as the first fragment. However, if the first fragmented portion has no discernible content then it is considered a transition. Fragments that lack any content or meaning at all, and cannot be categorized, are also coded as a transition (Roter 1999).

RIAS categories can be regarded as reflecting socio-emotional and task-focused elements of medical interactions (see Appendix C). Task-focused elements for physicians are defined as skills that are technical in nature that are used to solve medical problems. These elements encompass the reasons why patients request physicians' expertise and are asked for consultation. Task-focused elements include choosing specific diagnostic tests, conducting procedures, like taking blood, giving shots, or performing preventative measures. The value of these activities is limited without having a dialogue between doctor and patient, which informs the medical history, and produces a meaningful exchange for both doctor and patient. Physicians' task behaviors include gathering medical histories, educating patients, and counseling. The socio-emotional component of the medical visit is comprised of dialogue that builds social and emotional rapport between doctor and patient (Roter 1999).

RIAS differs from other assessment measures of doctor-patient communication, including Bale's Process Analysis. First, the coding approach in RIAS is designed for two-person exchange (dyads) specific to the medical visit. The dialogue between patient and doctor is coded into categories that apply to each party, although some categories

may be more common to a particular party than another. Second, categories are then tailored to reflect the specific content and context of the medical dialogue. Third, verbal elements of identification and classification are coded directly from audio-recordings, and not transcribed beforehand. Coding directly from audio-recordings allows the coder to assess the tone and meaning of the interaction. Tonal qualities convey the emotional context of the medical visit outside of the words spoken (Roter 1999).

Dependent Variable

We examine processes within the doctor-patient relationship that take place during the medical visit. The dependent variable in this study is whether a medical encounter is patient-centered. The variable was operationalized by conducting a cluster analysis that identified groups of encounters that were similar in influence and control among doctors and patients. The clustering of encounters consisted of six variables. Three variables measured the patient's patterns in communication and three variables measured the doctor's patterns in communication. The six variables consisted of the following: *biomedical information given*, which include patients explaining medical conditions or physicians explaining medications; *psychosocial exchange*, which include patient concerns or physicians counseling patients; *number of closed and open-ended questions* asked between doctor and patient, a *ratio of all talk* from doctors and patients in order to control for the length of the medical visit are included in this variable; as well as *the functions of a medical interview*, which include data gathering, educating patients, and relationship building (Peck and Conner 2011:556). The cluster analysis resulted in encounter observations that were either patient-centered or not patient-

centered (i.e., physician-centered). The variable is coded as binary with 1 indicating a patient-centered encounter.

Independent Variables

The independent variables studied are derived from cultural health capital and status characteristics theory. CHC is represented by patient health-skills described by Shim (2010). Specifically, we use a health literacy variable to measure CHC theory. Health literacy refers to a patient's ability to participate in medical discussions by asking health-relevant questions, understanding physicians' explanations (Katz et al. 2007), and using applicable terminology (Shim 2010). We measure health literacy by using the Rapid Estimate of Adult Literacy in Medicine (REALM). REALM consists of a total of 66 medical terms and is scored on the basis of how many words a patient is able to read and pronounce correctly (Davis et al. 1993), and the score ranges from 0-66. We operationalized this variable by creating a binary variable of high and low REALM scores, cutting the variable at the median. REALM is a widely used instrument to assess health literacy in medical settings (Arozullah et al. 2007; Davis et al. 1993; Kirk et al. 2011; Murphy et al. 1993), and is more valid than simply using the patient's level of education because it is difficult to estimate an individual's level of medical understanding on the basis of education alone (Murphy et al. 1993).

In addition, we examine status characteristic differences in this study, specifically gender, and race. Each of these variables reflects the difference in status between patient and physician. *Gender* status variable is coded with female as the reference (male=1), and status characteristic scores are either zero (same gender) or positive-1 (male physician and female patient) or negative-1 (female physician and

male patient). *Race* status variable is coded as white and non-white (non-white is the reference category; white=1) with the status characteristic being zero (same race) or positive-1 (white physician and non-white patient) or negative-1 (non-white physician and white patient) (Peck and Conner 2011). Both race and gender status characteristic variables were created by subtracting the patient's status difference score from the physician's. The status difference scores are as follows: A *Zero score* equals patients and physicians with the same status on the characteristic. *Positive score* equals the physician as having a higher status on that status characteristic. *Negative score* equals the patient as having a higher status on that status characteristic.

Control Variables

We include several control variables that could have an impact on the relationship between CHC or SCT and the encounter that occurs between doctor and patient. We use the following patient-level control variables: number of doctor visits in the last six months, race (white or non-white), gender (male or female), age, education and income. The number of visits was a question asking how many times the patient had seen their PCP in the last six months, including that day. Age, education and income are self-reported by the patient. Age is categorized as below 36 years old, 36 to 55 years old, 56 to 75 years old, and 76 years old and older. Education is coded as binary: less than a college degree, or college degree and above. Lastly, income is categorized as less than $30,000/year, $30,000 to $50,000/year, and above $50,000/year. We also use physician level control variables: physician gender (male or female), race (white or non-white), and years of practice, which range from two years of practice, up to 21 years of practice.

Chapter 6: Analyses

The analyses consist of patients (n=121) clustered within doctors (n=17). As such, the observations are not independent. A potential problem when observations are not independent (i.e., clustered) is that errors are correlated causing an underestimation of total variance error, which results in a Type 1 error (Hox 2010:5). To determine if the clusters (physicians) account for a significant portion of the variation in the outcome, we calculated the intraclass correlation coefficient (See Appendix E). Results show that the between-doctor differences account for about 25 percent of the total variance in patient encounters. The remaining 75 percent of variance in encounter types can be attributed to within-doctor differences. Given that we found that between-doctor differences account for a significant portion of the variance, we present corrected standard error estimates using the Huber-White sandwich correction for nonindependent observations (Huber 1967; White 1980). Because the dependent variable is binary (patient-centered versus not patient-centered), we conduct binary logistic regression. We present unadjusted bivariate analyses that show the relationship between each status characteristic difference and patient-centered encounters, and we present the bivariate relationship between REALM and patient-centered encounters. In addition, we present adjusted (multivariate) analyses for predicted patient-centered encounters for status characteristic differences, as well as for REALM.

