The Function of Communication Adjustment in Patient-Provider Interactions:
A Communication Accommodation Approach to Giving Preventive Health Advice for the Reduction of Type-2 Diabetes

By
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William Bennett Hoffman
M.A., New Mexico State University, 2015
B.A., University of Arizona, 2009
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Chair: Dr. Yan Bing Zhang

Dr. Debra Ford

Dr. Adrianne Kunkel

Dr. Cameron Piercy

Dr. Yvonnes Chen

The dissertation committee for William B. Hoffman certifies that this is the approved version of the following dissertation:

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Chairperson: Dr. Yan Bing Zhang

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Abstract

Communication between patients and providers is an important issue in contemporary health care. The current dissertation considered how health providers 'communication operates as a core factor influencing patients' anxiety, perceptions of provider communication competence, and intention to follow preventive advice related to type-2 diabetes risks (adherence intention). Type-2 diabetes, or adult-onset diabetes, is a non-communicable disease caused by the failure of the body to produce insulin for transferring sugars into energy for the body to use. This study focused on the patient-provider context as an integral episode for acquiring reliable health information to prevent type-2 diabetes. This dissertation also posited that both interpersonal and intergroup elements are present in provider-patient interactions. Although intergroup research was established in social psychology, the field of intergroup communication research has developed into an expansive research field over the past five decades (Giles, 2012). Interlocutors build awareness and work toward having a common partnership during patient-provider meetings, thus fostering a shared understanding between the health expert (the provider) and non-expert (the individual patient). Researchers have traditionally studied patient-provider interactions as interpersonal communication (i.e., a conversation between two people communicating as distinct individuals). Specifically, this dissertation employed an experimental design and used communication accommodation theory, in conjunction with (CAT: Giles, 1973; Giles, 2016) to test the effect of the health provider's communication strategies on three major variables: (a) Intergroup anxiety, (b) Communication competence, and (c) Adherence intention. Therefore, the outcome variables included patients 'feelings of intergroup anxiety, perceptions of the health provider's communication competence (i.e., communication effectiveness and

communication appropriateness) and the patient's decision to adhere to the provider's preventive advice. The provider advised the patient to reduce the intake of added sugar in foods. In addition, the indirect effects of the health provider's communication strategies through perceived competence and anxiety on the patient's decision to adhere to the provider's preventative advice was also tested. Guided by CAT, the health provider's communication strategies were manipulated by creating four scripts representing the provider's communication strategies (4 experimental conditions: fully accommodating [accommodative on discourse management and interpretability]; informative accommodating [accommodative on interpretability but nonaccommodative on discourse management]; conversational accommodating [accommodative on discourse management but nonaccommodative on interpretability]; fully nonaccommodating [nonaccommodating on discourse management and interpretability]). Findings of this study indicated when the relational function of patient-provider communication was accommodative, denoted by the attuning strategy of discourse management, patients felt less intergroup anxiety, perceived the provider to be more competent, and were more likely to adhere to treatment advice compared to when the health provider failed to accommodate on discourse management. Results indicated the health provider's communication adjustment style had a significant indirect effect on adherence intention through intergroup anxiety and communication competence as two serial mediators. The findings contribute to and extend on the emerging literature that uses interpersonal and intergroup frameworks to study health interactions between patients and providers specializing in a variety of health professions.

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Finally, I want to briefly acknowledge the motivation to begin health communication research. My first experience with health communication came seven weeks after birth. I was diagnosed with and treated for biliary atresia, a rare condition occurring in approximately 1 in 10 to 15 thousand infants. I have no memory of the operation apart from the scar across my torso, a daily reminder of vulnerability. I hardly mention it because (a) I am healthier today and (b) without a memory, it is difficult to candidly discuss it with others. Several of my earliest memories occurred in health care settings, and while those experiences were confusing, perhaps even traumatic to a small child, it is not lost on me that they were also necessary. This is one of a few core motivations for writing about health. A deeper and private (to a fault) awareness underpinning my motivations to study health communication comes from the acknowledgement about the gravity and consequential nature of health care. A group of health providers, who I may never meet again, took caution with an infant less than two months old. This project is also possible because of you. Thank you.

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Chapter One: Introduction

Communication is central to the problems, conflicts, and outcomes experienced in health care settings (Parrott, 2004). Kreps (1989) argued communication is so consequential to health that it seems interwoven into the fabric of most health experiences. A majority of the health communication research in the United States (U.S.) has examined the interactions between health providers and individual patients during health appointments. Frequently, however, many researchers have recognized that health communication is a topic of daily conversation with family, a romantic partner, or at work (Lederman et al., 2017; Varava, 2019). Although individuals' everyday encounters about health are not limited to clinical and treatment settings (e.g., discussing a particular health topic with a family member), communication between patients and health providers in these settings remains an important health communication episode and a topic of active interest for researchers (Baker & Watson, 2020).

The norms of patient and health provider interactions in the United States have changed due to an overarching restructuring of health care delivery systems (Huzzard et al., 2018). In the U.S., patients requesting care were visited by a health provider at their residence for nearly every medical problem until the middle of the twentieth century (approximately 1945 to 1955) (Lederman et al., 2017). However, in much of the U.S., this model was superseded by a more complex health system, which restructured several health care norms (e.g., more health provider specializations but fewer general practitioners), including the norms of patient-provider appointments (e.g., patients typically go to the provider’s office). At around the same time, social

scientists became interested in understanding the role of communication in what was being labeled the patient-centered approach to health care. This approach argued for changing the provider's orientation toward and objectives for patient appointments. Central to this approach is the cultivation of awareness about the patient's values, experiences, and identity factors in parallel with their physiological state (Hong & Oh, 2020).

The Institute of Medicine (IOM) publicly endorsed patient-centered care in 2001. According to the IOM (2001), patient-centered care is "respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions" (IOM, 2001, p. 3). Major components of the patient-centered model include (a) informed consideration of patient perspectives and experiences; (b) a shared understanding of the health topic and treatment; (c) opportunities for the patient to participate in their care, and (d) enhancement of the patient-provider relationship (Epstein et al., 2005). Patient-centered care is also endorsed by leading scientific and political agencies (e.g., World Health Organization) with power to fund health research and shape health policy (Paek & Hove, 2020; Ruben, 2016). Patient-provider interactions have yielded insights that were applied to clinical training and standards of practice (Street, 2003**)**. Subsequently, health communication scholars must build on previous patient-provider work by developing and validating theories that address the complex issues around health care (Liu & Jiang, 2021).

Previous literature into patient-provider communication has been criticized on two fronts (Farzadnia & Giles, 2015). First, although patient-provider interactions are generally studied

from an interpersonal approach, several researchers have also called for work that adds an intergroup perspective to the interpersonal tradition (Jones & Watson, 2012). Second, there is a longstanding gap concerning the application of theory in health communication research (Thompson, 1984; McCormick et al., 2021). Third, the role of preventive advice and counsel has become a prominent aim in recent decades, in part due to the rise of non-communicable diseases or NCDs. A goal of this study was to fill in the gaps from prior research and examine the role of communication in preventive contexts. The prominence of intergroup characteristics in patient-provider communication research makes it an attractive subject for intergroup scholars to explore in more detail.

An intergroup research perspective in the context of an interpersonal conversation presumes that the self (i.e., the self as expressed within social contexts) is a composite of both personal and social identities, which operate concurrently during a conversation (Gangi & Soliz, 2016). Patient-provider interactions have several recognizable intergroup features, such as entrenched role-bound norms and occupational status hierarchies (Watson & Gallois, 2002).

Patient-provider encounters signify a conversation that routinely features an imbalance of knowledge on the central subject of their meeting. As a result, patients and providers interact as non-expert and expert, respectively, in a significant proportion of health care meetings (Street, 1991). The importance of status and specialized knowledge represent one of the intergroup characteristics featured in health care interactions. Other factors include a combination of stereotyping based on appearances (e.g., body type) and by way of stigmatizing attributions assigned to certain diagnoses (e.g., manic depression) and status norms (Brooke et al., 2021; Zhu

et al., 2017). These examples can lead to feelings of intergroup anxiety (Stephan, 2014), a type of anxiety individual's feel prior to an encounter with a member of an outgroup (Montgomery et al., 2021) and influence perceptions of communication competence, or subjective impressions a person has of the other speaker's communication competence (Spitzberg, 2013).

As an authority on health information, providers must successfully translate technical health information to patients who have not received the same level of formal training on matters related to health. The health information necessary to make an informed health decision is a major predictor of incompetent provider communication, with lower health literacy being a predictor of providers using more condescending and prejudiced communication (Chen et al., 2018). Prior health communication literature has also used an intergroup approach to study linguistic ambiguities in health care organizations (Gasiorek et al., 2015), technical vs. polite communication (Brummerhenrich & Jucks, 2019), and the patient's intention to adhere to health advice (Hajek et al., 2007). A related critique of health communication scholarship concerns the paucity of communication theory used in research (Hannawa et al., 2015).

Theoretical approaches to health communication offer an informed and systematic way to design research that can improve the patient-provider dynamic (Holmes & Harrington, 2015) and increase health behaviors of evidence-based health information (Viswanath et al., 2020). It is thus surprising to discover that several scholars routinely comment on the lack of theory in health communication research. Hannawa et al. (2015) found over 80 % of publications in their sample of articles from two flagship journals in health communication were not guided by

theory. Building on the first critique of prior health communication literature (i.e., intergroup communication) and the call to develop theories in health communication (Babrow & Matson, 2011), the current study opens a pathway for establishing a communication approach to the interpersonal literature in the patient-provider context. In response to gaps in previous health communication literature, this study builds on recent work in health communication from an intergroup lens, using CAT to explicitly test how providers ’communication functions as a predictor of patients ’intergroup anxiety (affective responses), perceptions of the providers ’ communication competence (cognitive judgments), and adherence intention (behavioral tendencies). Communication accommodation theory (CAT) is a robust model that shows how communication adjustments (i.e., changes or shifts in communication behaviors in response to another speaker, the context, or both) are influential and ubiquitous aspects of social interaction (Gallois et al., 2005; Giles & Maass, 2016).

As a theoretical framework, the current research suggests coalescing intergroup and interpersonal communication traditions to further develop theory within the health communication discipline. The third justification for the current study concerns preventive health and the reduction of developing type-2 diabetes. The majority of prior work focused on curative rather than preventive health, which is a reasonable focus considering the urgency of these matters (Marks et al., 2020). Recently, however, several calls have been made to study the importance of preventive health, too. Stewart (2001) stated that the ultimate goals of patient-centered care should include prevention. An explanation for the shift (from curative to preventive health care) might be the rising rates of non-communicable diseases (NCDs) classified as

lifestyle-related disorders (Uusitupa et al., 2019). Although several NCDs have alarmed health officials during the last century, type-2 diabetes (i.e., adult onset) stands out because it is relatively recent in terms of magnitude and urgency.

Type-2 diabetes, known clinically as diabetes mellitus, is a condition that prevents the body from using the energy derived from the food a person eats (Cleveland Clinic, 2018). In less than two centuries, diabetes went from being a rare disorder in the mid-nineteenth century to a widespread chronic condition in the early twenty-first century (Taubes, 2016). An alarming report from the WHO compared the ten most prevalent causes of morbidity in 2000 with those in the late 2010s. Their findings revealed that type-2 diabetes was absent from the 2000 survey, but it ranked eighth less than two decades later. The situation in the U.S. is particularly concerning. According to a 2020 report from the Centers for Disease Control and Prevention (CDC), 10.5 % of U.S.-Americans have been diagnosed with type-2 diabetes (CDC, 2020).

Such fluctuations in chronic disease rates, particularly lifestyle conditions, are presumed to be caused by several factors, including dietary habits, obesity, genetics, social predictors of health (e.g., race, social status), and blood glucose levels (Forouzanfar et al., 2016). This trend has raised many questions about the social and behavioral factors driving this increase of type-2 diabetes (Taubes, 2016). Lifestyle behaviors are actions, responses, and external behaviors that impact health (CDC, 2020). The notion of a lifestyle condition implies that there are social and behavioral variables related to the epidemiological profile of NCDs (WHO, 2020). Lifestyle behaviors have been described as enacted health behaviors and activities that impact individuals' well-being and social interactions (Cleveland Clinic, 2020). Examples of lifestyle variables and

the social activity that predict NCDs include alcohol and tobacco use, excessive added sugar intake, and inactivity (WHO, 2020). These variables are strongly correlated with the person's social status and privilege. I want to suggest that lifestyle factors are fundamentally social factors. Because communication is considered a major central organizing activity in social life (Greenaway et al., 2016), social and behavioral factors linked to lifestyle health issues are communicative. By successfully communicating about these health matters, our interactions about them can lead to a greater understanding of and improved decision-making related to preventing lifestyle conditions such as type-2 diabetes. In the present study, sugar consumption is presented as the topic of conversation between the health care provider (a dietitian) and a new patient.

Scholars have focused on various social factors influencing lifestyle as a part of everyday decision making, including dietary decisions. Prior research looked at the influence of family and community members (Head & Bute, 2018), media messages (Aubrey et al., 2020), and cultural background (An, 2018; Bruss et al., 2005), in addition to patient-provider encounters (Peltola & Isotalus, 2020). To date, researchers have not examined the patient-dietitian (i.e., provider) context in much detail. This is surprising because dietary counseling from a registered dietitian (R.D.) has been shown to have beneficial effects on patient health (Yan et al., 2018). Thus, the current study contributes to this topic by examining participants' evaluation of a dietitian's communication with a patient at risk for type-2 diabetes.

The justification for this study is further informed by the notion that communication processes are involved in every step of health care delivery (e.g., a scheduled appointment) and health decision-making (e.g., deciding to try a new treatment). Drawing on patient-centered models (Street, 2019), intergroup principles (Giles, 2012), and communication accommodation theory (Gasiorek et al., 2021; Soliz & Giles, 2014), this study investigates individual's perceptions of a health provider's communication when giving health advice to a new patient at risk of developing type-2 diabetes. The current research adds to existing work in health communication by investigating a comparatively new risk factor, added sucrose (sugar), as the topic of the patient-provider discussion. This is a timely topic to focus on because, in the past decade, public health officials witnessed a plethora of data showing a strong causal link between sugar consumption and diabetic symptoms.

At a minimum, communication has an indirect influence on patients ’attitudes and their future decisions about health-related matters (Villagran & Weathers, 2015). Guided by communication accommodation theory (Giles, 2016), an experimental design is implemented to examine the effects of a health provider’s (dietitian’s) communication adjustment styles on U.S.-American participants' intention to follow treatment recommendations, as well as participants' perceptions of the provider's communication competence. In the chapter that follows, I draw on an intergroup and interpersonal communication theory, communication accommodation theory to develop a hypothesized model that tests the direct and indirect effects of communication adjustment style on the aforementioned outcome variables. The third chapter outlines the research methodology, followed by a presentation of findings in chapter four. Finally, chapter

five discusses these findings in terms of provider communication styles and the impact of non-expert (i.e., non-health professionals) perceptions of the provider's health communication.