Chapter 7: Results

Characteristics of the Study Sample

One hundred and twenty-one patients met the inclusion criteria during the study period of eleven months between 2007 and 2008. Table 1 shows frequencies and

percentages of variables describing the patient sample. The sample of 121 patients consists of slightly more female patients (53 percent) than male patients (47 percent). About one-third (34 percent) of the patients are non-white, and two-thirds (66 percent) of the patients are white. Patient health literacy score (REALM) is roughly split between the high and low groups (53 percent, and 47 percent respectively). Patient participants mostly have less than a college degree (74 percent), with a little over a quarter (26 percent) college educated, or higher. Most of the patients earn $50,000 per year, or less. The somewhat lower income level is likely related to average age of the study participants. The patient participants are slightly older than the general adult population; the median age of the sample is 60 years old. Slightly more than half (56 percent) of the patients are 56 years old or older. The slightly older age profile of the participants is likely related to the composition of the study physicians. While all physicians in the study are associated with the family medical practice, at least two of the physicians listed geriatrics as a board certified specialty.

Physician characteristics are presented in Table 2. Ten of the seventeen physicians are male (59 percent) and seven are female (41 percent). The majority of the physicians are white (82 percent) with three non-white physicians. The majority of physicians have practiced medicine between five and ten years (52 percent). The remaining physicians were about split between less than five years of medical practice and over ten years of medical practice (28 and 20 percent, respectively). Physician age was split fairly evenly between 40 years and below and 41 years and older (53 and 47 percent, respectively).

Characteristics of the Encounter

Table 3 shows descriptions of the encounter characteristics. Most of the doctor-patient encounters are patient-centered encounters (79 percent) with 21 percent not patient-centered. The majority of encounters are between doctors and patients with the same race or gender statuses (64 and 51 percent, respectively). This finding follows other studies suggesting that doctors and patients prefer encounters with the same race or same gender (concordant) (Cooper et al. 2003; Laveist and Nuru-Jeter 2002). Encounters where the patient had a higher status for race or gender were the least common in our data (11 and 17 percent, respectively).

SCT Association on Encounter

In this study, we use both SCT and CHC theory in order to see which theory better predicts the type of encounter that patients experience. Table 4 presents a series of adjusted (multivariate) analyses for predicted patient-centered encounters for status characteristic differences. The numbers are odds ratios from binary logistic regressions. All models include status characteristic differences for race and gender. Model 1 shows a bivariate analyses of status characteristic differences on patient-centered encounter. Model 2 includes patient-level covariates. Model 3 includes the doctor-level control of number of years in practice. The final model, Model 4, includes all of the patient- and physician-level variables.

The direction of results is noticeably similar across all models. In two of the four models, race status characteristic differences are significantly associated with decreased odds of a patient-centered encounter. The direction of the association is as expected. Higher physician status is associated with having higher odds of physician-centered

encounters (as opposed to patient-centered encounters). Model 1 shows that as race status differences increase between doctor and patient (i.e., white doctor and non-white patient), there is a .82 decrease in the odds of patient-centered encounters occurring. Therefore, we expect to see an 18 percent decrease in the odds of a patient-centered encounter occurring, as race status differences increase. We received a similar result for gender status characteristic difference. The results suggest that as gender status differences increase, there is a .72 decrease in the odds of patient-centered encounters occurring. Neither of these coefficients achieved significance, however.

Controlling for the potential effects of patient gender, race, income, education, and age in Model 2, the odds of a patient-centered encounter occurring decreased as race status differences increased. Specifically, as race status differences increase, there is a .11 decrease in the odds of a patient-centered encounter occurring ($p \leq 0.05$). In this model, gender status characteristic differences did not change in direction with patient-level controls included nor did it achieve significance. Model 3 is almost identical to Model 1, which means that including the doctor-level control of number of years in practice does not add to our ability to predict patient-centered encounters. Model 4 includes all variables, and is almost identical to Model 2. Like Model 2, race status characteristic differences in Model 4 achieved significance, although only marginally ($p<.10$). The results suggest that as status differences increase, there is a .11 decrease in the odds of a patient-centered encounter occurring. Again, we received a similar result for gender status difference. As gender status differences increase, there is a .43 decrease in the odds of a patient-centered encounter occurring. This result did not achieve significance.

CHC Association on Encounter

We examine CHC on patient encounters. Table 5 presents logistic regression models with odds ratios of the multivariate association of predicted patient-centered encounters for cultural health capital. Each model includes the REALM high/low variable. Model 1 includes REALM without any control variables. In this model, the REALM odds ratio is 0.52, which is marginally significant ($p<.10$). The results suggest that the higher the REALM, the less likely patients will experience patient-centered encounters. The odds of patients with higher REALM scores experiencing patient-centered encounters are 48 percent lower than for patients with lower REALM scores.

Model 2 includes REALM with patient-level controls, which are gender, race, income, education, age, and number of visits to the PCP in the last six months. The REALM odds ratio stayed about the same, and stayed in the same direction, but did not achieve significance in this model. Model 3 includes REALM and doctor-level controls, which are gender, race, and years of practice. The results suggest that, again, the higher the REALM, the less likely patients will experience patient-centered encounters ($p\leq.05$). Model 4 includes REALM and all controls for both patient and doctor. The results are the same as previous models. Specifically, the higher the REALM, the less likely patients will experience patient-centered encounters. That is, patients with higher health-literacy are .32 times less likely to experience a patient-centered encounter than lower health-literate patients ($p<.10$). This finding is not what we would expect. Research has shown physicians offer more communication and information to patients they perceive as having health skills, such as health literacy (Dubbin et al. 2013), which is reflective of a patient-centered encounter.

SCT and CHC Combined on Encounter

Lastly, we present logistic regression models of SCT and CHC combined on patient encounters (Table 6). All of the models include status characteristic differences for race and gender and REALM. The numbers are odds ratios from binary logistic regressions. The direction of odds ratios did not change from previous models. With no control variables included, Model 1 shows that REALM achieved marginal significance. Specifically, the results suggest that higher REALM patients are less likely to experience patient-centered encounters ($p<.10$). Model 2 includes patient-level controls showing that REALM stayed marginally significant, and race status characteristic differences achieved significance ($p\leq.05$). With the doctor-level variable of number of years in practice included, Model 3 shows that REALM achieved significance ($p\leq.05$), but neither status characteristic variables achieved any significance. The last model, Model 4, is the full model of both SCT and CHC with all controls. Similar to the results of Model 2, the results in Model 4 show that race status characteristic difference achieved significance ($p\leq.05$) and REALM achieved marginal significance ($p<.10$).

Chapter 8: Discussion

In this study, we examine factors that influence communication between doctor and patient, which can have an effect on their relationship. The type of medical encounter that patients experience can impact health outcomes, such as satisfaction, adherence, trust (Ackerson and Viswanath 2009; Roter and Hall 2006), and engagement (Alexander et al. 2012) in the medical encounter. To this end, the research question explored and the hypotheses tested were: *Do patients' level of cultural health capital*

influence the type of encounter that he or she experiences more or less than his or her status characteristic? **H_1***: cultural health capital theory will influence the medical encounter outcome more than status characteristic theory*. **H_2***: status characteristic differences (SCT) will influence the medical encounter outcome more than cultural health capital.* We performed binary logistic regression to test these hypotheses. We found that race status characteristic differences influenced the medical encounter whereas gender status characteristic differences did not. More specifically, our results suggest that when race status differences increase between doctor and patient, patients are less likely to experience patient-centered encounters. Thus, patients are more likely to experience a physician-centered encounter as race status differences increase. This finding follows the literature in that physician's status differences from patients generally result in paternalistic encounters (physician-centered) (Peck and Conner 2011). With regard to gender status differences not achieving significance, this result could be a result of our smaller sample size (121), as well as the predominantly older sample. Research shows that older patients receive more physician-centered communication from their doctor than younger patients (Roter and Hall 2006:59-60). Therefore, perhaps the patient's age overshadows their gender in this case.

In addition, we found that patients with higher health-literacy were less likely to experience patient-centered encounters than lower health-literate patients. Notably, other studies have demonstrated that low-literate patients generally receive lower quality communication from their physician (e.g., not explaining medical terms in ways that patients understand) (Roter and Hall 2006:69). However, our finding is contradictory. We would expect that patients with high health-literacy would be *more*

likely to have a patient-centered experience with their doctor given their ability to communicate in a health-related dialogue. The measurement of health-literacy to represent CHC could be to blame; perhaps we need a better measure of CHC in order to fully understand its influence on doctor-patient relationships. However, our finding could also be related to results from two recent studies, that demonstrated that "difficult" patients received less accurate diagnoses than patients considered as "neutral" in the encounter. The authors posit that difficult patients detract from the medical visit's task and, consequently reduce physicians' mental abilities that would be used for diagnoses (Mamede et al. 2016; Schmidt et al. 2016). We now question whether patients with high health-literacy, who enter the visit with an idea of what they want or need, who ask more questions in the encounter, are considered to be "difficult" patients. If that is so, our finding that high health-literate patients are less likely to experience patient-centered encounters makes more sense, and is something that needs to be investigated further.

Further, with respect to H_1, our results suggest that CHC does not better predict the type of encounter that will occur versus SCT. Regarding H_2, our results suggest that race status differences influence the encounter slightly more than a patient's health-literacy. However, the pseudo r-squared for CHC and SCT were very close (.22 and .19 respectively), therefore, we conclude that both theories influence the encounter at about the same rate. We need to interpret these findings with some caution given the small sample size (n=121), the age demographics of the patients in the study (median age was 60), the small number of non-white physicians in the study (n=3), and we could not control for the type of the medical insurance that patients had since this question was

not in the study. Additionally, we cannot say for certain that our sample is representative of other family medical practices. More detailed empirical analyses are needed in order to understand the influences of health-literate patients, as well as status characteristic differences, on doctor-patient encounters.

Even given these limitations, this study contributes to the medical sociology literature in a few important ways. First, the study results confirm what researchers have previously found with regard to status characteristics theory. That is, SCT is a useful theoretical framework in understanding how status differences between doctor and patient influence doctor-patient interactions. Second, the current study advances knowledge of health disparities in that racial status differences between doctor and patient contribute to the type of encounter that occurs. Doctors and patients already begin with an imbalance between them because of power differentials. Compound that element with the finding in the current study, and we can see the role of the encounter in health disparities for non-white patients. Lastly, this study empirically tests the fairly new theory of cultural health capital, which suggests that CHC framework is not as useful in understanding doctor-patient encounters as we had anticipated. Even so, our finding suggests that more investigation is needed, especially given the possibility of high health-literate patients being considered "difficult" patients in the encounter.

Chapter 9: Conclusion

In this study, we examined cultural health capital and status characteristics theory in order to understand patient-centered encounters. We specifically examined patients' health-literacy level to represent CHC in order to see how health-literacy influenced the doctor-patient encounter. We found that high health-literate patients were

less likely to experience patient-centered encounters. In addition, we examined the impact of race and gender status characteristic differences on patient-centered encounters occurring. Our findings suggest that status characteristics theory is useful in the medical encounter when doctors and patients meet together. Future research is needed in order to evaluate status characteristic differences for other status characteristics, such as age, income, and education. For instance, do status differences such as age, and socioeconomic statuses impact the way doctors and patients interact? Further research is also needed to investigate the influence of cultural health capital in the medical encounter. Even though we found marginal support for cultural health capital, there are likely more encompassing measures that better represent the theory than health literacy.