Chapter Two: Literature Review

Health communication was partially established in response to patient's dissatisfaction with their interpersonal encounters during health care visits (Korsch, 1972). The most rigorously studied and implemented interpersonal communication models in the literature are referred to as patient-centered models. The drive for patient-centered care, an overarching term that encompasses patient-centered communication, emerged over a century ago following landmark court cases such as *Pratt v. Davis* (1906)[1], a legal case that mandated for health providers to obtain their patient's informed consent before administering medical treatments (Lambert et al., 1997), and the 1910 *Flexner Report*, which exposed the low scientific standards of most medical schools at the turn of the last century (Du Pré, 2014). Engel (1980) developed the biopsychosocial model of care, which embraced the idea that care should be administered according to knowledge about the patient across three dimensions of the whole person: (a) biological, (b) psychological, and (c) social. The biopsychosocial approach became synonymous with the patient-centered care and influenced the literature on patient-centered communication.

Patient-Centered Communication

Patient-centered care, and by extension, patient-centered communication between patients and providers may encompass several aspects of patients' perceptions and experiences in a way that guides the dialogue and treatment plan toward healing individuals and averting health problems. Researchers have established a number of perspectives that define patient-centered communication over the course of several decades (see Street, 2019). Epstein et al. (2005)

[1] For more information about Pratt v. Davis, visit https://www.ravellaw.com/opinions/967d63e3e4aceb0c7ccc62e78af2d543

labeled the following norms as key drivers of patient-centered communication: (a) Considering individual needs, perspectives, and experiences; (b) allocation of opportunities for patient participation in decisions; and (c) developing relational communication norms between the patient, provider(s), and other participants in the communication episode (e.g., family members). In practice, this approach is rooted in the idea that by personalizing patient treatment recommendations, using language that the patient understands, giving clear explanations, and validating the patient's emotional state can improve patient care outcomes (Roter & Hall, 2011). Hua et al. (2021) discovered patients reacted favorably to providers who indicated they had goals to minimize patient distress, inspire optimism, and increase satisfaction with care.

Patient-centered communication also requires providers to consider patient perspectives, using their medical expertise and conversational moves to respond in a manner that is attuned to patients 'needs, detailing the benefits of treatment for purposes of improving or maintaining the patient's overall well-being (Villagran & Weathers, 2015). For example, Dalma et al. (2020) showed patients had significantly fewer satisfactory interactions with providers who showed a superior attitude. They also found patients may even prefer a more reserved style in providers compared to a style that is (intentionally or unintentionally) aloof or ignorant of particular emotional characteristics of the patient's concerns or questions. Overall, patient-provider interactions constitute informed and systematic ways to design research that improves both patient-provider interpersonal (Holmes & Harrington, 2015) and intergroup dynamics (Watson et al., 2016). However, prior literature has overemphasized the interpersonal features of patient-provider encounters and, until recently, overlooked the intergroup features. To address this incongruity, the current research takes an intergroup approach.

Intergroup Approach

Watson et al. (2016) stated health care interactions are an interpersonal interaction occurring at the intergroup level. From an intergroup approach, communication in the patient-provider context is regularly structured by status conventions, roles, responsibilities, and biases that imply what is expected in an encounter and, at times, what will govern the flow of communication during a health appointment (Farzadnia & Giles, 2015). As Farzadnia and Giles (2015) pointed out, the conduct of patient-provider communication frequently sways between high and low degrees of interpersonal and intergroup behaviors. Brubacher et al. (2021) stated medical interviews have "striking similarities to those [interviews] conducted by police officers and social workers" (p. 521), allowing us to draw parallel connections between the interview contexts. As the patient-centered approach became the standard for medical interviews (i.e., patient-provider interactions), more attempts to redirect clinicians away from a reductionist, checklist strategy were made, replacing it with one that emphasizes the role of social interaction and language in medical interviews. This promoted more flexibility and a conversational approach to patient-provider interactions (Brubacher et al., 2021).

Intergroup features are pervasive in health care, as traditional hierarchical status norms (Pines et al, 2021) and role-bound expectations govern interactions and patient care (Hewett et al., 2015). As experts in medical knowledge, health providers have high status and expert power over patients which can lead them to dominate conversations and exercise control over the interaction (Street, 1991). Strong identification with their occupation, and associated status distinctions, influences how health providers interact with patients and other health providers (Baker et al., 2017; Apker et al., 2005). For example, when providers draw on cognitively

contracted stereotypes about their patients, it contributes to how they respond to the patient and thus, the delivery of care (Dryden & Giles, 1987). Jain and Krieger (2011) study used communication accommodation theory (Giles, 2016) to examine international medical students' varieties of communication strategies in handling actual and perceived speech and language differences between patients and themselves. Some medical students suggested trying to pronounce words in a ‘standard' North American dialect and attempted to learn meanings of colloquialisms from media and North American acquaintances. Although a majority of the patient-provider literature has focused on the interactions between primary physicians and patients, other licensed professionals play a key role in the delivery of care (Clayman et al., 2011).

This study also considers the importance of looking at different health provider specializations, given the growing number of health specialists (e.g., Chevalier, 2020) often involved in conjunction with a health care team, or directly responsible for a key aspect of patient care (Baker & Watson, 2020). Researchers have gradually expanded their focus to study communication between patients and pharmacists (Chevalier, 2020), registered nursing professionals (Apker et al., 2005), emergency medical staff (Parker-Raley & Horan, 2014), dental hygienists (Hamasaki et al., 2017), and speech therapists (Cohen & Hula, 2020). The current work adds to the breadth of patient-provider literature by looking at a patient-dietitian dyad. The qualifications and expertise of trained dietitians is summarized in the next section.

Registered Dietitians. In the U.S., registered dietitians (R.D.) are specialists with accredited training and expertise on matters related to evidence-based dietary advice (Chan et al., 2020). Dietitians also work as public health professionals, playing an important role in creating

and updating dietary guidelines as well as developing important public initiatives (e.g., school lunch programs), and consulting with food science companies (Wegener, 2018). For example, since the implementation of newly updated school nutrition standards, dietitians have examined the health benefits of having a wider variety of fruit and vegetable selections, thus improving the nutritional profile of meals, and contributing to the development of federal and local nutrition standards (Jia et al., 2020). Dietitians can also spend a good amount of time giving nutrition advice (Yildiz et al., 2019). McKinley (2009) found participants 'fruit and vegetable efficacy was the strongest predictor of intention to follow healthy eating patterns for university students. Scholars have focused on various social factors influencing dietary health risks, including the influence of family members on health behaviors (Schrodt & Ledbetter, 2007), media messages (Ahm et al., 2015; Aubrey et al., 2020), and cultural identity norms (An, 2018; Bruss et al., 2005). As such, dietary counseling is one of the novel contexts that health communication researchers can merge into the larger conceptualization of patient-provider communication including the recent interest in the communication of preventive health advice.

Prevention has been operationalized as a key factor for improving several health indicators (e.g., values and self-efficacy) and realizing health goals (Bigsby et al., 2019). For example, Tort and Ciapponi (2020) recommended that individuals with hypertension (i.e., high blood pressure) should attain screenings to determine the risk of developing type-2 diabetes. By focusing on the patient-dietitian dyad, the provider's preventive advice highlights lowering added sugar intake and promoting more fruit and vegetable intake as two ways to reduce the risk of type-2 diabetes. Several international health organizations now acknowledge the role of added sugars in the development of type 2 diabetes (e.g., WHO, 2015). Examining women's perception

of different preventive narratives, Bell et al. (2021) reported participants who had a lower subjective risk of being diagnosed with type-2 diabetes, identified more strongly with a storyline involving a highly competent protagonist with a risk profile similar to the target viewers, who was attempting to make lifestyle changes to reduce type 2 diabetes risks.

Sucrose. New York Times columnist Jane Mayer (1976) called sugar a 'new food' for humanity. What did Mayer mean by new? The routine consumption of sugar has become a part of the human diet fairly recently. Breaking with the status quo of the period, she also suggested that "the habitual consumption of large amounts of sugar is highly undesirable from the viewpoint of health" (p. 34). Consuming sugars added to foods on a regular basis would also become a political issue. Robbins and Marro (1979) reported that political debates about sugar policy during the mid-to-late 20th century were heavily influenced by financial support from the sugar industry. Until recently, if food and nutrition researchers asserted a relationship between sugar intake and type-2 diabetes, they also risked their credibility (Taubes, 2016). Consequently, through public relations, sugar executives were able to control both public opinion through health messaging that promoted sugar consumption. Having introduced the provider's background (dietitian) and the health topic (prevention), I will now review the literature on health communication beginning with the major theories and frameworks.

Communication Theory in Health Communication Research

Theory-directed communication research can improve patient-provider conversations (Holmes & Harrington, 2015), allowing for a validated application of findings in health care settings (Viswanath et al., 2020). It is thus surprising to discover the paucity of theory-directed health communication research (Hannawa et al., 2015). Fortunately, this appears to be changing

(Farzadnia & Giles, 2015). McCullock et al. (2021) reported there was a significant increase in the total number of health communication articles using theory since 2010. Some examples of theory-directed research are provided in the next section.

Drawing on facework theory, Murad et al. (2017) found patients ’face concerns significantly impacted their perceptions of pharmacists ’communication strategies. Using Affection Exchange Theory (AET), Hesse and Rauscher (2019) used actors to play the role of a health care provider. They discovered that providers' affectionate communication behaviors were significantly related to patient trust and perceptions of provider competence. Using uncertainty management theory (UMT), Jiang (2019) reported that patients with previously positive encounters with their health care provider were better at managing uncertainty regarding the information. One of the emerging theoretical approaches in health communication is communication accommodation theory (CAT) (Giles, 2016). The current study uses CAT because it can account for both interpersonal and intergroup features in communication episodes. CAT is a communication theory with roots in social psychology, specifically social identity theory (Tajfel & Turner, 1979). Social identity is a powerful explanatory framework for examining intergroup behavior, but it is not centrally concerned with the communicative dimension of intergroup encounters. The communicative dimension is explicated in CAT (Shepard et al., 2001).

Communication Accommodation Theory

Communication accommodation theory (CAT) is an interpersonal and intergroup theory of communication that presumes our memberships in various social groups can structure interactions and reveal a fundamental dimension of human identity (Gangi & Soliz, 2016; Zhang

& Pitts, 2019). One of the key antecedents proposed by the theory has to do with communication adjustments, or shifts in a person's communicative behavior (Gasiorek, 2016).

Early CAT research centered on three types of speech adjustment: (a) convergence, (b) divergence, and (c) maintenance (Street & Giles, 1982). Convergence refers to the adaptive communication behaviors that make speakers similar in terms of speech quality (Dragojevic et al., 2016). Convergence positively impacts multilingual communication episodes (Giles et al., 1973), improves people's willingness to bridge cultural divisions (Simard et al., 1976), and accommodates another person's speech rate (Putman & Street, 1984). In conversations which feature optimally adjusted (i.e., accommodative) communication, speakers are generally satisfied with the interaction and comfortable with the norms of the conversation (Dragojevic et al., 2016). Although convergence has several benefits (Gasiorek et al., 2021), sometimes a person cannot adjust their communication in a manner suitable to the other individual or the situation. Nonetheless, one of the recent theoretical developments in CAT is that the theory can account for ways individuals 'communication can be accommodative (or nonaccommodative) in terms of the perceptions of the speaker (i.e., the listener's perception) (Dragojevic et al., 2016). The conceptualization of nonaccommodation is an important development in the history of CAT and key to operationalizing the provider's communication strategies in the current research.

Nonaccommodation. According to Soliz and Giles (2014), nonaccommodation is typically structured as either underaccommodating communication, in which people neglect to adjust their communication to others (e.g., nonverbal distance), or overaccommodating communication, in which people inappropriately exceed the optimal interaction preferences of their conversational partner (e.g., decreasing the rate of speech in effort to sound patronizing).

Over-and underaccommodation are subjective evaluations made by the message recipient (Gasiorek & Giles, 2012). Health providers ’nonaccommodating "slip-ups" may be unintentional. For example, a student who addressed a professor by their first name when the professor expects to be addressed as doctor or addressing a Judge as Your Honor in courts of law, both reflect social norms, expectations, and potentially, consequences if the other speaker is nonaccommodating. If these issues are unaddressed and therefore unknown to speakers, they tend to result in communication dissatisfaction, avoidant interpersonal behaviors, and conflicts that contribute to feelings of low self-worth and lower life satisfaction (Zhang & Imamura, 2017).

Baker et al. (2011) applied CAT to study the effects of patient underaccommodation in medical interviews. Their study discovered that providers underaccommodated patients by not accounting for their interpretive competence of medical information. As a result, the patients responded by failing to give an open and comprehensible description to the provider. CAT has been used to look at previous health contexts to improve patient-provider communication. Ahmed and Bates (2016) reported that when a health care professional would not attempt to accommodate, the patient imagines it is due to lack of interest in the situation or failure to comprehend their information needs. Williams and Jones (2006) assessed an organizational intervention implemented to mitigate certain nonaccommodating communication patterns in health provider interactions with patient’s and found a change after the intervention (e.g., health providers becoming less controlling; expressions of care). However, health providers reverted to previous communication patterns only a few months afterward.

Hewett et al. (2009) reported that providers at a large metropolitan hospital regularly used antagonistic nonaccommodative communication with other health care providers appeared antagonistic and emphasized status distinctions. Communication between senior providers (e.g., physicians) were described as more accommodating, which was attributed to the fact that senior providers respected each other and had developed a long-term interpersonal relationship with some providers but not others. Those with senior status follow psychological boundaries between themselves as ingroup members and others as outgroup providers (Watson & Soliz, 2019). The current study operationalized accommodating and nonaccommodating communication behaviors as the provider's communication attuning strategies.

Attuning strategies are a classifiable set of four axes that explain various communicative adjustments related to patient information needs and conversational needs (Zhang & Pitts, 2019). Before considering the attuning strategies used in this study, it is important to argue for why attuning strategies offer an ideal framework for looking at patient-provider interactions (see Jones et al., 2018). To achieve this, information exchange and relational communication are considered the two fundamental functions of patient-provider communication in the next section (Cegala, 1997; Duggan & Thompson, 2015). In this study, these two functions are represented by the attuning strategies labeled interpretability and discourse management (Zhang & Pitts, 2019). The next section of this chapter begins by describing the first function of patient-provider interactions, information exchange and the corresponding attuning strategy, interpretability.