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Appendix A: Tables

Table 1 Patient Characteristics

Table 1. Patient Characteristics in the Sample (n = 121)

	N	*%*
Patient Characteristics		
Female	64	53
Male	57	47
Non-White	41	34
White	80	66
REALM		
Low REALM	57	47
High REALM	64	53
Education		
Less than College Degree	89	74
College Degree and Above	32	26
Income		
Less than $30k/yr	46	38
$30k-$50k/yr	46	38
More than $50k/yr	29	24
Age		
35 years and below	4	3
36-55 years	49	41
56-75 years	61	50
76 years and older	7	6

Table 2 Doctor Characteristics

Table 2. Doctor Characteristics in the Sample (n = 17)

	N	*%*
Physician Characteristics		
Female	7	41
Male	10	59
Non-White	3	18
White	14	82
Years of Practice		
Less than 8 years	8	47
8 years or more	9	53
Age		
40 years and below	9	53
41 years and older	8	47

Table 3 Encounter Characteristics

Table 3. Encounter Characteristics (n = 121)

	N	*%*
Interaction Style		
Patient-centered	95	79
Not patient-centered	26	21
Race Status Difference		
Same status	78	64
Physician higher status	30	25
Patient higher status	13	11
Gender Status Difference		
Same status	61	51
Physician higher status	39	32
Patient higher status	21	17

Table 4 Logistic Regression SCT

Table 4. Logistic Regression with Odds Ratios of Predicted Patient-Centered Encounters for Status Characteristic Difference (n = 121)

	Model 1	Model 2	Model 3	Model 4
Status Characteristic Difference				
White (+1 = doc higher status)	0.82	0.11*	0.83	0.11†
Male (+1 = doc higher status)	0.72	0.41	0.77	0.43
Patient Controls				
Male		0.32		0.33
White		0.09*		0.09*
Income - $30k-$50k/yr		2.74*		2.72†
Income – Above $50k/yr		2.29		2.29
Education				
College Graduate and Above		6.45**		6.39**
Age				
36-55 years old		9.50*		9.48*
56-75 years old		3.73		3.69
76 and older		17.49		17.00
# of Visits Last 6 Months		1.10		1.10
Doctor Controls				
# of Years in Practice			0.96	0.99

†p<.10 *p≤0.05; ** p≤0.01; *** p≤0.001

Table 5 Logistic Regression CHC

Table 5. Logistic Regression with Odds Ratios of Predicted Patient-Centered Encounters for Cultural Health Capital (n = 121)

	Model 1	Model 2	Model 3	Model 4
Cultural Health Capital				
REALM (High/Low)	0.52†	0.51	0.45*	0.32†
Patient Controls				
Male		0.64		0.71
White		0.82		1.48
Income - $30k-$50k/yr		2.35		2.54†
Income – Above $50k/yr		2.47		2.01
Education				
College Graduate and Above		5.22**		9.67***
Age				
36-55 years old		8.37		13.45*
56-75 years old		3.76		4.80
76 and older		12.02		21.62
# of Visits Last 6 Months				1.11
Doctor Controls				
Male			0.41	0.36
White			0.16†	0.10*
# of Years in Practice			0.98	0.98

†p<.10 *p≤0.05; ** p≤0.01; *** p≤0.001

Table 6 Logistic Regression SCT/CHC

Table 6. Logistic Regression with Odds Ratios of Predicted Patient-Centered Encounters for Status Characteristic Difference and Cultural Health Capital (n = 121)

	Model 1	Model 2	Model 3	Model 4
Status Characteristic Difference				
White (+1 = doc higher status)	0.59	0.10*	0.58	0.10*
Male (+1 = doc higher status)	0.72	0.34	0.77	0.36
Cultural Health Capital				
REALM (high/low)	0.41†	0.33†	0.37*	0.32†
Patient Controls				
Male		0.24		0.26
White		0.14		0.15
Income - $30k-$50k/yr		2.59†		2.54†
Income – Above $50k/yr		2.02		2.01
Education				
College Graduate and Above		9.79***		9.67***
Age				
36-55 years old		13.17*		13.45*
56-75 years old		4.77		4.80
76 and older		22.51		21.62
# of Visits Last 6 Months		1.13		1.11
Doctor Controls				
# of Years in Practice			0.95	0.98

†p<.10 *p≤0.05; ** p≤0.01; *** p≤0.001

Appendix B: Figures

Figure 1 Functions of the Medical Visit

Figure 1. Functions and Elements of the Medical Visit Interview

Functions

1. Determine and monitor the nature of the problem
2. Develop, maintain, and conclude the therapeutic relationship
3. Carry out patient education and implementation of treatment plans

Visit Elements

1. Prepare the environment
2. Prepare oneself
3. Observe the patient
4. Greet the patient
5. Begin the interview
6. Detect and overcome barriers to communication
7. Survey problems
8. Negotiate priorities
9. Develop a narrative thread
10. Establish the life context of the patient
11. Establish a safety net
12. Present findings and options
13. Negotiate plans
14. Close the interview

Source: Goold and Lipkin 1999:S26

Figure 2 Doctor-Patient Relationship Typologies

Figure 2. Doctor-Patient Relationship Typologies

	Physician Control	
Patient Control	Low	High
Low	Default	Paternalistic
High	Consumerist	Mutuality

Source: Roter and Hall 2006

Appendix C: Roter Interaction Analysis System

Appendix C: Roter Interaction Analysis System

Appendix C: Four General Categories for Roter Interaction Analysis System		
Functional Category	**Communication Behavior**	**Examples**
Patient education and counseling	*Biomedical information-giving* (medical condition, therapeutic regimen)	The medication may make you drowsy. You need to take it for 10 days.
	Psychosocial information-giving (lifestyle, self-care information)	The community center is good company and you can get meals there.
	Biomedical counseling (persuasive statements regarding medical management and therapeutic regimen)	It's important to take those pills everyday. I don't want you to miss any. – or – Watch that foot for infection, be sure to keep it clean and you won't have a problem.
	Psychosocial counseling (persuasive statements regarding lifestyle changes and social psychological issues)	Getting exercise is a good idea, especially now. – or – The most important thing you can do is just quit – just do it! – or – It is important to get out and do something with someone everyday.
Data gathering	*Open-ended questions: medical* (medical condition, therapeutic regimen)	What can you tell me about the pain? – or – How are the meds working?
	Open-ended questions: psychosocial (lifestyle, social psychological)	What are you doing to keep yourself healthy? – or – what's happening with you father?
	Closed-ended questions: medical (medical condition, therapeutic regimen)	Does it hurt now? – or – Are you taking your meds?