Information Giving: Interpretability

This section examines aspects of health information that are relevant to the information seeker. In this dissertation, information giving is defined as verbal expressions that hone in on

scientific, technical, and medical information about health topics or issues relevant to health care delivery and patient treatment (Cegala, 2011). If the patient assumes a provider is a credible source of health information, the provider must be capable of translating their expertise to non-expert patients (Villagran & Weathers, 2015). Information giving is a subcategory of patient-provider meetings and includes medical history, symptoms, diagnosis, and prescribed treatments (Cegala, 1997). In the patient-provider literature, information giving has been studied in terms of the providers' use of jargon (Thomas et al., 2014), technical language (Brummerhenrich & Jucks, 2019), patients 'health information comprehension (Chen et al., 2018), and, in several qualitative studies, as an interactive sequence in which communicative activity shapes the meanings of health-related matters (see Du Pre & Crandall, 2011).

During a consultation with a physician, the interaction between patients and providers takes the shape of a conversation targeted at a particular health objective, which is almost always set by the reason the individual sought medical care. Cegala (1997) developed a taxonomy for studying different functions and forms of information in patient-provider interactions. Cegala (1997) described solicited answers (i.e., a comment or reply to a health-related matter), explanations (i.e., the major purpose of these statements is to convey health information to others), and justifications (i.e., a warrant or reason is offered to account for a question, directive, or assertion) as key categories related to information comprehension.

In the previous two decades, the importance of understanding health information has become a core aim of programs designed to improve knowledge and health literacy (Pleasant et al., 2018), further enhancing information clarity and information source credibility. Health literacy is defined as a person's access to and understanding of the health information necessary

to make an informed health decision (U.S. Department of Health and Human Services, 2012). Throughout the COVID-19 pandemic, researchers have warned that the impact of low health literacy is an underestimated problem that deserves more research attention (Chen & Wang, 2021). Patient-provider interactions are unique in that there is some degree of expectation that providers will have a disproportionately higher level of understanding and thus knowledge of health information. Bosnic-Anticevich et al. (2010) found that educating patients through a procedural demonstration for using an inhaler correctly to manage chronic obstructive pulmonary disease (COPD) was a better predictor of patient treatment success than written and verbal education. However, in a separate study that also used self-regulation theory, Carpenter et al. (2016) found that patients who received eye drop technique instruction during their office visit did not demonstrate better technique at using the eye drops at their follow-up appointment. With new data pointing to the negative consequences of insufficient health literacy on health care delivery for people with diabetes, assessing health literacy skill sets has become particularly noteworthy in this population (Sayah et al., 2012). The recent proclamation by the WHO in 2015 along with mounting research on nutritional quality suggested added sugar can lead to diabetic symptoms and an eventual diagnosis of type-2 diabetes.

In the mid-2010s, the WHO (2015) released their conclusions about the health risks posed by excessive consumption of added sugars. The time it has taken to question the safety of sugar as a food for humans reflects a remarkable accomplishment for sugar industry executives, transnational food companies, and government officials benefitting from their successes (Taubes, 2016). In his book *The Case Against Sugar*, Taubes (2016) presented persuasive evidence that indicated the Sugar Association regularly financed public health and nutrition research programs. This method reflects the strategy used by the tobacco industry during the same era and had an

undeniable influence on the implementation of nutrition standards. It is the role of health experts, including dietitians, to convey this information to patients at risk of developing type-2 diabetes. In the current study, use CAT (Giles, 2016) to guide the dietitian's comments to the patient. The attuning strategy related to information exchange is labeled interpretability.

Interpretability is an attuning strategy developed in CAT (Coupland et al., 1988). It is based on perceptions of the other person's information proficiency and their overall register to decode and comprehend situationally based knowledge. The delivery of care is often technical and emulates other professional-client or expert-non expert interactions (Brummerhenrich & Jucks, 2019; Street, 1991). Using CAT to examine information giving, Ahmed and Bates (2016) stated that patient preferences mainly encompass giving concise explanations and checking whether patients understood the information. Hewett et al. (2015) found health specialists who used jargon particular to their ingroup on patients 'charts in ways that limited outgroup providers' ability to decipher the messages. Their perception of outgroup doctors was a primary motivation for them to attain clarity after reading clinical notes, but outgroup doctors struggled with specialist's lexicon and therefore missed details in many cases. Having introduced the first objective of patient-provider interactions (information exchange) and the first attuning strategy (interpretability), I will now introduce the second function of patient-provider communication (relational communication) and the second attuning strategy (discourse management).

Relational Communication: Discourse Management

Relational communication constitutes the second communication function in health care contexts (Cegala, 2011). Relational communication is defined as communication behaviors that create a positive and trusting relationship between interactants (Cegala et al., 1996). A good deal

of evidence suggests that evaluations of providers' relational communication are associated with patients ’future health decisions and motivations to enact recommended health behaviors (Delaney & Singleton, 2020). Findings suggest that the provider’s relational communication with patients has implications for trust, satisfaction, and respect (Cegala et al., 1996). Patient perceptions of health providers' trustworthiness (as well as information competence) play an enormous role in whether patients decide to act on health recommendations (Peek et al., 2013). White et al. (2016) observed that mistrust among low-income diabetes patients seeking care in a public health setting influenced patient impressions of the provider’s communication style (e.g., speech rate). Lacking trust in the provider and/or the health information, the patient is likely to experience a high level of cognitive uncertainty. Health providers can reduce patient uncertainty through verbal methods, such as giving a review regarding the purpose for the appointment and explaining their role and expertise in relation to the visit’s purpose (Wanzer et al., 2004). Fiscella et al. (2004) showed that providers who routinely use patient-centered communication also receive higher trust. Richmond et al. (2002) found that perceptions of provider communication were positively related to provider trust and perceptions of the providers' competence. Radnofsky et al. (2021) recently reported the efforts of Cherokee leaders to establish community trust in COVID-19 vaccines through communication that cultural members confirm as being competent and consistent with cultural values and traditions.

Relational communication also improves patient involvement in the interaction, establishing trustworthiness (Liu & Jiang, 2021), feelings of provider support (Charoensukmongkol & Phungsoonthorn, 2020; Ruben et al., 2017), patient satisfaction (Hong & Oh, 2020) and the intent to adhere to the health advice (Marks et al., 2021). Relational

communication has also been shown to significantly affect the reduction of depressive symptoms (Wright et al., 2014) and blood sugar regulation (Robinson et al., 2019). Cegala (1997) described several key aspects of relational communication during patient-provider meetings, including communicating validation for the other person's comment (e.g., 'I understand why you would have trouble speaking about that'), naming communication behaviors (e.g., 'I noticed you paused when...'), and creating mutually supportive interactive dialogue (e.g., 'We can work through this') (Cegala, 1997). The current study aims to operationalize these principles by drawing on discourse management.

Discourse management is a diverse set of options whereby a speaker may facilitate a partner's contribution to ongoing talk by attending to their communication needs (Giles & Copeland, 1991). In health care interactions, discourse management has been defined as communication attending to the other person's conversational needs, such as turn-taking, backchannelling, topic choice, and face maintenance (Sparks et al., 2012). Positively attuned discourse management usually includes topic-sharing, sharing speaking turns, backchannelling, and expressing interest in what the other person has to say (Watson et al., 1999). Jin and Watson (2020) examined discourse management strategies and rapport building during medical conversations. The findings of their study showed that when providers were optimally accommodating on discourse management (e.g., sharing speaking turns), each effectively conveyed appropriate support and encouragement to the patient. Hesson et al. (2012) found patient-centered communication was significantly different from provider-centered (i.e., authoritarian) communication. In response to previous calls, the present study is designed to measure the impact of the provider's interpretability (i.e., information) and discourse

management (i.e., relational) attuning strategies as the experimental dimensions of the dietitian's communication style with the patient. These communication styles are the antecedents of perceptions of and responses to the health provider as an expert on matters important to the patient's health. In the next section, intergroup anxiety is introduced as an affective state a patient might experience during an appointment with the health provider.

Intergroup Anxiety

It is widely acknowledged that communication can reduce (or prolong) the emotional experience of anxiety (Liu et al., 2019). In this study, I examine a type of affective state (as opposed to trait) anxiety labeled intergroup anxiety. Intergroup anxiety is a form of anxiety that individuals feel prior to or during an intergroup encounter (Stephan, 2014). Harwood et al. (2005) described an intergroup encounter as a communication episode in which at least one person's communication is (cognitively and affectively) directed by their identification as a member of a social group. Intergroup anxiety frequently happens when individuals perceive differences in such a way that they expect their interactions will then be unpleasant or have adverse effects, thereby intensifying the anxiety (Hosek & Rubinsky, 2019).

Anxiety has been studied extensively as an explanatory factor between communication and intergroup attitudes (Montgomery & Zhang, 2018). Feelings of intergroup anxiety experienced by patients in encounters with health care providers can be studied as other ingroup/outgroup research has been conducted, including research on power, authority, and, in several cases, dehumanizing treatment of persons in a less powerful outgroup. Giles and colleagues (e.g., Giles et al., 2007) showed how power worked against and in favor of police-civilian relations (Watson & Soliz, 2019). Civilians are instructed to contact the police for

assistance, but due to the authority ascribed to police officers, this provokes high levels of intergroup anxiety during civilian encounters.

Systemic racism and income inequality further contribute to the long history and present conditions of inequitable health care access and treatment for marginalized populations (e.g., ethnic minorities). Intergroup anxiety is experienced when our attributions of others ’social identities affect our impressions of and communication with them. When someone classifies a person as “foreigner”, they are inferring a type of difference based on their identity as 'non-foreigner ’(Palomares et al., 2016). As a result, the perceptions attributed to the label “foreigner” influence the communication episode in real time because subjective perceptions influence their perceptions of the speaker’s communication (see Bourhis, 2009). Thus, communication is adjusted in response to salient group identities and the attributions applied to their interaction with the other person (Hewett et al., 2015). In the context of health care, providers ’legitimate and expert authority makes their interactions with patients an encounter that requires awareness and genuine care for the person's overall health. With this information, the first hypothesis is presented:

> H1: The fully accommodating health provider (i.e., the health provider is accommodating on both interpretability [providing clear and understandable health information to the patient] and discourse management [i.e., considering the patient’s conversational and emotional needs]) will produce the lowest intergroup anxiety in the patient, followed next by the partial accommodating health providers (i.e., the health provider is accommodating on either interpretability or discourse management), with the fully

nonaccommodating health provider (i.e., the health provider is nonaccommodating on both interpretability and discourse management) producing the highest level of intergroup anxiety in the patient.

Communication Competence

An extensive body of investigation has been devoted to analyzing the role of communication competence during medical interviews and consultations (McGee & Cegala, 1998). Communication effectiveness and appropriateness are subjective evaluations of an individual's communication competence (Spitzberg & Cupach, 1984). A review of the various ways competence has been described in scholarly texts and book chapters is beyond this study's scope. Still, readers can find this information in chapter two of Hannawa and Spitzberg's edited volume on this topic (see Backlund & Morreale, 2015). The next section describes communication competence in the health communication context.

Spitzberg and colleagues view effectiveness and appropriateness as core components as necessary for perceptions of communication competence to be measured (Cupach & Spitzberg, 1987). Communication competence is defined as the extent to which interactants achieve communication goals (effectiveness) through expressions which are suitable to the situation (appropriateness) (Cupach et al., 2010). Effectiveness has been shown to improve attitudes toward treatment (e.g., efficacy) (Villagran & Weathers, 2015) and adherence intention (Neumann et al., 2010). However, by tailoring their dialogue to the other patient's needs and objectives, they generated shared subjective perceptions of competence and were more likely to find common ground to conflicts. Effectiveness and appropriateness are the two dimensions integrated into Cupach and Spitzberg's (1987) model of relational competence and represent

complementary aspects guiding this investigation. By doing so, it is possible to learn more as to how objective and factual information (i.e., evidence-based) is correlated with and structured by judgments of the information source (i.e., the provider as the source of information) and knowledge of the topic (i.e., knowledge of type-2 diabetes). Communication accommodation theory, which Pitts and Harwood (2015) described as a social psychological theory of communication competence, could be applied empirically to assess certain subjective judgments of competence.

As a key aspect of the patient-centered communication, communication competencies have become a regular focus of provider communication skills instruction (Kreps, 2008). Koponen et al. (2014) examined providers' attitudinal states before and after taking a health communication skills course that emphasized awareness of relationship variables (e.g., supportive of patient needs). In review, much of the scholarship in interpersonal patient-provider communication contexts features two generalizable functions (Cegala, 1997), information exchange and relational communication. In this report, the dietitian's provision of health advice is partitioned by two subtexts: information about sugar consumption and communication conveying a shared partnership between both parties.

It is likely that participants' perceptions of the relational facet of communication perceptions will be higher when a patient receives a message that is optimally attuned on discourse management, the relational dimension described in CAT. From this information, the second hypothesis is presented as follows:

H2: Participants ʾjudgments of the health provider's communication competence will be most favorable in the fully accommodating condition, followed by the accommodating

discourse management condition and the accommodating interpretability condition, with those in the fully nonaccommodating condition judging the provider as least communicatively competent.

Conceptualizing Adherence

In the early part of the twenty-first century, the World Health Organization (WHO, 2003) formally organized the first of multiple meetings on the problems surrounding patient adherence to health treatment. After the inaugural 2001 gathering, adherence was defined as the extent to which a patient follows medical directions (WHO, 2001). In their 2003 follow-up assembly, the WHO (2003) expanded its definition in three ways. First, the role of the patient was reoriented as one that is active rather than passive. Second, aspects of patient behavior contributing to adherence were added (e.g., health-seeking behavior, attending follow-up appointments). Third, the nature of the relationship between a health provider and a patient was identified as fundamental to understanding adherence.

The WHO (2003) adopted a hybrid definition from Haynes (1979), Rand (1993), and the preceding WHO definition from 2001 (see Sabate, 2001). In the present study, adherence is defined as the extent to which a person's behavioral practice corresponds with the agreed recommendations from a health provider about taking medication, following a diet, and/or following lifestyle changes (WHO, 2003). Nonadherence has been associated with overall low quality of life, an accumulation of additional health problems, an estimated 125,000 deaths per year for treatable conditions, and the ensuing cost of over 100 billion U.S. dollars per year (Gonzales et al., 2008; Osterberg & Blaschke, 2005; Rodgers et al., 2018). Adherence has been studied because of behavioral intention on a regular basis and routinely examined as an outcome

of behavioral intention. Evidence indicates that patients who are partially adherent or nonadherent have poorer health outcomes when compared to fully adherent patients (Jin & Acharya, 2016). There is also a large body of evidence suggesting patient adherence is lower than researchers may predict (Harvey, 2013).