	Closed-ended questions: psychosocial (lifestyle, social psychological)	Are you still smoking? – or – Is your wife back?
Building a relationship	Social talk (nonmedical chitchat)	How about them O's last night?
	Positive talk (agreements, jokes, approvals, laughter)	You look fantastic, you are doing great.
	Negative talk (disagreements, criticisms)	I think you are wrong, you weren't being careful.
	Emotional talk (concerns, reassurance, empathy, partnership)	I'm worried about that. – or I'm sure it will get better. – or – We'll get through this.
Functional Category	**Communication Behavior**	**Examples**
Activating and partnering	Participatory facilitators (asking for patient opinion, asking for understanding paraphrases)	What do you think it is? – or – Do you follow me? – or – I heard you say you didn't like that? – or – Let me make sure I've got it right. – or – …Uh-huh, right, go on, hmm.
	Procedural talk (orientations, transitions)	I'll first look at your rash and then take your blood pressure. – or – I'll be back in a minute. – or – Well, Ok. Now…

Source: Roter 1999

Appendix D: RIAS Codes

Appendix D: RIAS Codes

Utterances	RIAS Codes
Patient: "My arm's been hurting…(1 sec pause)…lots."	Gives medical information; Gives-med
Patient: "I've lots…(1 sec)…of pain in my arm."	Transition; Gives-med
Patient: "I've lots…(1 sec)…I can't…(1 sec)…I can't move my arm."	Transition; Trans; Gives-med
Doctor: "So, how did you hurt your knee?"	Medical question
Patient: "Playing baseball."	Gives-med
Doctor: "Hardball? What happened?"	Checks; Med
Patient: "Well, I was a hero and made a sliding tag out at second."	Gives-med
Doctor: "Oh, yeah, was it worth it? (while laughing)"	Laughs
Patient: "Oh man I was great. We collided at the bag, but I got him. Same play Sandburg made Saturday."	Personal; Gives-med; Personal
Doctor: "Oh right. That was great. How about Dawson's catch in the third inning?"	Personal; Personal; Personal
Patient: "Amazing!"	Personal
Doctor: "What a game! So you're a Cubs fan?"	Personal; Personal
Patient: "Well, I grew up in Chicago."	Personal
Doctor: "Really? Well now you're in Oriole Country. Ha-ha-ha.	Checks; Personal; Laughs
Patient: "Right. (laughs)"	Personal
Doctor: "Okay. So let me see this knee."	Trans; Orienting Statement
Doctor: "Did he get you from the side?"	Med

Source: Roter 1999

Part 1:	**Socioemotional Exchange**
1.	Personal remarks, social conversation
2.	Laughs, tells jokes
3.	Shows approval – direct
4.	Gives compliment – general
5.	Shows agreement or understanding
6.	Back-channel responses
7.	Empathy
8.	Shows concern or worry
9.	Reassures, encourages or shows optimism
10.	Legitimizes
11.	Partnership
12.	Self-Disclosure
13.	Shows disapproval – direct
14.	Shows criticism – general
15.	Asks for reassurance

Part 2:	Task-Focused Exchange
16.	Transition words
17.	Gives orientation, instructions
18.	Paraphrase/Checks for understanding
19.	Bid for repetition
20.	Asks for understanding
21.	Asks for opinion
22.	Asks questions (Closed-ended) – Medical condition
23.	Asks questions (Closed-ended) – Therapeutic regimen
24.	Asks questions (Closed-ended) – Lifestyle
25.	Asks questions (Closed-ended) – Psychosocial-Feelings
26.	Asks questions (Closed-ended) – Other
27.	Asks questions (Open-ended) – Medical condition
28.	Asks questions (Open-ended) – Therapeutic regimen
29.	Asks questions (Open-ended) – Lifestyle
30.	Asks questions (Open-ended) – Psychosocial-Feelings
31.	Asks questions (Open-ended) – Other
32.	Gives information – Medical condition
33.	Gives information – Therapeutic regimen
34.	Gives information – Lifestyle
35.	Gives information – Psychosocial
36.	Gives information – Other
37.	Counsels or directs behavior – Medical condition/Therapeutic regimen
38.	Counsels or direct behavior – Lifestyle/Psychosocial
39.	Requests for services or medication

Part 3:	**Global Affect Ratings**
1.	Physician to Patient: Anger/irritation (1-5=lo-hi)
2.	Physician to Patient: Anxiety/nervousness (1-5=lo-hi)
3.	Physician to Patient: Dominance/assertiveness (1-5=lo-hi)
4.	Physician to Patient: Interest/attentiveness (1-5=lo-hi)
5.	Physician to Patient: Friendliness/warmth (1-5=lo-hi)
6.	Physician to Patient: Responsiveness/engagement (1-5=lo-hi)
7.	Physician to Patient: Sympathetic/empathetic (1-5=lo-hi)
8.	Physician to Patient: Hurried/rushed (1-5=lo-hi)
9.	Physician to Patient: Respectfulness (1-5=lo-hi)
10.	Patient to Physician: Anger/irritation (1-5=lo-hi)
11.	Patient to Physician: Anxiety/nervousness (1-5=lo-hi)
12.	Patient to Physician: Depression/sadness (1-5=lo-hi)
13.	Patient to Physician: Emotional distress/upset (1-5=lo-hi)
14.	Patient to Physician: Dominance/assertiveness (1-5=lo-hi)
15.	Patient to Physician: Interest/attentiveness (1-5=lo-hi)
16.	Patient to Physician: Friendliness/warmth (1-5=lo-hi)
17.	Patient to Physician: Responsiveness/engagement (1-5=lo-hi)
18.	Patient to Physician: Sympathetic/empathetic (1-5=lo-hi)
19.	Patient to Physician: Respectfulness (1-5=lo-hi)

Source: Roter 1999

Appendix E: Patient Questionnaire

Appendix E: Patient Questionnaire

ID _____ Date _____

Patient Expectations and Satisfaction with Care

I'd like you to tell me how necessary the following things are for your doctor to do today.