Researchers in Scotland used computerized dispensing data to compare amounts of appropriate insulin to the amount dispensed in young persons with type-1 diabetes. Twenty-eight percent of patients received less insulin than prescribed, resulting in an average annual shortfall of 115 days of treatment (approximately 31-32 % of a calendar year). This was linked to poor diabetes control, ketoacidosis, diabetes-related hospitalizations, and patient failure to take insulin (Morris et al., 1997).

Behavior Intent: The Theory of Planned Behavior

The theory of reasoned action and theory of planned behavior (Fishbein & Ajzen, 1975) presumes that human actions represent an outcome of intention to perform the action. Therefore, a key tenet of the theory of planned behavior is that the most proximal predictor of behavior is a person's intention to perform that behavior (Ajzen, 1991). The intention is guided by attitudinal valence, perceived social norms, and perceived self-efficacy (Rich et al., 2015). In the analysis of enacted behavior, the relative weight of intentions varies across situations (Ajzen, 1991).

The theory of planned behavior (TPB) has been validated as an adequate way to describe the importance of intention in behavior across a variety of contexts. It assesses the intention to perform a specific behavior as the main dependent variable, sometimes compared to the observed or reported behavior in various circumstances (Armitage & Carter, 2001). TPB aims to assess the intention to perform (or not) a specific behavioral activity as the dependent variable.

Components of TPB cover 39 % and 27 % of the variance on intention and behavior, respectively (Kahlor & Liang, 2016). In spite of logical consistency and parsimonious design, the TPB has been criticized for being static, mostly failing to account for the impact of affective and identity factors on behaviors (Sniehotta et al., 2014). Testing the theory of planned behavior as an outcome flowing from communication may address some of these previous limitations.

TPB and Prevention. Reiter et al. (2020) found those who reported their health provider would recommend they get vaccinated against COVID-19 were more likely to self-report acceptability to receive the COVID-19 vaccination. D'Antoni et al. (2019) found that participants ’intention to receive the vaccination (i.e., adherence) during the 2009 H1N1 pandemic was greater for those reporting higher perceived susceptibility (i.e., perceived personal risk), more anticipated regret (i.e., regretting not receiving the vaccination), higher levels of self-efficacy, and lower response costs attributed to the act of getting the vaccination.

In a recent study, Shmueli (2021) reported TPB accounted for 35% of the variance on intent to receive the COVID-19 vaccine and reported a further positive significant effect on intent to receive the vaccination when a health provider advised them to do so. Bringing in the intergroup framework, Hajek et al. (2007) found patients' perceptions of the providers' various communication adjustments affected patient intent to implement treatment protocols. Interestingly, they also found that perceived outgroup typicality of the provider and perceived provider accommodation would collectively influence overall evaluations of the conversation. Following this review of relational competence and its ’association with communication accommodation strategies, the following hypothesis is presented:

H3: The health provider's communication adjustment style will have a direct effect on adherence intention. When the provider is fully accommodating, the patient will have the highest reported intention to follow the health advice, followed by the conversational and informative conditions. Those in the fully nonaccommodating condition will have the lowest adherence intention out of the four experimental conditions.

Anxiety, Competence, and Adherence

Patient-provider communication has been defined as having two primary functions: (a) [health] information sharing, and (b) [fulfilling] relational or communicative needs (Kreps, 1997; 2011). It is further posited that when communication successfully accomplishes the aims of said functions, patient adherence intention will increase, and, as a result, it will improve treatment outcomes. The effect of communication styles (i.e., adjustments on interpretability and discourse management) on adherence intention are frequently mediated by patients 'affective status (e.g., anxiety; nervousness), expectations for and satisfaction with care, and impressions of the health care provider (Brummernhenrich & Jucks, 2019). For example, poor or confusing communication in psychiatric treatment exchanges can be exacerbated by stigmatizing social norms, leading the patient to doubt their diagnosis altogether and misinterpret treatment benefits (Milton & Mullan, 2014). Health providers can employ attuning strategies to reduce patient anxiety (Watson et al., 2016).

Jain and Krieger (2011) discovered when providers spoke about topics unrelated to the medical visit, it reduced patient anxiety by allowing for the opportunity to assimilate to an "otherwise tense environment" (p. 101). Zhao et al. (2021) examined anxiety and language selection between patients and providers in Quebec. When patients were communicating in their

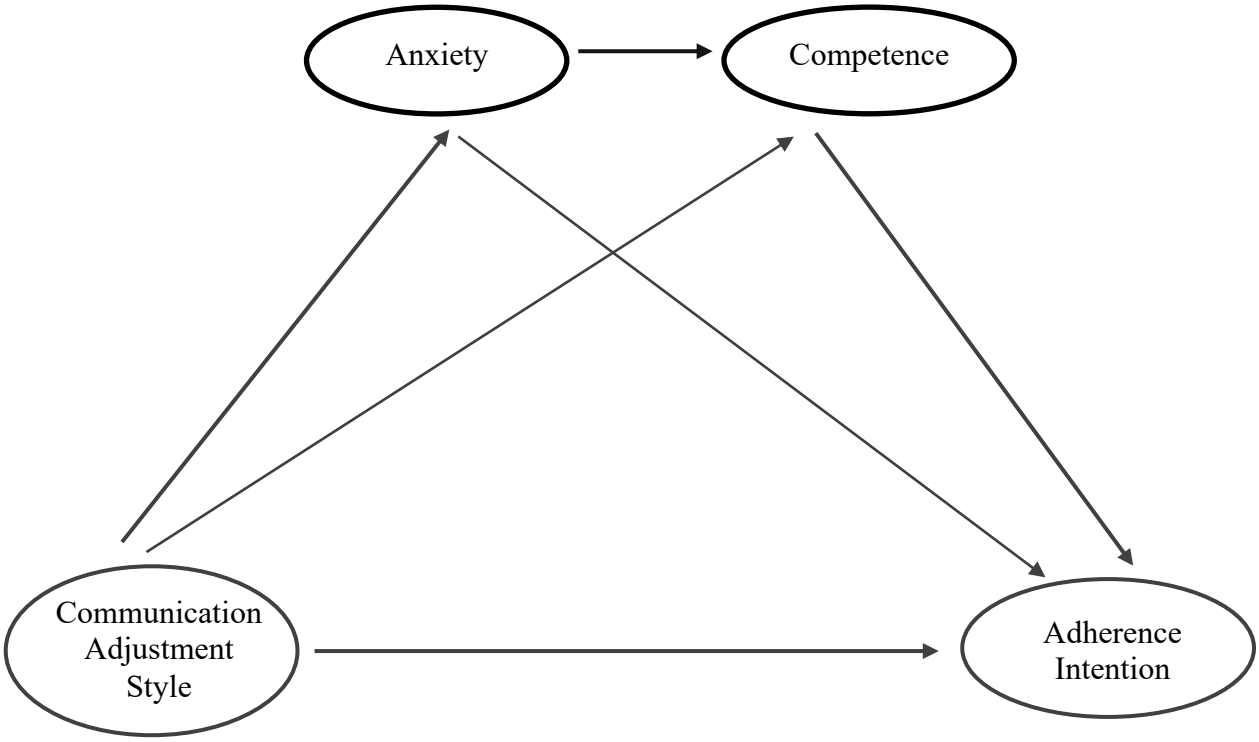
second language, with a health professional who communicated in their first language, patients ' general anxiety levels increased across physical and mental health consultation contexts. The anxiety felt by patients impacts impressions of the provider, too. Effective and appropriate delivery of health information requires awareness of and attention to communication competencies related to the health meeting (Parrott, 2004). Reducing feelings of intergroup anxiety in the patient have been shown to improve patient impressions of provider communication competence (Wiitenberg-Lyles et al., 2015). Impressions of the provider's competence can further influence a patient's intention to follow professional health advice. For instance, Diaz and Allchin (2013) described provider's linguistic competence as equivalent to linguistic safety (i.e., language leads to understanding of health instructions which impacts treatment efficacy). Considering the aforementioned associations, the fourth hypothesis is presented as follows:

> H4: The health provider's communication adjustment style will have an indirect effect on adherence intention through the serial mediators of participants 'feelings of intergroup anxiety and participants perceptions of the health providers 'communication competence.

Summary

In summary, although a paucity of theory-guided research has been a critique of health communication scholarship for decades (Cegala & Street, 2010; McCullock et al., 2021; Thompson, 1984) several interpersonal theories (e.g., Affection Exchange Theory [Floyd, 2018]) and models (e.g., Street's Ecological Model [Street, 2003]) are now being developed as the field continues to mature as a social scientific subdiscipline in communication studies. Due to the

intergroup features present in patient-provider encounters (Watson et al., 2016), this study will use Communication Accommodation Theory (CAT) (Giles, 2016; Harwood et al., 2019) to study communication behavior adjustments. The conceptualization of nonaccommodation is key to operationalizing provider strategies, as it coincides with the emergence of the subjective approach in CAT. This chapter proposed developing provider messages (to a patient) on two dimensions, or attuning strategies. These strategies were selected based on their conceptualization in the CAT literature (Zhang & Pitts, 2019) and Cegala's research identifying information sharing (exchange) and relational development (communication) as the two primary communicative functions in patient-provider meetings. The importance of understanding health information has become a core aim of programs designed to improve public health, health care, and individual health outcomes. The WHO's proclamation in 2015 along with mounting research on nutritional quality suggested added sugar can lead to type-2 diabetes. Sugar consumption, as it is related to diabetic symptoms and type-2 diabetes, is featured as the topic of the conversation featured in this study (introduced in the next chapter). It is the role of health experts, including dietitians, to convey this information to patients at risk.



Hypothesized Model (see Hayes, 2013; 2018)

Model 6 (shown above) allowed me to test the indirect paths through the two mediators as parallel mediators and sequentially in addition to the direct effects of the experimentally manipulated variable, the provider's communication adjustment style on adherence intention.

Chapter Three: Method

This study used an experimental design approach to test the effects of communication accommodation strategies (i.e., discourse management and interpretability) on participant feelings of anxiety, perceptions of the provider's communication competence, and intention to implement the provider's advice. The current chapter goes through the development of the pilot study, major measurements, the manipulation check and subsequent revisions, and the main study. Participants were randomly assigned to one of the four conditions in both pilot study and the main study. The Institutional Review Board (IRB) approved the current study in the summer of 2020 (see Appendix A). The recruitment process began in July of 2020 and participation in the pilot study concluded in August 2020.

Pilot

Prior to conducting the final, full-scale investigation, a pilot study was done to validate the overall research design by sampling and recruiting a smaller sample. The main goal of the pilot study was to test the manipulation validity. The recruitment email was sent on July 17th, 2020. It included a description of the research study, eligibility criteria, extra credit information, the researcher's contact information, and a hyperlink to participate in the study (see Appendix A).

Sample

Participants (N = 92) were recruited from an introductory communication course at a medium-sized university in the Midwest region of the U.S. Participation was voluntarily completed online. Respondents could exit the study at any point without penalty. It was required that participants should be at least 18 years of age to participate. Each person reported assigned

sex, gender (58 Females, 32 Males, 2 Non-Binary). In terms of race and ethnicity, 66.3 % of the sample identified their race as White or European American ($N = 61$), 13% identified as Asian American or Pacific Islander ($N = 12$), 6.5 % identified as more than one race ($N = 6$), 5.4 % identified as Latino/a/x or Hispanic ($N = 6$), 4.3 % identified as African American ($N = 4$), and 4.3 % preferred not to answer ($N = 4$). Respondents also reported their age in years ($M_{age} = 21.25$, $SD = 3.65$). A total of 25 (27.1 %) participants read the fully accommodating condition statement, 21 (22.8 %) participants read informative adjustment condition; 19 (21.7 %) participants were in the conversational adjustment condition, and 27 (29.3 %) participants viewed the fully nonaccommodating condition.

Procedures

All participants opened the hyperlink and were told about the research, the risks posed, and their right to leave the study at any time without penalty. Upon agreeing to participate, individuals were presented with standard background information about the health scenario. The following information was included in the introductory statement:

> The health provider in this scenario is identified as a registered dietitian. The health provider is meeting with a new patient who admitted they rarely eat fruits and vegetables and conveyed some worry or difficulty about successfully changing current eating patterns.

Experimental Manipulations

Four experimentally manipulated health communication statements from a registered dietitian were created representing the health provider's communication strategies. In creating the four statements, I first drew on prior work by Brummernhenrich and Jucks (2019) and experimental research in prior intergroup communication research (Soliz & Bergquist, 2016;

Jones et al., 2018). I then conducted informal conversations with individuals who had recent experiences communicating with health providers/dietitians to make sure the statements were realistic and had a series of meetings with my advisor to revise the initial versions to increase conceptual and operational clarity and validity and to make sure the length of the four statements were about the same (ranging 87 to 89 words). Minor modifications were made following these procedures before implementing the main study to increase clarity.

A 6-item manipulation check was administered to check for the validity of the four conditions (three items measured discourse management and three items assessed interpretability). Items from prior CAT literature within the health care context with attuned (or non-attuned) interpretability and discourse management were modified for this dissertation (Jones et al., 2018; Watson & Gallois, 1998).

The validity of the manipulations (i.e., whether participants understood the statements as intended) was examined by conducting a multivariate analysis of variance (MANOVA) with the four experimental conditions as between-subjects factors. Upon agreeing to this statement, participants were presented with standard background information about the health scenario. Using a between subject design, each participant read the same introduction statement and then was randomly assigned to one of the four experimental conditions.

Depending on the condition, the provider's statement was manipulated in terms of accommodating and nonaccommodating interpretability and discourse management. In the fully accommodating condition, the providers' statement was accommodating on both discourse management and interpretability. Accommodating interpretability was operationalized as information clarity, while the accommodating discourse management addressed conversational

needs (e.g., face support, allowing for patient participation). Participants in this condition were provided with the following statement:

> "In your situation, it would be advisable to avoid foods containing added sugar and eat more fruits and vegetables. I am aware of your situation. You do not eat enough fruits and vegetables, and you are concerned about changing your diet. We can develop a plan together if there is a need. Here is a brochure about eating fruits and vegetables. It's important to understand glucose is a type of sugar. Your body converts all food to energy after you eat. However, diets high in added sugar slow the process down"

Condition two featured a blend of accommodating interpretability and nonaccommodating discourse management. In the informative condition the health providers' communication was accommodating on interpretability (information sharing) but not discourse management (communication needs). Participants were shown the following statement:

> "You must avoid all foods containing added sugar and eat more fruits and vegetables! Your current diet and eating habits are problematic and risky! Are you having difficultly changing your diet? Too bad, there is no choice if you want to live. You must change considering your deprived diet. Here is a brochure about eating fruits and vegetables. It is important to understand glucose is a type of sugar. Your body converts all food to energy after you eat. However, diets high in added sugar slow the process down."