How necessary is it for the doctor to…	**Absolutely Necessary**	**Somewhat Necessary**	**Unsure**	**Somewhat Unnecessary**	**Absolutely Unnecessary**	**Refused**
1. be familiar with your medical record before walking into the room.	1	2	3	4	5	12
2. ask how your condition is affecting your life and family.	1	2	3	4	5	12
3. ask about your personal health habits.	1	2	3	4	5	12
4. ask about previous treatments you've tried for your condition.	1	2	3	4	5	12
5. prescribe a new medication. If 1 or 2, what kind of medication would you like to receive?	1	2	3	4	5	12
6. listen to your lungs (breathing) with a stethoscope.	1	2	3	4	5	12
7. check your abdomen for tenderness or organ enlargement.	1	2	3	4	5	12
8. refer you to a specialist. If 1 or 2, what kind of test do you want to receive?	1	2	3	4	5	12
9. order tests, If 1 or 2, what kind of test do you want to receive?	1	2	3	4	5	12
10. is there anything else you wanted the doctor to do today? What would you like the doctor to do today? _____ How necessary is it for the doctor to do this?	1	2	3	4	5	12

You said that you wanted a referral/new medication/test during your visit today.

What kind of MEDICATION would you like to receive? (refer to question 5)

1 0 Allergy	1 0 Changed Prescription	1 0 Pain
1 0 Antibiotics/Anti-fungal	1 0 Cholesterol	1 0 Psychiatric
1 0 Anti-smoking	1 0 Cold Symptoms	1 0 Sleeping Agent
1 0 Arthritis	1 0 Diabetes	1 0 Topical
1 0 Blood pressure	1 0 Heart	1 0 Other _____

What kind of SPECIALIST would you like to be referred to? (refer to question 8)

1 0 Allergist	1 0 Dietician	1 0 Hematologist	1 0 Psychiatrist
1 0 Audiologist	1 0 Endocrinologist	1 0 Neurologist	1 0 Rheumatologist
1 0 Cardiologist	1 0 ENT	1 0 Orthopedist	1 0 Urologist
1 0 Dentist	1 0 Eye	1 0 Pain	1 0 Other
1 0 Dermatologist	1 0 GI	1 0 Podiatrist	_____

What kind of TEST would you like to receive? (refer to question 10)

1 0 Blood	1 0 Colon Cancer	1 0 Hearing	1 0 Urine
1 0 Blood sugar	1 0 EKG	1 0 HIV	1 0 X-Ray
1 0 Breathing	1 0 Exercise Stress	1 0 PSA	1 0 Other
1 0 CATscan/MRI	1 0 GI	1 0 Rectal	_____
1 0 Cholesterol	1 0 Hepatitis/Liver	1 0 Vision	

Now I would like to ask you about your current health.

1. In general, would you say your health is:
   1. Excellent
   2. Very Good
   3. Good
   4. Fair
   5. Poor

The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

2. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling or playing golf
   1. Yes, limited a lot
   2. Yes, limited a little
   3. No, not limited at all

3. Climbing several flights of stairs
   1. Yes, limited a lot
   2. Yes, limited a little
   3. No, not limited at all

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

4. Accomplished less than you would like
   1. Yes
   2. No

5. Were limited in the kind of work or other activities
   1. Yes
   2. No

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

6. Accomplished less than you would like
   1. Yes

7. Didn't do work or other activities as carefully as usual
   1. Yes

2. No	2. No
8. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)? 1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely	

These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks-	
9. Have you felt calm and peaceful? 1. All of the time 2. Most of the time 3. A Good bit of the time 4. Some of the time 5. A Little of the time 6. None of the time	10. Did you have a lot of energy? 1. All of the time 2. Most of the time 3. A Good bit of the time 4. Some of the time 5. A Little of the time 6. None of the time
11. Have you felt downhearted and blue? 1. All of the time 2. Most of the time 3. A Good bit of the time 4. Some of the time 5. A Little of the time 6. None of the time	12. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)? 1. All of the time 2. Most of the time 3. Some of the time 4. A Little of the time 5. None of the time

Here are a few questions about yourself.

1. Including today, how many times have you seen your Primary Care Physician in the last six months?

1	2	3	4	5+	777	888

2. The race you consider yourself?

Hispanic White	1
Hispanic Black	2
American Indian	3
Black	4
Asian	5
White	6
Unknown	7
Other	8
Refused	12

3. What is the highest level of education you have completed? (select one)

Hispanic White	1
Hispanic Black	2
American Indian	3
Black	4

Asian	5
White	6
Unknown	7
Other	8
Refused	12

4. Are you currently married? (select one)

Married	1
Divorced or Separated	2
Widowed	3
Never Married	4
Don't Know	11
Refused	12

5. With whom do you live? (select all that apply)

No one	1	0	12
Spouse	1	0	12
Child or grandchild	1	0	12
Parent	1	0	12
Friend	1	0	12
Other:	1	0	12

6. Do you have a particular religion? (select one)

Yes	1
No	2
Don't Know	11
Refused	12

7. If yes, which one? (select one)

Catholic	1
Protestant	2
Jewish	3
Muslim	4
Other:	5
None	6
Don't Know	11
Refused	12

8. What is the range of your annual household income from all sources? (select one)

Under $10,000	1
$10,000 - $20,000	2
$20,001 - $30,000	3
$30,001 - $40,000	4
Over $40,000	5
Don't Know	11
Refused	12

9. What is your age? _____

We are interested in knowing how familiar patients are with these medical terms. Would you please read the following words out loud?

List 1	List 2	List 3
fat _____	**fatigue** _____	**allergic** _____
flu _____	**pelvic** _____	**menstrual** _____
pill _____	**jaundice** _____	**testicle** _____
dose _____	**infection** _____	**colitis** _____
eye _____	**exercise** _____	**emergency** _____
stress _____	**behavior** _____	**medication** _____
smear _____	**prescription** _____	**occupation** _____
nerves _____	**notify** _____	**sexually** _____
germs _____	**gallbladder** _____	**alcoholism** _____
meals _____	**calories** _____	**irritation** _____
disease _____	**depression** _____	**constipation** _____
cancer _____	**miscarriage** _____	**gonorrhea** _____
caffeine _____	**pregnancy** _____	**inflammatory** _____
attack _____	**arthritis** _____	**diabetes** _____
kidney _____	**nutrition** _____	**hepatitis** _____
hormones _____	**menopause** _____	**antibiotics** _____
herpes _____	**appendix** _____	**diagnosis** _____
seizure _____	**abnormal** _____	**potassium** _____
bowel _____	**syphilis** _____	**anemia** _____
asthma _____	**hemorrhoids** _____	**obesity** _____
rectal _____	**nausea** _____	**osteoporosis** _____
incest _____	**directed** _____	**impetigo** _____

Finally, I may want to follow up this visit with one phone call to ask a few more questions; may I call you at home? Is your number the same as we confirmed before? What would be a good time?

PERMISSION: Yes __1__ No __0__ Time: _____

END OF PRE-VISIT INTERVIEW

Thank you very much. Please look for me in the waiting area after your doctor visit.

I'd like to ask you about the visit you just had with your doctor. I want to remind you the NONE of this information will be given to your doctor or anyone else here at the clinic not involved with the study.

Please answer the following questions regarding your visit to the doctor.

How would you rate your physician's performance on the following:	**Excellent**	**Very Good**	**Good**	**Fair**	**Poor**	**Don't Know**	**Refused**
1. Telling you everything; being truthful, up front and frank; not keeping things from you that you should know	1	2	3	4	5	7	8
2. Greeting you warmly; calling you by the name you prefer; being friendly, never crabby or rude	1	2	3	4	5	7	8
3. Treating you like you're on the same level; never "talking down" to you or treating you like a child	1	2	3	4	5	7	8
4. Letting you tell your story; listening carefully; asking thoughtful questions; not interrupting you while you're talking	1	2	3	4	5	7	8
5. Showing interest in you as a person; not acting bored or ignoring what you have to say	1	2	3	4	5	7	8
6. Warning you during the physical exam about what he/she is going to do and why; telling you what he/she finds	1	2	3	4	5	7	8
7. Discussing options with you; asking your opinion; offering choices and letting you help decide what to do; asking what you think before telling you what to do	1	2	3	4	5	7	8
8. Encouraging you to ask questions; answering them clearly; never avoiding your questions or lecturing you	1	2	3	4	5	7	8
9. Explaining what you need to know about your problems, how and why they occurred, and what to expect next	1	2	3	4	5	7	8
10. Using words you can understand when explaining your problems and treatment; explaining any technical medical terms in plain language	1	2	3	4	5	7	8

Here are some more questions about the visit you just made.

In terms of your satisfaction, how would you rate each of the following?	**Excellent**	**Very Good**	**Good**	**Fair**	**Poor**	**Don't Know**	**Refused**
1. How long you waited to get an appointment	1	2	3	4	5	7	8

2. Convenience of the location of the office	1	2	3	4	5	7	8
3. Getting through to the office by phone	1	2	3	4	5	7	8
4. Length of time waiting at the office	1	2	3	4	5	7	8
5. Time spent with the person you saw	1	2	3	4	5	7	8
6. Explanation of what was done for you	1	2	3	4	5	7	8
7. The technical skills (thoroughness, carefulness, competence) of the person you saw	1	2	3	4	5	7	8
8. The personal manner (courtesy, respect, sensitivity, friendliness) of the person you saw	1	2	3	4	5	7	8
9. The visit overall	1	2	3	4	5	7	8

1. Did anyone else go with you into the examining room?	1 Yes	0 No	7 Refused

2. (If Yes) Who came with you?	1 Spouse	2 Adult Child	3 Other Relative	4 Friend	7 Refused

3. (If Yes) Was this person with you and your doctor for the entire visit?	1 Yes	0 No	7 Refused

	Did this occur?			
Did the doctor…	No	Yes	DK	R
1. familiarize him/herself with your medical record before walking into the room?	0	1	7	8
2. ask how your condition is affecting your life and family?	0	1	7	8
3. ask about your personal health habits?	0	1	7	8
4. ask about previous treatments you've tried for your condition?	0	1	7	8
5. prescribe a new medication?	0	1	7	8

	Did this occur?			
6. (If yes) What medication did you receive?	No	Yes	DK	R
A. Allergy	0	1	7	8
B. Antibiotics/Anti-fungal	0	1	7	8
C. Anti-smoking	0	1	7	8
D. Arthritis	0	1	7	8
E. Blood pressure	0	1	7	8
F. Changed Prescription	0	1	7	8
G. Cholesterol	0	1	7	8
	Did this occur?			