In the conversational condition, the provider is accommodating in terms of discourse management but misses the mark in terms of interpretability, primarily in the use of jargon and paucity of explanation. The following statement was shown to participants in condition three:

> "In your situation, it would be advisable to avoid foods containing added sugar and eat more fruits and vegetables. I am aware of your situation. You do not eat enough fruits and vegetables, and you are concerned about changing your diet. We can develop a plan together if there is a need. Here is a brochure about glycemic load and chlorogenic acid. The A1C test tells me about your blood glucose. Your blood glucose is the problem. It is important to understand glucose is in the family of monosaccharides and disaccharides."

Finally, condition four (i.e., fully nonaccommodating) consisted of a fully. Fully nonaccommodating communication is ineptly attuned to the information needs (interpretability) and communication needs (discourse management). The provider is curt and disinterested, taking

little to no notice of the conversational needs associated with discourse management or considerations of interpretability barriers due to less health and clinical education. Participants in this condition viewed the fully nonaccommodating adjustment statement:

> "You must avoid all foods containing added sugar and eat more fruits and vegetables! Your current diet and eating habits are problematic and risky! Are you having difficultly changing your diet? Too bad, there is no choice if you want to live. You must change, considering your deprived diet. Here is a brochure about glycemic load and chlorogenic acid. The A1C test tells me about your blood glucose. Your blood glucose is the problem. It's important to understand glucose is in the family of monosaccharides and disaccharides."

Pilot Study Manipulation Check

Six 7-point Likert-scale items were used to check the validity of the four accommodating and nonaccommodating scenarios (1= Strongly Disagree and 7 = Strongly Agree). Three of the items assessed discourse management (e.g., "The health care provider was considerate of the patient 'views and ideas") and three items assessed interpretability (e.g., "The health care provider used terminology that non-health professionals could understand"). Cronbach's alphas were satisfactory for the two measures (i.e., all above .70).

A one-way multivariate analysis of variance (MANOVA) was conducted to determine the effect of communication adjustment style on the two dependent variables, discourse management and interpretability. The multivariate analysis revealed a statistically significant difference between the four adjustment conditions. The univariate analysis demonstrated the experimental conditions differed on discourse management (F (3, 88) = 39.86, $p < .001$, $\eta^2 = .58$) and interpretability (F (3, 88) = 8.50, $p < .001$, $\eta^2 = .23$). Because the ANOVA test was significant, follow-up tests were conducted to evaluate pairwise differences among the means (pilot results can be viewed in Table 3.1). Those in the fully accommodating adjustment (M =

5.19, *SD* = 1.04, *N* = 25) and conversational adjustment statements (*M* = 4.80, *SD* = 1.10, *N* = 19) rated the provider as more accommodating on discourse management compared to the informative condition (*M* = 2.47, *SD* = 1.30, *N* = 21) and the fully nonaccommodating adjustment condition (*M* = 2.50, *SD* = 1.04, *N* = 27). As expected, the fully accommodating adjustment condition (i.e., condition 1) (*M* = 5.52, *SD* = 1.19, *N* = 25) was perceived to be higher on interpretability compared to the fully nonaccommodating condition (*M* = 4.04, *SD* = 1.06, *N* = 27). The fully accommodating and informative (*M* = 5.07, *SD* = 1.21, *N* = 21) conditions (i.e., conditions 1 and 2, respectively) did not differ significantly on interpretability adjustments. Results further indicated that participants in the fully accommodating adjustment condition (i.e., condition 1) viewed the provider to be more accommodating on discourse management than the informative and fully nonaccommodating conditions (i.e., conditions 2 and 4, respectively). However, results indicated no difference between the conversational condition (i.e., condition 3) and fully accommodating condition (i.e., condition 1) on discourse management. Results also indicated that participants in the conversational adjustment condition (*M* = 3.75, *SD* = 1.66, *N* = 19) (i.e., condition 3), compared to the informative condition (i.e., condition 2), judged the provider's discourse management to be more accommodative on discourse management adjustments. The complete results of the pilot test are provided below in Table 3.1.

Table 3.1. Pilot Study. Conditions on Discourse Management and Interpretability

Statement Condition		*Discourse Management*	*Interpretability*
Fully Accommodating Adjustment Style	*M*	5.19[a]	5.52[a]
	SD	1.04	1.19
	N	25	25
Informative Accommodating Adjustment Style	*M*	2.47[b]	5.07[a]
	SD	1.30	1.21
	N	21	21
Conversational Accommodating Adjustment Style	*M*	4.80[a]	3.75[b]
	SD	1.10	1.66
	N	19	19
Fully Nonaccommodating Adjustment Style	*M*	2.50[b]	4.04[b]
	SD	1.04	1.06
	N	27	27
Total	*M*	3.70	4.64
	SD	1.69	1.49
	N	92	92

Mean scores for realism (i.e., similarity with typical health appointments) of the four statements (conditions) were also assessed using a single item 7-point scale (1 = not similar at all and 7 = very similar) by asking participants to provide a rating about to what extent the health provider's remarks were similar to most health care providers 'remarks in providing health information to patients. The mean realism score was 5.16 (*SD* = 1.38) and all the mean scores in the four conditions were above the mid-point of the scale (i.e., 4). Results from the pilot study

indicated successful manipulation of the four statements in representing the health provider's communication strategies.

Main Study

Results from the pilot study indicated successful manipulation of the health provider's communication strategies. After the pilot study, I started to collect data for the main study by following similar procedures used in the pilot study. The sample for the main study is described in the next section, followed by a review of the procedures, and, lastly, the results of the manipulation check.

Sample

Participants (N = 365) were recruited from Qualtrics, a research sampling recruitment company. Participation was voluntarily completed online. Respondents could exit the study at any point without penalty. It was required that participants should be at least 18 years of age to participate. Each person reported assigned sex (191 Females, 174 Males). In terms of race and ethnicity, 62.5 % of the sample identified their race as White or European American (N = 228), 18.6 % identified as Latino/a/x or Hispanic (N = 68), 8.2 % identified as African American (N =30), 7.1% identified as Asian American or Pacific Islander (N = 26), 6.5 % identified as more than one race (N = 6), and 2.5 % preferred not to answer (N = 9). Respondents also reported their age in years (M_{age} = 37.34, SD = 8.55). A total of 94 participants read the fully accommodating condition statement, 90 participants read informative adjustment condition; 90 participants were in the conversational adjustment condition, and 91 participants viewed the fully nonaccommodating condition.

Procedures

Following the same procedures used in the pilot study, all participants opened the hyperlink and were told about the research, the risks posed, and their right to leave the study at any time without penalty. Participants were first asked to complete a section that asked for demographic information and their background knowledge of type-2 diabetes. The following information was included in the introductory statement before they were randomly assigned to one of the four experimental conditions (see Appendix C). Upon agreeing to participate, individuals were presented with standard background information about the health scenario. The following background information was shown to each participant:

> The health provider in this scenario is identified as a registered dietitian. The health provider is meeting with a new patient who admitted they rarely eat fruits and vegetables and conveyed some worry or difficulty about successfully changing current eating patterns.

Main Study Manipulation Check

The same 7-point Likert-scale items were used to check the validity of the four accommodating and nonaccommodating scenarios (see Appendix D). Three of the items assessed discourse management (e.g., "The health care provider was considerate of the patient 'views and ideas"), and 3 items assessed interpretability (e.g., "The health care provider used terminology that non-health professionals could understand"), Cronbach's alphas were satisfactory. The same statistical tests were conducted to conduct the manipulation check. The results are given in Table 3.2 below.

	Fully Accommodating Adjustment			Informative Adjustment			Conversational Adjustment			Fully Nonaccommodating Adjustment		
	M	SD	N	M	SD	N	M	SD	N	M	SD	N
Discourse Management	5.39[a]	1.23	94	3.66[b]	1.63	90	5.54[a]	1.04	90	3.75[b]	1.74	91
Interpretability	5.51[a]	1.06	94	5.46[a]	.89	90	2.84[b]	1.03	90	3.13[b]	1.15	91

Table 3.2 Manipulation Check for the Main Study

Note. Means with different superscripts in each row vary significantly from one another at $p < .05$.

Realism. In addition, perceived realism of the four statements was assessed using a single item 7-point scale (1 = not realistic, 7 = very realistic) by asking participants to provide a rating about how realistic the health provider's remarks were in representing their experiences interacting with health providers. The mean realism score was 5.90 (*SD* = 1.49) and the mean scores in the four conditions ranged from 5.63 to 6.20. Results from the manipulation further validated the validity of the manipulation of the four statements in representing the health provider's typical communication strategies in communicating with patients.

Major Measures

The following section includes a review of the major measures for each of the constructs used in the main study to determine participant's subjective perceptions of the health provider's communication adjustments on perceptions of the health care provider, the communication, and the intention to follow the health provider's advice.

Intergroup Anxiety. Intergroup anxiety was measured using the intergroup anxiety sub-scale (Stephan and Stephan, 1985). The 10-item measure constructed by Stephan and Stephan (1985) had an initial Cronbach's alpha of. 86 for intergroup anxiety (as cited in Hosek & Rubinsky, 2019). Five items (see Appendix F) were scored using a Likert-scale that ranges from 1 (not at all) to 7 (extremely) in terms of feeling the negative emotion (e.g., disappointed; annoyed). Cronbach's alpha was satisfactory ($\alpha = .91$).

Communication Competence. Items assessing communication competence were adopted from a version of the relational competence scale developed by Canary and Spitzberg (1987) to study interpersonal conflict. Appropriateness refers to the degree to which an interlocutor's communication matches the social expectations and norms suitable for the interaction (Cegala et al., 2010). Appropriateness is jointly paired with communication effectiveness, which refers to the impression a person has concerning the achievement of communication goals and objectives (Cegala et al., 2010).

The scale contains four items assessing appropriateness (e.g., "The way the health provider communicated things was suitable for the situation") and four items to measure effectiveness (e.g., "The health care provider's communication was useful for the patient"). Canary and Spitzberg (1987) clarified that situational appropriateness and general appropriateness could be assessed according to the study's objectives. Thus, I adapted the portion of items recommended for particular contexts, such as health care settings (see Appendix E). Reliability for both appropriateness ($\alpha = .93$) and effectiveness ($\alpha = .93$) were sufficiently high. Exploratory factor analysis (EFA) was conducted to examine the dimensionality of the construct. EFA results indicated there was only one meaningful factor, which explained 80.26% of the

variance. The item loadings ranged from .85 to .93. Hence, in the main analyses testing the hypotheses, these items were combined as a single construct by creating a mean index (i.e., communication competence, $\alpha = .96$).

Adherence Intent. Five items were adapted from literature using the theory of reasoned action (TRA) (Ajzen, 2001) to measure participant's intention to follow through on the health recommendations (see Appendix H). The intent is posited to be the best indicator of actual behavioral action (Ajzen, 1985). If attitudes toward such actions are perceived as positive, the intention to conduct a given behavior may increase (Kahlor & Liang, 2016). Items from the Fishbein and Ajzen (2010) subscale for behavioral intent were developed to evaluate the intention to adhere to the provider's recommendations (e.g., as a patient, I would plan to follow the health provider's advice and dietary recommendations). Sufficiently high alpha reliability was reached across the five items ($\alpha = .91$).

Covariates. Participant sex, age, and prior knowledge of Type-2 Diabetes were included in the analysis. Demographic factors were age and assigned sex. This decision was made based on the Comprehensive Model of Information Seeking (CMIS; Johnson & Meischke, 1993), positing that social identity factors can influence health behaviors (Yang et al., 2017).

Chapter Four: Results

This chapter reports on the results of the three hypotheses. This chapter summarizes the major findings following the statistical analyses of the data. The data analysis was performed with SPSS 27 and in part using the Hayes Process Macro (version 3.5) for SPSS (Hayes. 2018).

Hypothesis 1

Hypothesis 1 predicted the dietitian's communication adjustment style would impact participants' feelings of anxiety. The hypothesized relationship between the four communication adjustment styles and feelings of anxiety was examined by conducting a one-way univariate analysis of covariance (ANCOVA) with Bonferroni post hoc procedures. The experimental condition was entered as a between-subject factor and participant's age, sex, ethnicity, years of formal education, and prior knowledge of type-2 diabetes were entered as covariates.

Communication adjustment style was entered as the independent factor (i.e., 'fixed factor 'in SPSS 27) and feelings of anxiety were entered as the dependent factor. The descriptive statistics revealed participants reading the fully accommodating adjustment statement ($M = 2.17$, $SD = 1.30$, $N = 93$) and conversational adjustment condition ($M = 2.29$, $SD = 1.26$, $N = 89$) felt less anxious in contrast to the fully nonaccommodating adjustment ($M = 3.35$, $SD = 1.67$, $N = 90$) and informative adjustment conditions ($M = 3.39$, $SD = 1.83$, $N = 88$).

Overall, initial univariate analysis with all four conditions (communication adjustment: fully accommodating; interpretability; discourse management; fully nonaccommodating)

indicated a statistically significant difference between the communication adjustment styles (IV) on feelings of anxiety, lending support for the predicted relationship, F (3, 351) = 14.59, p < .001, partial η^2 = .11.

The estimated marginal means, which gives the adjusted means after controlling for the covariates (i.e., removing the effect of the covariates on the main effect of communication adjustment style on feelings anxiety), was assessed. Participants in the fully accommodating adjustment condition reported lower feelings of (intergroup) anxiety compared to participants in the informative adjustment condition, F (1, 177) = 25.46, p < .001, partial η^2 = .126, and fully nonaccommodating condition, F (1, 176) = 19.56, p < .001, partial η^2 = .10. No statistically significant difference was revealed between the fully accommodating and conversational conditions on intergroup anxiety, F (1, 176) = 0.23, p = .63, partial η^2 = .001.

Participants in the interpretability adjustment condition felt more anxiety compared to participants in the discourse management adjustment condition, F (1, 175) = 16.82, p = .64, partial η^2 = .001, but participants in the fully nonaccommodating adjustment condition felt a similar amount of anxiety as those in the interpretability adjustment condition, F (1, 171) = 0.14, p = .71, partial η^2 = .001. The sixth univariate of analysis compared the discourse management and fully nonaccommodating conditions on feelings of anxiety. Results indicated a statistically significant difference between the two groups on feelings of anxiety, with those in the discourse management condition reporting lower feelings of anxiety compared to participants in the fully nonaccommodating style, F (1, 173) = 21.75, p < .001, partial η^2 = .112.