Did the doctor…	No	Yes	DK	R
A. Cold symptoms	0	1	7	8
B. Diabetes	0	1	7	8
C. Heart	0	1	7	8
D. Pain	0	1	7	8
E. Psychiatric	0	1	7	8
F. Sleeping Agent	0	1	7	8
G. Topical	0	1	7	8
H. Other _____?	0	1	7	8
7. listen to your lungs (breathing) with a stethoscope?	0	1	7	8
8. check your abdomen for tenderness or organ enlargement?	0	1	7	8
9. refer you to a specialist?	0	1	7	8

	Did this occur?			
10. (If yes) What specialist were you referred to?	No	Yes	DK	R
A. Allergist	0	1	7	8
B. Audiologist	0	1	7	8
C. Cardiologist	0	1	7	8
D. Dentist	0	1	7	8
E. Dermatologist	0	1	7	8
F. Dietician	0	1	7	8
G. Endocrinologist	0	1	7	8
H. ENT	0	1	7	8
I. Eye	0	1	7	8
J. GI	0	1	7	8
K. Hematologist	0	1	7	8
L. Neurologist	0	1	7	8
M. Orthopedist	0	1	7	8
N. Pain	0	1	7	8
O. Podiatrist	0	1	7	8
P. Psychiatrist	0	1	7	8
Q. Rheumatologist	0	1	7	8
R. Urologist	0	1	7	8
S. Other _____	0	1	7	8
11. order a test?	0	1	7	8

12. (If Yes) What tests did you receive?	No	Yes	DK	R
A. Blood	0	1	7	8
B. Blood sugar	0	1	7	8
C. Breathing	0	1	7	8

D. CATScan/MRI	0	1	7	8
E. Cholesterol	0	1	7	8
F. Colon Cancer	0	1	7	8
G. EKG	0	1	7	8
H. Exercise Stress	0	1	7	8
I. GI	0	1	7	8
J. Hepatitis/Liver	0	1	7	8

Did the doctor…	No	Yes	DK	R
A. Hearing	0	1	7	8
B. HIV	0	1	7	8
C. PSA	0	1	7	8
D. Rectal	0	1	7	8
E. Vision	0	1	7	8
F. Urine	0	1	7	8
G. X-Ray	0	1	7	8
H. Other _____	0	1	7	8
13. Was there anything else the doctor did for you? (specify): _____	0	1	7	8
14. Was there anything else you wanted from the doctor that he/she did not do? (specify): _____	0	1	7	8
15. During your visit, did you think of anything else you wanted from the doctor?	0		1	
16. If YES, what else did you decide you wanted?				
A. _____ Did it occur?	0	1	7	8
B. _____ Did it occur?	0	1	7	8

Finally, please tell me…	**No**	**Yes**	**Don't Know**	**Refused**	**N/A**
17. Did you get all of the tests that you wanted?	0	1	7	8	9
18. If no, what did you want that you didn't get?					
19. Did you get all of the referrals to specialists that you wanted?	0	1	7	8	9
20. If no, what did you want that you didn't get?					
21. Did you get all of the new medications that you wanted?	0	1	7	8	9

22. If no, what did you want that you didn't get?	

Now I'd like to ask you about the relationship you have with your doctor.

Please indicate how much you agree or disagree with these statements.	**Totally Agree**	**Agree**	**Neutral**	**Disagree**	**Totally Disagree**	**No Response**
1. I doubt that my doctor really cares about me as a person	1	2	3	4	5	7
2. My doctor is usually considerate of my needs and puts them first	1	2	3	4	5	7
3. I trust my doctor so much I always try to follow his/her advice	1	2	3	4	5	7
4. If my doctor tells me something is so, then it must be true	1	2	3	4	5	7
5. I sometimes distrust my doctor's opinion and would like a second one	1	2	3	4	5	7
6. I trust my doctor's judgments about my medical care	1	2	3	4	5	7
7. I feel my doctor does not do everything he/she should about my medical care	1	2	3	4	5	7
8. I trust my doctor to put my medical needs above all other consideration when treating my medical problems	1	2	3	4	5	7
9. My doctor is well qualified to manage (diagnose and treat or make an appropriate referral) medical problems like mine	1	2	3	4	5	7
10. I trust my doctor to tell me if a mistake was made about my treatment	1	2	3	4	5	7
11. I sometimes worry that my doctor may not keep the information we discuss totally private	1	2	3	4	5	7

1. If there were a choice between treatments, would this doctor ask you to help make the decision?
   1. Definitely yes
   2. Probably yes
   3. Unsure
   4. Probably no
   5. Definitely no

2. How often does this doctor make an effort to give you some control over your treatment? 1. Very often 2. Often 3. Sometimes 4. Rarely 5. Never
3. How often does this doctor ask you to take some of the responsibility for your treatment? 1. Very often 2. Often 3. Sometimes 4. Rarely 5. Not at all

Thank you very much for participating in our study.

END OF INTERVIEW

Appendix F: Calculating the ICC

Appendix F: Calculating the ICC

The data used in this project are clustered within physicians. Therefore, the data are comprised of 17 physicians interacting with 121 patients. As such, the observations are not independent. Grouped observations are generally more alike to one another compared to observations within other groups, such as patients with other doctors (Hox 2010:14). A potential problem when observations are not independent (i.e., clustered) is that errors are correlated causing an underestimation of total variance error, which results in a Type 1 error (Hox 2010:5). To determine if the clustered data account for a portion of the explained variation in the outcome variable (type of doctor-patient encounter), we calculated the intraclass correlation coefficient (ICC).

To calculate the ICC in SPSS, we used the MIXED command to perform a "baseline" mixed regression model (see syntax below). The output from the MIXED command shows the total variance in the outcome variable and the residual. In our baseline model, we received a residual of .138754 and a variance for the population of doctors of .045447. Next, we took the proportion of variance in doctors from the regression output (.045), and divided that by the total variance (total variance = residual + doctor estimate (.138 + .045), which totals .184). Lastly, this results in .045 divided by .184 to equal .244 or 24%, which equals our ICC. *See Hox 2010 for more detailed information on mixed models.

SPSS baseline syntax (*with note in parentheses*):

```
MIXED
dp_paternal  (dependent variable)
BY md_id    (cluster variable)
/FIXED =    | SSTYPE (3)  (standard syntax)
/PRINT = SOLUTION TESTCOV  (standard syntax)
/RANDOM = md_id | COVTYPE (VC).  (again, cluster variable |  standard
syntax).
```