Altogether, fully accommodating adjustment differed from the informative adjustment and fully nonaccommodating style on feelings of intergroup anxiety, as predicted. The provider's communication in the discourse management adjustment style was associated with lower feelings of anxiety compared to participants in the informative and fully nonaccommodating adjustment conditions. However, counter to hypothesis 1, no difference was discovered between the fully accommodating and discourse management adjustment styles. Overall, hypothesis 1 was partially supported. The second hypothesis was tested using the same approach as the first hypothesis.

Hypothesis 2

Hypothesis 2 predicted the dietitian's communication adjustment style would impact participants' perceptions of the dietitian's communication competence (as a composite of effectiveness and appropriateness) (Spitzberg, 2013). Mirroring the approach used to test the first hypothesis, the relationship between the provider's communication adjustment style and communication competence was examined by conducting an ANCOVA. The experimental condition was entered as a between-subject factor. Participant age, sex, ethnicity, and prior knowledge of type-2 diabetes were entered as covariates. Based on the analysis, participants reading the fully accommodating adjustment statement (M = 5.70, SE =1.30) and discourse management adjustment statement (M = 5.60, SE = 1.32) perceived the provider's communication to be more competent in contrast to the fully nonaccommodating adjustment (M = 4.79, SE = 1.31) and informative adjustment styles (M = 5.04, SE = 1.33). Therefore, the initial

univariate analysis with all four conditions (communication adjustment: fully accommodating; interpretability; discourse management; fully nonaccommodating) indicated a statistically significant difference between the communication adjustment styles (IV) on perceptions of the provider's communication competence lending support for the predicted relationship, F (3, 352) = 10.93, $p < .001$, partial $\eta^2 = .085$. Participants in the fully accommodating adjustment condition and discourse management adjustment condition perceived the provider's communication to be more competent (i.e., a combination of communication appropriateness and communication effectiveness) compared to the interpretability adjustment and fully nonaccommodating adjustment styles. Similar to the first hypothesis, the results partially support the predictions of hypothesis 2.

Hypothesis 3 predicted that the health provider's communication adjustment style would have a direct effect on adherence intention. An analysis of covariance (ANCOVA) was performed with the experimental condition entered as a between subject factor and participant assigned sex/gender and knowledge of type-2 diabetes entered as covariates. The results showed that the experimental conditions had a direct effect on adherence intention, F (3, 355) = 5.69, $p < .001$, partial $\eta^2 = .05$. Pairwise comparisons revealed a significant difference between the fully accommodating and fully nonaccommodating adjustment styles and conversational vs. fully nonaccommodating adjustment styles (i.e., participants in conditions 1 and 3) were more likely to report the intention to adhere to the provider's health advice compared to the participants in the fully nonaccommodating adjustment style. The results are presented in table 4.1 below.

	Fully Accommodating Adjustment			Informative Adjustment			Conversational Adjustment			Fully Nonaccommodating Adjustment		
Dependent Variable	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*
Intergroup Anxiety	2.17[a]	1.30	94	3.37[b]	1.82	90	2.28[a]	1.26	90	3.35[b]	1.74	91
Communication Competence	5.79[a]	1.02	94	4.92[b]	1.65	90	5.64[a]	0.89	90	4.75[b]	1.67	91
Adherence Intention	5.68[a]	1.06	94	5.35[b]	1.28	90	5.78[a]	0.9	90	5.09[b]	1.40	91

Table 4.1. Means and standard deviations for H1, H2, and H3

Hypothesis 4 predicted that the health providers communication adjustment style (i.e., manipulated on interpretability and discourse management) would have an indirect effect on adherence intention sequentially through participants feelings of anxiety and participants perceptions of the dietitian's communication competence (communication adjustment styles → feelings of anxiety → perceptions of communication competence → adherence intention). Model 6 from Hayes's regression-based PROCESS macro (version 3.5) for SPSS (version 27.0; Hayes, 2018) was used to test the hypothesis. Model 6 tests the indirect paths through the two serial mediators in addition to the direct effects of the experimentally manipulated variable, the provider's communication adjustment style on adherence intention. Model 6 output also displays indirect effects of the focal predictor on the dependent variable by way of two parallel mediators, participants' feelings of anxiety (M_1) and participants 'perceptions of the health provider's

communication competence (M_2) independently of one another (i.e., the indirect effect of X on Y through M_1; the indirect effect of X on Y through M_2)

Three dummy-coded predictor variables were created to conduct the six pairwise comparisons. The first dummy-coded predictor had the fully accommodating condition as the reference group (i.e., it was coded as zero and the test group coded as one, thus generating three pairwise comparisons generated). The second dummy-coded predictor had the second experimental condition (i.e., accommodating interpretability condition coded as zero and the test of the groups coded as one, thus generating two more different comparisons). The third dummy-coded predictor had the third experimental condition (i.e., accommodating discourse management) coded as the reference group (i.e., it was coded as zero and the test groups coded as one, thus adding one more different comparison). For each of the six analyses, adherence intent or the intention to follow through on the recommendations given by the health provider was entered as the outcome variable (Y). The first and second sequential mediators were participants' feelings of anxiety (M_1) and participants ’perceptions of the health provider's communication competence (M_2).

Participants’ age, sex, ethnicity, years of education, and knowledge of type-2 diabetes were entered as covariates. Hypothesis 3 tested the direct effect of the health provider’s communication adjustment styles on adherence. Hence, I focus on reporting results related to H4, the predicted indirect effects in this section. Results from the first comparison (i.e., the fully accommodating adjustment style and the interpretability accommodating adjustment style)

revealed a significant indirect effect on adherence intention through feelings of anxiety (M_1) and perceptions of communication competence (M_2) as sequential mediators, b = .13, SE = .04, 95 % C.I. [.222, .057] was significant.

The results from the second comparison (i.e., the fully accommodating adjustment style and the discourse management adjustment style) did not show a significant indirect effect of the health provider's communication adjustment styles through the sequential mediators, feelings of anxiety (M_1) and perceptions of communication competence (M_2) on adherence intention, b = .038, SE = .03, 95 % C.I. [-.099, .010].

Results from the third comparison (i.e., the fully accommodating adjustment style and the fully nonaccommodating adjustment style) revealed a significant indirect effect on adherence intent through feelings of anxiety as a single predictor (M_1), b = .11, SE =.04, 95 % C.I. [.202, .044] and through perceptions of communication competence (M_2) as a single mediator (b = .154, SE = .06, 95 % C.I. [.279, .032]).

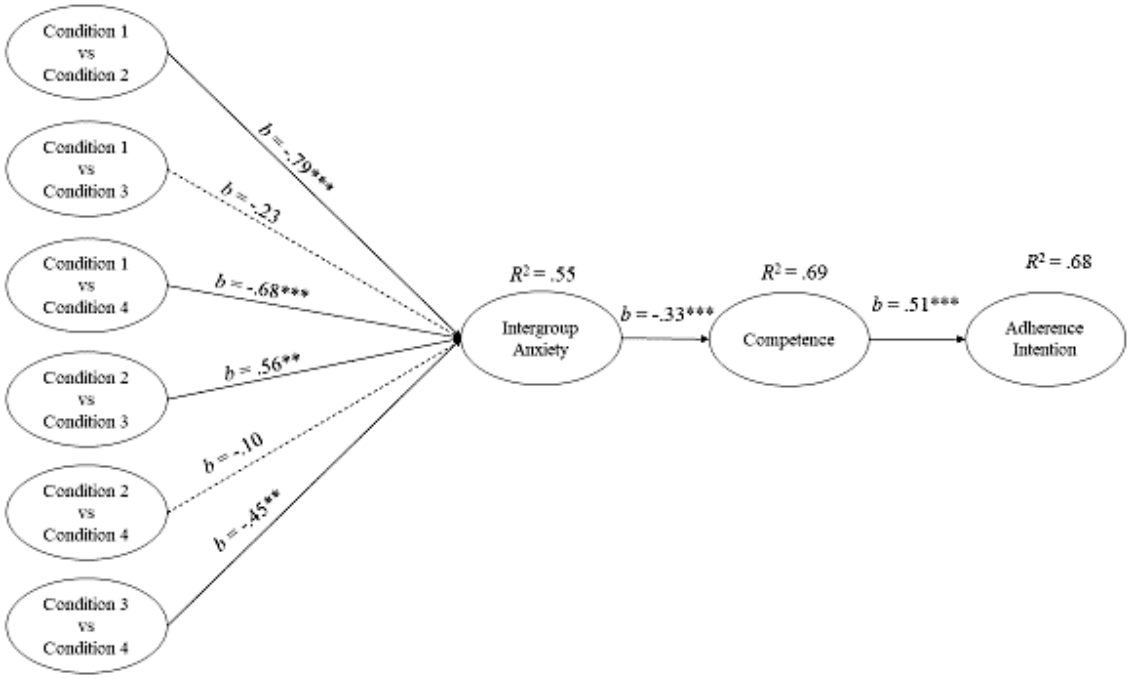
The fourth comparison (i.e., informative adjustment style and conversational adjustment style) revealed a significant indirect effect on adherence intent through feelings of anxiety (M_1) and perceptions of communication competence (M_2) as sequential mediators (b = -.09, SE = .03, 95 % C.I [-.037, -.161]).

Results from the fifth comparison (i.e., interpretability adjustment style and fully nonaccommodating adjustment style) did not demonstrate a significant indirect effect on

adherence intent through feelings of anxiety (M_1) and communication competence (M_2) as sequential mediators (b = .02, SE = . 03, 95 % C.I [-.041, .069]).

Results from the sixth comparison (i.e., discourse management adjustment-fully nonaccommodating adjustment) indicated a significant indirect effect on adherence through feelings of anxiety (M_1) and perceptions of communication competence (M_2) as sequential mediators (b = .08, SE =. 03, 95 % C.I [.142, .023]). Overall, model estimations using Model 6 revealed consistent results regarding the direct effects of the health provider's communication styles on adherence. Serial mediation analysis results supported Hypothesis 4 as four of the six pairwise comparisons had a significant indirect effect on adherence intent through the two mediators (anxiety and competence) sequentially (see Figure 1).

Figure 1. The Health Provider's Communication Styles on Adherence Intention Through Anxiety and Competence.



Chapter 5: Discussion

Guided by communication accommodation theory (Giles, 2016; Zhang & Giles, 2018), this study used an experimental design to analyze the effect of a health provider's (dietitian's) communication adjustment style on participants ’feelings of intergroup anxiety (H1), perceptions of communication competence (appropriateness and effectiveness) (H2), adherence intention (H3), and the indirect effect of communication adjustment style on adherence intention through feelings of anxiety and communication competence (H4). There were three major goals for this study. The first and second objectives emphasized the importance of developing research that encompasses an intergroup perspective into interpersonal contexts and the importance of theoretically driven research in health communication. The third objective was to examine patient-provider communication in a lesser-known context related to an emerging health care issue; preventing the onset of type-2 diabetes. The health provider’s communication adjustment style produced 4 experimental manipulations following literature from intergroup communication, communication accommodation theory, and the theory of planned behavior.

The fully accommodating condition depicted the health provider as being accommodating on both interpretability (i.e., providing clear and understandable health information to the patient) and discourse management (i.e., considering the patient’s conversational and emotional needs). The two mixed conditions were inverted so that the informative statement was accommodating on only interpretability, while the conversational statement was accommodating only on discourse management. The fully nonaccommodating condition depicted the health provider as nonaccommodating on both interpretability and discourse management. A summary of the findings is given in the next section.

Summary of Findings

Overall, the findings point to two key themes. The first theme proposes that, regardless of if the health provider accommodated or not in providing health related information, when the provider's communication was accommodating on discourse management (as in conditions 1 and 3), participants felt less anxiety, perceived the provider as more competent, and had higher adherence intention than when the health provided was nonaccommodating on discourse management. In other words, when the provider failed to accommodate on discourse management, individuals felt more intergroup anxiety, viewed the provider as being less competent, and were less likely to follow health advice. The effect sizes for significant direct effects are also necessary to consider. Cohen's conventions, which are based on overlapping distributions, guides researchers in determining if the effect is small, medium, or large (Nolan & Heinzen, 2017). A small effect size is equal to 0.2, a medium effect is 0.5, and a large effect size is 0.8. The effect size reveals how much the populations do (or do not) overlap. The largest effect sizes appeared in comparisons between the fully accommodating adjustment style (condition 1) and the informative adjustment style (.79) and fully nonaccommodating adjustment style (.68). The proposed model can be applied to several conceptual frameworks used to assess and develop efficacious provider strategies in interacting with their patients by improving on the study's shortcomings and retooling the experimental conditions with additional amount attuning procedures.

The second theme highlights the role of adjustment style on adherence intention through two serial mediators, intergroup anxiety and communication competence. Similar to the three directional hypotheses, the results of hypothesis 4 revealed a significant serial mediating effect

from the provider's communication adjustment style on adherence intention through intergroup anxiety (M_1) and communication competence (M_2) when the provider accommodated on discourse management. In each of the four hypotheses, discourse management, which features communication moves to meet the patient's conversational needs, impacted the outcome variable both directly and indirectly. The r^2 values for Intergroup anxiety (0.55), communication competence (0.69), and intention to adhere (0.68) also indicate that the model has a strong explanatory power, or the theory's ability to provide a convincing explanation for the phenomena for which it was developed to explain (Chaffee & Berger, 1987). The higher r^2 value indicated predictors variables in the model (e.g., adjustment style) means that more of the variance in the outcome (*Y*) variable was accounted for by the predictor (*X*) variable (Pedhauzer, 1997). This is promising for future research examining mediation using CAT. Future work should explore additional mediators (e.g., stereotyping; health literacy and knowledge) to discover the mechanisms through which communication affects health decisions.

Implications of Findings

Several implications are noteworthy considering these findings. The findings are applicable for discussions on and developments of mediation models in social science in general and communication studies in particular. Mediation was the best approach because, as Hayes (2013; 2018) noted, questions concerning indirect effects come after the researcher has established a direct effect of the independent variable acting on the dependent variable. Altogether, the effect sizes found in this study are compelling.

Theoretical Implications

Recent work using CAT has considered inferred motives, which is defined as "the content, and by extension valence, of perceived intentions when behavior is seen as purposeful" (Gasiorek & Giles, 2012, p. 312), as powerful mediator between communication behavior (e.g., speech adjustments) and the outcomes of interest (Gasiorek, 2015; Giles & Gasiorek, 2013). The intent of the speaker may have particular interest for health communication scholars studying patient responses to provider's (non)accommodating behaviors. If the patient perceives their provider's as controlling or stern in their communication, but the provider's intent is perceived to be positively motivated (e.g., attempting to give clear or succinct directions), it is possible that their evaluation of the provider's communication will be more competent compared to patients who perceive a negatively motivated intent. Studies looking at patient-provider interaction sequences ought to look at patient and provider responses to nonaccommodating communication adjustments (e.g., Gasiorek, 2013). Gasiorek and Giles (2015) found that inferring more positive motives for communication adjustments (i.e., viewing adjustments as well-intentioned) was associated with greater perceived accommodation. Specifically, negative emotions such as frustration and anger may mediate the relationship between communication nonaccommodation and impression formation (Gasiorek & Giles, 2015). Nonaccommodation may incite negative emotions directly, which would then be associated with negative evaluations of a nonaccommodative communicator or the whole target group (Zhang et al., 2018). Even though the current study investigated intergroup anxiety, a vital emotional and psychological construct in the interpersonal and intergroup communication (Stephan, 2014; Liu & Zhang, 2020), additional emotions such as anger and fear can be studied using previously established frameworks such as reactance theory.

Reactance Theory. Reactance theory (Brehm & Cohen, 1962) posited that if individuals feel a freely enacted behavior is threatened with elimination or restriction, a motivated psychological state of reactance will be induced, then directed toward the return of the behavior perceived to be threatened (Miron & Brehm, 2006). Reactance theory is considered one of the first approaches to describe the cognitive process of resistance to social influence. In later iterations of reactance theory, it was further posited that individuals respond according to if the freedom is threatened (but still possible to return to) versus when the freedom is unlikely or implausible to return to (temporarily or semipermanent) (Brehm et al., 1983).

Presently, there is a resurgence of interest among researchers regarding emotional states and reactance processes within the field of health communication (Xu & Wu, 2020). Recent literature has looked at individual responses to messages to decrease red meat consumption (Bertolotti et al., 2020), and psychological reactance for messages encouraging healthy dental care behaviors (Armstrong et al., 2021), and anti-vaping public service announcements (Clayton et al., 2020). Negative emotional responses to nonaccommodative adjustments could potentially be explored by reactance theorists, by looking at negative responses when a person's valued or habitual activity is threatened by the message content (e.g., consuming several sugary sodas each day). Future research should compare emotional responses (e.g., anger, fear) to a target provider who has complete and total control of the conversation with a less controlling and more flexible health provider (i.e., fully accommodating).

Expectancy Violations Theory. This dissertation posited that patient-provider communication is an interpersonal situation that happens at an intergroup level. I adopted both an interpersonal and an approach from the intergroup literature to study communication

adjustments by a hypothetical health care provider advising a patient about preventive measures to take for reducing the risk of developing type-2 diabetes. It follows that theory development can be advanced by coalescing interpersonal and intergroup theoretical frameworks to study this situation. One possible arena to explore together with CAT is expectancy violations theory (EVT) (Burgoon, 2016). Principally, EVT considers interlocutors 'perceptual anticipations, meanings attributed to communication acts, and implications resulting from communicators' nonverbal signals (Burgoon et al., 1989). The expectations an individual brings to an upcoming interaction comprise of perceptions about the other person's characteristics and the social context (Dragojevic et al., 2019). CAT contributes to research examining expectancy violations (misguided or faulty adjustments) in patient-provider encounters by accentuating synchronous interpersonal and intergroup factors in research exploring interlocutor motivations to accommodate (or not) and the consequences of communication violations (Lin, 2019).

In patient-provider interactions, expectations about an upcoming meeting can be influenced by intergroup factors such as stereotypes. One such example concerns the influence of stereotypes on perceptions of provider communication.

Stereotyping and Patient-Provider Communication. Hall et al. (2015) found that identical patient-centered verbal messages had a stronger positive effect on patient evaluations and satisfaction of male providers 'communication compared to female providers ' communication, suggesting that evaluations of patient-centered messages between male versus female providers happened due to the intersection between gender stereotypes and perceptions of the health provider's communication behavior. Race and ethnicity can have a considerable

impact on patient centered provider communication, too (Singh et al., 2018). he literature on stereotyping and health care quality can be considered in future research.

Stereotypes are a function of a preceding cognitive schematic demarcating the social world into ingroups and outgroups (Fiske, 2000). The relationship between stereotypes and communication has been studied in a variety of research contexts in the intergroup literature (Liu & Zhang, 2020). Providers may adjust and modify communicative behaviors during meetings with patients or in response to contextual features cues or a pre-existing bias. African American patients are less likely to trust their provider and less likely to share in the health decisions during an appointment when compared to trust and shared decision making experienced by White patients (Peek et al., 2013). Singh et al. (2018) reported Hispanics and Asians compared to Whites were less likely to have higher patient- centered provider communication. NCDs and genetic counseling might be appropriate for health communication researchers to study. Although there is a consensus from policy-makers and healthcare leaders that healthcare professionals play a key role in eliminating healthcare disparities and that it is imperative to increase their awareness of and engagement with this issue (Burgess, 2019). Therefore, it is troubling to see that less than 40% of physicians recognize the presence of racial and ethnic health disparities among patients (Sequist et al., 2010).

Public interest in the field known today as genetics has an emphatically racist public and social history. These histories play a role in the establishment of trust and openness in patient-provider communication. Yet, working with communities of color to co-construct culturally competent patient provider communication standards may offer a way to address the lack of trust and persistent racial inequities when it comes to health care outcomes. Brewer et al.

(2020) undertook this with the Māori community in New Zealand, putting out recommendations to make treatment more patient-centered. Intergroup scholars already have a deep commitment to stereotyping in health care, particularly when it comes to age-based stereotypes. Fadiman's (1997; 2012) ethnographic study among Hmong refugee families living in California during the 1970s and 1980s is a painful and visceral example the intersection between inequity, health care, and communication practice (and the consequences at stake in such contexts).

Attuning Strategies. An intriguing theoretical contribution of the current research concerns the effect of accommodatively attuned discourse management on the outcome variables. Accommodating on discourse management had a negative effect on intergroup anxiety and a positive effect on communication competence and adherence intent, regardless of the accommodative or nonaccommodative interpretability adjustments. Discourse management is described as the broadest attuning strategy whereby interlocutors assess, judge, and respond to the conversational needs of their communication partners (Farzadnia & Giles, 2015). A significant positive indirect effect was revealed between accommodatively attuned discourse management and adherence intent through the serial mediating effect of intergroup anxiety and communication competence.

This suggests that when providers accommodate their communication on discourse management, the degree of intergroup anxiety is reduced, which increases the patient's adherence intention. This finding supports the potential for developing intergroup approaches to patient-provider communication. Optimally attuned (accommodative) discourse management seemed to significantly impact participant intentions to adhere to the provider's sugar reduction recommendations, particularly through feelings of intergroup anxiety. An important theoretical

contribution from the current study regards the discovery that accommodative discourse management improves perceptions of health providers.

Future research should consider operationalizing other attuning strategies in addition to the two strategies covered in this dissertation. More specifically, interpersonal control is an attuning strategy that describes episodes in which speakers may use utterances to assert authority, dominance, and control (Gallois et al., 2005). Researchers might apply the language strategies depicted in this experiment to evaluate interpersonal control in future investigations. "You must change your diet...", for example, is an acute command by the provider that could be better measured as an instance of interpersonal control. It seems that in interactions where feelings of tension and anxiety seem to be overwhelming, as in palliative care (Janssen & MacLeod, 2010) neonatal care (Jones et al., 2018), and mental health care (Imai et al., 2016) affects perceptions of health providers and, by extension, health care outcomes (Farzadnia & Giles, 2015).

Practical Implications

Diabetes is a chronic disease that is determined by its onset and circumstances: Type-1 diabetes (i.e., namely insulin-dependent, or childhood-onset diabetes); type-2 diabetes (i.e., caused by insulin deficiency or adult-onset diabetes); gestational diabetes (i.e., occurs during pregnancy but typically reverses post-pregnancy). This study focused on type-2 diabetes in terms of the topic of conversation and health information. Type-2 diabetes is characterized by insulin resistance or anomalies in insulin-sensitive tissue (i.e., a decrease in skeletal muscle and hepatic insulin sensitivity) (Edgren et al., 2021). The risk factors for type-2 diabetes, which make up 90-95 % of U.S. cases (American Diabetes Association, 2021), include age, ethnicity, dietary

patterns or habits, genetics, and social environment. Food deserts are a persistent example of the intersection of race, social inequity, and health concerns. Food deserts are communities in the U.S. with insufficient or no access to healthy and affordable food (United States Department of Agriculture [USDA], 2012)[2]. This problem overwhelmingly impacts communities of color and ethnic minorities. For example, research has demonstrated that African American families have access to fewer supermarkets (but more convenience stores) in close proximity to their residence than White families (Larson et al., 2009). Zenk et al. (2011) interviewed African American women about these barriers. A lack of supermarkets, incompetent employee behaviors at food stores (e.g., employees following the person around the store), and race and age differences were barriers to accessing healthier dietary choices. When we consider the implications of these obstacles to healthy food for a family and a community, in addition to complex aspects of the actual health appointment, the argument that an individual is exclusively responsible for their health status not only contradicts decades of research, but it also brings up questions of value, identity, and the ways we communicate both. This dissertation cannot answer such questions in a way that respects the scope and depth of the matter. Nonetheless, this research could lead to developing communication interventions in health care settings that improve equity and access to necessary nutrition. Other future work should highlight the role of family members and caregivers in the management of noncommunicable diseases such as type-2 diabetes.

The CDC (2020) estimated type-2 diabetes was the seventh leading cause of death in U.S. adults and the leading cause of vision impairment in U.S. adults between 18 and 64. The most

[2] To explore the data and visual the problem of food deserts, the suggestion I received was to use this tool: https://www.ers.usda.gov/data-products/food-environment-atlas/go-to-the-atlas/

recent data available also showed type-2 diabetes was the primary reason for approximately 130 thousand lower extremity amputations (e.g., when a foot loses functional circulation) (CDC, 2020). When I began this project, I narrowly understood how calamitous type-2 diabetes was and admit to learning the gradually destructive nature of diabetes on one's everyday life and the challenges presented to public health efforts to address the matter as this project came about. Diabetes was formerly considered a disease that affected members of upper socioeconomic status and industrialization, but it crosses several demographic boundaries, including but not limited to socioeconomic status (Taubes, 2016). As Moran-Thomas wrote in her 2019 account of the diabetes epidemic in Belize, nearly everyone she encountered "had somehow witnessed the long list of strange ravages caused by diabetes: blindness, renal failure, bone disease, deadened nerves and numb limbs, pain shooting through limbs or stinging like needles, hunger that did not stop when you ate, thirst that lasted no matter how much water you drank" (p. 6). In most of her conversations across Belize, however, the people she met referred to diabetes as sugar.

Limitations

Given the contributions of the current study, the current study coded participants ' ethnicity as White or nonwhite. Over 60 % of the sample identified as White (62.5 %; $N = 228$), while 37.1 % of the sample was non-white ($N = 134$). This should be addressed in future communication research designed to study the implications of communication on type-2 diabetes prevention as ethnic and racial minority communities have higher rates of type-2 diabetes (CDC, 2020). Another limitation of this research is that I did not measure for self-efficacy as a predictor or covariate influencing the effect of adjustment style on the predicted outcome variables. It is important to consider the implications for health care outcomes if a patient feels unprepared to

describe their health status. Perceptions can be informed by implicit biases and stereotyping, which restricts or eliminates meeting patient-centered objectives. For example, the intergroup components of health communication have underpinned the issue of misinformation about the COVID-19 (SARS CoV-2) pandemic (see Krishna & Thompson, 2021). In the U.S., misinformation about the COVID-19 pandemic paralleled the increase of derogatory remarks, violent threats, and hate crimes against Asian Americans in 2020 and 2021 (Croucher et al., 2021). Harrington (2020) has recently called for more research into the role of cognitive bias and emotion in health communication, asking researchers "to adequately account for the influence of cognitive biases and heuristics in audiences resistant to scientific, evidence-based information" (p. 1715).

Including additional variables

Health providers represent a professional and occupational identity (not to be confused with social, cultural, or individual identities). As an authoritative role with specialized knowledge and expertise. Patients' concerns about the uncertainties of treatment are associated with how they understand their illness and symptoms and their previous health outcomes and individual coping strategies (Sun et al., 2020). Communication, then, becomes what Mokros (1993) described as “not merely an interpersonal tool but the constitutional basis for the development of concepts of health and illness” (p. 114). One of the longstanding indicators of patient knowledge is referred to as health literacy.

The Institute of Medicine (2004) defined health literacy as the ability to “obtain, process, and understand basic health information and services to make appropriate health decisions” (p. 32). Evidence has shown health literacy is associated with instances of condescending and/or prejudiced communication from a health provider, which reduce proximal evaluations of

credibility and satisfaction, and impact distal outcomes such as adherence to treatment (Duggan & Thompson, 2015). The communication literature suggests language barriers can further restrict information understanding for patients discussing individual health decisions. Suurmond et al. (2015) found that language barriers hindered perceptions of linguistic minorities' seeking information about home care services and their willingness to engage in home care afterward. During the COVID19 pandemic, which is ongoing at the time of this writing, health literacy is an actively developing research topic with high interest in developing strategies to increase health literacy within and across populations (Sentell et al., 2020). Various national and international initiatives have underlined the critical importance of promoting health literacy, and hence patient understanding of symptoms and health issues, as a means of improving health outcomes by reducing patient uncertainty and increasing patients' sense of efficacy to prevent health problems (WHO, 2020). One of the major limitations, in my view, from this project was that I did not include any of the valid measurements already available to assess health literacy. Future work should test the model used in the project with health literacy and background knowledge as antecedents to adherence intention in the context of preventive patient-provider encounters.

Conclusion

One of the far-reaching effects of changes in clinical advancements (e.g., electrocardiograms; mRNA vaccines) is the improvement of clinical treatments. However, ensuring these treatments are efficacious requires that they are accessible to communities for use. Therefore, it is also key to explain, understand, and apply our knowledge to a broad scope of social contexts to develop robust models showing the effects of communication on health outcomes.

Providers are still viewed as the most credible source of health information (Baker & Watson, 2020) and possess what French and Raven (1959) labeled expert power (as cited in Piercy, 2020). Research on the topic of power and authority has a rich history in intergroup research and social psychology (Allport, 1954; Giles & Maass, 2016; Islam & Hewstone, 1993; Sherif, 1961). The most recent example of intergroup factors and health communication is the COVID-19 pandemic. The influence of intergroup anxiety on matters of health communication throughout the COVID-19 pandemic is evidenced by rioting, violence, are the result of a limited awareness that the threat is not mask mandates, the origin of the virus, or vaccines passports, but a dangerous virus; a virus that took my grandmother's life in 2020 after years of abusive treatment. My personal life may never be suitable for a dissertation, but I am endeavoring to establish a position that demonstrates the importance of this research topic. The intergroup tension and anxiety permeating the COVID-19 pandemic are, however, comparable to other health crises, including the Flint Water Crisis in the 2010s (Bauer et al., 2021; Day et al., 2019; Ezell et al., 2021) and the AIDS epidemic during the 1980s (Lule, 2005; Myhre & Flora, 2000; Rogers et al., 1995). Although the epidemiology, social environment, and repercussions of these crises diverge in most ways, each episode disproportionately affected the health of marginalized communities in the United States. As a response, future studies should focus on developing patient-centered models that adequately test for intergroup characteristics in patient-provider interactions.

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Appendix A: Recruitment Email

Announcement: You are invited to participate in a study about communication between new patients and health care providers. You can earn **5 points of extra credit** in your COMS class (per your instructor's approval) for taking part in the study.

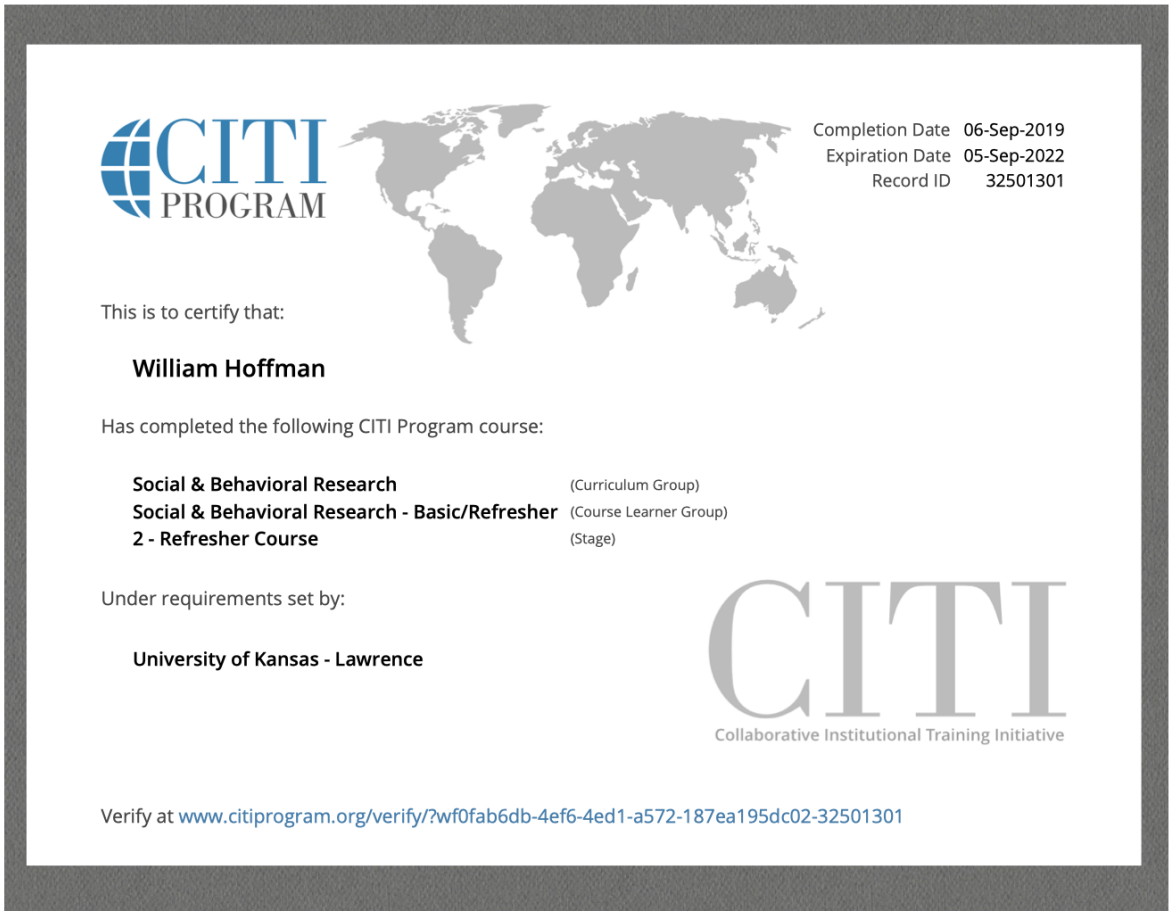
Description and Eligibility: In order to take part, you must be 18 years of age or older. Participation involves (1) reading a discussion about preventive strategies between a health care provider and a new patient, and (2) completing a survey evaluating their interaction. Upon finishing, you'll be asked to provide your name, instructor's name, and course information to receive extra credit points. Completing the study will take approximately 10 minutes.

If you are eligible and would like to participate, follow this link:
https://kusurvey.ca1.qualtrics.com/jfe/form/SV_esA0yiOXQzeRpOd.

Contact William Hoffman over email at **w465h232@KU.edu** if you have further questions.

Appendix B:

IRB Certification



CITI PROGRAM

Completion Date 06-Sep-2019
Expiration Date 05-Sep-2022
Record ID 32501301

This is to certify that:

William Hoffman

Has completed the following CITI Program course:

Social & Behavioral Research (Curriculum Group)
Social & Behavioral Research - Basic/Refresher (Course Learner Group)
2 - Refresher Course (Stage)

Under requirements set by:

University of Kansas - Lawrence

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?wf0fab6db-4ef6-4ed1-a572-187ea195dc02-32501301

Appendix C: Experimental Conditions

Background:

The health provider in this scenario is Taylor Russell, a licensed dietitian. The health provider is meeting with a new provider who admitted they rarely eat fruits and vegetables and conveyed some worry or difficulty about successfully changing current eating patterns. The health care provider is attempting to make new recommendations that improve the health and diet of the provider as well as to explain why the recommendations have been made.

Here are the health care provider's remarks:

1. FULLY ACCOMMODATING (Word Count = 89)

In your situation, it would be advisable to avoid foods containing added sugar and eat more fruits and vegetables. I'm aware of your situation. You do not eat enough fruits and vegetables, and you're concerned about changing your diet. We can develop a plan together if there is a need. Here is a brochure about eating fruits and vegetables. It's important to understand glucose is a type of sugar. Your body converts all food to energy after you eat. However, diets high in added sugar slow the process down.

2. INFORMATIVE ACCOMMODATING (Word Count = 88)

You must avoid all foods containing added sugar and eat more fruits and vegetables. Your current diet and eating habit is problematic and risky! Are you having difficultly changing your diet? Too bad, there is no choice if you want to live. You must change considering your deprived diet. Here is a brochure about eating fruits and vegetables. It's important to understand glucose is a type of sugar. Your body converts all food to energy after you eat. However, diets high in added sugar slow the process down.

3. CONVERSATIONAL ACCOMMODATING (Word Count = 88)

In your situation, it would be advisable to avoid foods containing added sugar and eat more fruits and vegetables. I'm aware of your situation. You do not eat enough fruits and vegetables, and you're concerned about changing your diet. We can develop a plan together if there is a need. Here is a brochure about glycemic load and chlorogenic acid. It's important to understand glucose is in the family of monosaccharides and disaccharides. Your blood glucose is the problem. The A1C test tells me about your blood glucose.

4. FULLY NONACCOMMODATION (Word Count = 87)

You must avoid all foods containing added sugar and eat more fruits and vegetables. Your current diet and eating habit is problematic and risky! Are you having difficultly changing your diet? Too bad, there is no choice if you want to live. You must change, considering your deprived diet. Here is a brochure about glycemic load and chlorogenic acid. It's important to understand glucose is in the family of monosaccharides and disaccharides. Your blood glucose is the problem. The A1C test tells me about your blood glucose.

APPENDIX D: MANIPULATION CHECK

Instructions: In the items below, please select the number that most accurately describes your agreement with the corresponding statement regarding the dietitian's remarks in the scenario. on a scale from 1 (strongly disagree) to 7 (strongly agree). Please answer the extent to which you agree with each of the following statements by selecting a corresponding number from 1 (Strongly Disagree) to 7 (Strongly Agree).

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
The health care provider avoided putting the patient in a negative light.	1	2	3	4	5	6	7
The health care provider was considerate of the patient' views and ideas	1	2	3	4	5	6	7
The health care provider was affirming toward the patient.	1	2	3	4	5	6	7
The health care provider used terminology that non-health professionals could understand.	1	2	3	4	5	6	7
The health care provider was clear and unambiguous.	1	2	3	4	5	6	7
The health provider did not use medial jargon.	1	2	3	4	5	6	7

Items 1,2, and 3: Discourse Management , Items 4, 5, and 6: Interpretability

APPENDIX E

COMMUNICATION COMPETENCE

Instructions: Please select the number below that best represents your agreement with the following statements regarding the health care provider's communication on a scale from 1 (strongly disagree) to 7 (strongly agree).

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
The things the health care provider communicated were appropriate for a typical medical consultation	1	2	3	4	5	6	7
The way the health care provider communicated things was suitable for the situation	1	2	3	4	5	6	7
The health care provider's communication was proper for this discussion.	1	2	3	4	5	6	7
The health care provider's statement to the provider was all in good taste.	1	2	3	4	5	6	7
The health care provider's communication was effective in explaining the health information.	1	2	3	4	5	6	7
The health care provider's communication was useful in terms of explaining diet and health	1	2	3	4	5	6	7
The health care provider's communication was useful for the provider.	1	2	3	4	5	6	7
The health care provider's communication was rewarding for the provider.	1	2	3	4	5	6	7

Items 1-4 = Appropriateness, Items 5-8 = Effectiveness

APPENDIX F

INTERGROUP ANXIETY

Please indicate the number that best represents how you would have felt in anticipating communication with the health provider if you were the patient in this health care interaction with Taylor Russell, the dietitian provider. Indicate how you would have felt the emotion on a scale from 1 (not at all) to 7 (extremely).

Emotion	Not at all			Moderately			Extremely
Frustrated	1	2	3	4	5	6	7
Disappointed	1	2	3	4	5	6	7
Embarrassed	1	2	3	4	5	6	7
Confused	1	2	3	4	5	6	7
Annoyed	1	2	3	4	5	6	7

APPENDIX G

ADHERENCE INTENT

These statements are designed to gauge your perception regarding the extent to which the patient would be inclined to follow the health care provider's recommendations. Please indicate your level of agreement on a scale from 1 (strongly disagree) to 7 (strongly agree).

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
The patient would probably follow what this health care provider advised.	1	2	3	4	5	6	7
The patient might stop following the health care provider's recommendations.	1	2	3	4	5	6	7
The patient might sometimes forget to follow the provider's health recommendations.	1	2	3	4	5	6	7
The patient would not think it is a problem to cut out added sugar	1	2	3	4	5	6	7
The patient was probably confident in their ability to eat more fruits and vegetables.	1	2	3	4	5	6	7

APPENDIX H:
DEMOGRAPHIC MEASURES

Age: _____years

Sex/Gender:

___ Female

___ Male

___ Non-Binary

Race/Ethnicity:

___ Asian American or Pacific Islander

___ Native North American

___ African American or Black

___ European American or White

___ Latino/a/Latinx or Hispanic American

___ More than one racial/ethnic identity

___ I prefer not to answer

Highest level of formal education:

___ High school graduate or GED

___ Vocational or technical school

___ Some college

___ College graduate

___ Post-graduate (Master's; Ph.D.)

Type-II Diabetes Background Knowledge

This section is inquiring about your knowledge of type-II diabetes. There are no "wrong" or "disqualifying" answers. Please indicate your agreement on these statements by selecting a number from 1 (strongly disagree) to 7 (strongly agree).

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I am knowledgeable of factors causing type-II diabetes.	1	2	3	4	5	6	7
I am knowledgeable of symptoms of and complications due to type-II diabetes	1	2	3	4	5	6	7
I am knowledgeable of various type-II diabetes treatments.	1	2	3	4	5	6	7
I am paying attention to this survey, and thus will answer "somewhat agree" to this item.	1	2	3	4	5	6	7

Appendix I

IRB Approval & New Study Checklist

THE UNIVERSITY OF KANSAS Research

Date: June 19, 2020
TO: William Hoffman, (w465h232@ku.edu)
FROM: Alyssa Haase, IRB Administrator (785-864-7385, irb@ku.edu)
RE: **Approval of Initial Study**

Moving forward with in-person research activities prior to receiving written confirmation from HRPP indicating it is safe to move forward will result in the project being paused and an investigation being launched.

The IRB reviewed the submission referenced below on 6/19/2020. The IRB approved the protocol, effective 6/19/2020.

IRB Action: APPROVED	**Effective date: 6/19/2020**	**Expiration Date : 6/18/2025**
STUDY DETAILS		
Investigator:	William Hoffman	
IRB ID:	STUDY00145851	
Title of Study:	Improving Prevention with Communication Accommodation Strategies: An Experimental Study Examining Patient-Provider Communication about Dietary Changes to Reduce the Risk of Type-2 Diabetes	
Funding ID:	None	
REVIEW INFORMATION		
Review Type:	Initial Study	
Review Date:	6/19/2020	
Documents Reviewed:	• Consent form (information), • Content Form Clarification Version1, • Debriefing Statement, • HSCL_Initial_Submission_Form(clarification1).pdf, • Human Subjects Initial Study Form, • Interaction Scenarios, • Major Measures 1, • Online Recruitment Announcement	
Exemption Determination:	• (2)(ii) Tests, surveys, interviews, or observation (low risk)	
Additional Information:	• Deception	

KU-Lawrence Human Research Protection Program New IRB Submission Checklist

New Study Checklist

- ☑ Complete Human Research Protocol
- ☑ Create/gather needed documents (check only that apply for your study - not all are required)
  - Consent Forms
  - Assent Forms (minors)
  - Recruitment Materials
  - Interview questions/ survey questions/ focus group questions
  - Tests/assessments
  - Debriefing statement (deception or omission studies)
  - External site approval letter
  - KU Environmental Health & Safety (EHS) approval
  - HIPAA Documents
  - Award/contract materials
  - Other relevant forms
- ☑ Students Only: Receive approval of documents from faculty supervisor
- ☑ Complete human research training in CITI
  - Note: need to complete once every 3 years.
  - Faculty supervisors need to have current human research training for student projects (all study team members need to have training).
  - Contact irb@ku.edu with any external study team members to receive further assistance.
- ☑ Determine if your study is a Single-Site or Multi-Site Study
- ☑ Create a New Study in eCompliance
  - Upload all relevant documents.
  - Add study team members (including faculty supervisor).
  - Submit using the "Submit" button on Study home page.
  - Students only: have faculty supervisor complete ancillary review.