

U.S. PATIENTS' EVALUATION OF INTERNATIONAL MEDICAL GRADUATE  
PHYSICIANS' VERBAL AND NONVERBAL STRATEGIES TO MANAGE THEIR LACK  
OF COMPREHENSION: A MULTIPLE GOALS PERSPECTIVE

BY

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DISSERTATION

Submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy in Communication  
in the Graduate College of the  
University of Illinois Urbana-Champaign, 2022

Urbana, Illinois

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## ABSTRACT

Previous studies on communication between international medical graduates (IMGs) and U.S. patients have focused on describing IMGs' communication challenges and the effect of IMGs' identity features on patient perceptions and assessment. Guided by the multiple goals perspective, the current dissertation aimed to extend the field of IMG-patient communication by investigating how U.S. patients evaluate IMGs' verbal and nonverbal strategies to deal with their lack of comprehension of U.S. patients. White men ( $N = 569$ ) were recruited from an online research panel to participate in a 3 (verbal strategies: be blunt, feign comprehension, provide rationale)  $\times$  2 (nonverbal strategies: high affiliative nonverbals, low affiliative nonverbals)  $\times$  2 (verbal message variations: "out of sorts", "frog in the throat") full factorial online experiment. Participants were randomly assigned to one of the 12 conditions to watch a video recording of an IMG-patient interactional episode and were asked to imagine that they were the patient in the video. Following the message exposure, participants were asked to report their inferred goals, assessment of IMGs' competence, warmth, and satisfaction with the interaction.

Findings suggested that compared to the verbal strategies of being blunt and providing rationale, IMGs' feigning comprehension verbal strategy, when became noticeable to patients, elicited less patient inference of other-oriented goals (i.e., understanding patient language use) and relationship-focused goals (i.e., establishing a trusting relationship), which were in turn positively associated with patient assessment and satisfaction with the interaction. Additionally, compared to the other two verbal strategies, IMGs' feigning comprehension elicited more patient inference of self-oriented goals (i.e., hiding linguistic incompetence), which was in turn negatively associated with patient evaluation. IMGs' high affiliative nonverbal behaviors elicited more patient inference of relationship-focused goals. Moreover, engaging in noticeable feigning

comprehension and low nonverbal affiliative behaviors was particularly detrimental to the patient inference of other-oriented and relationship-focused goals, which were associated with patient evaluation of IMGs and their satisfaction with the visit. Verbal and nonverbal communication channels can potentially complement each other in terms of goal accomplishment, affecting patient goal inferences and evaluation. The findings yield theoretical implications for IMG-patient communication, communication between non-native speakers and native speakers of English, the multiple goals perspective, and discrepant verbal-nonverbal profile theory. Further, the findings offer practical implications for IMGs to improve their communication with U.S. patients both verbally and nonverbally.

## ACKNOWLEDGMENTS

I am deeply grateful to all the people who have helped, motivated, and supported me during this process. First and foremost, I am thankful for my advisor Dr. Lisa Guntzviller, who has provided me with unending guidance and support. During my Ph.D. program, Lisa taught me how to ask theoretically interesting research questions, guided me through hands-on research experience, and helped me gain access to research participants and funding resources. I also thank Lisa for her detailed feedback on the video stimuli, dissertation drafts, and job market materials. Her enthusiasm for research has inspired me tremendously.

I am fortunate to have four wonderful committee members, Drs. John Caughlin, Charee Thompson, Cabral Bigman, and Elisabeth Bigsby. Thank you to John for sharing your knowledge and insight on the multiple goals perspective, Charee for pushing me to think about the study implications, Cabral for your expertise on communication and health equity, and Betsy for your suggestions on the study design and statistical analyses. Thank you to my master's advisor Dr. Elaine Hsieh and my undergraduate advisor Ms. Jianping He for introducing me to the field of health communication and encouraging me to pursue my career as a communication scholar. I also want to thank Matthew and Vincent for their performance in my video stimuli and my mentee Dana for her assistance with coding open-ended responses.

My gratitude must extend to my colleagues, friends, and family members. Thanks to my friends in the R.A.P.P.O.R.T lab and the post-coursework social support group for their feedback on my dissertation and job talk. Thanks to all my friends in the virtual writing group, for helping me stay focused throughout this process. I owe a lot to my parents, who have supported every decision I have made to pursue my career. Finally, to my partner Lilang, thank you for cheering me up when I was upset and bringing joy to my life.

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## CHAPTER 1: INTRODUCTION

Intercultural communication in health care has become an increasingly popular research topic. Immigrants make up nearly 14% of the U.S. population, and approximately 24% of the U.S. population is non-White (United States Census Bureau, 2020). Given the diversity in the population, it is not uncommon for patients residing in the U.S. to encounter physicians who are culturally different from them. An extensive body of scholarship has examined U.S. physicians' communication with immigrant and minority patients (e.g., Butow et al., 2013; Young & Klinge, 1996). For instance, studies have investigated how physicians and patients communicate differently depending on patients' ethnic and national identities and found that physicians engage in less affective communication with minority patients (for a review, see Schouten & Meeuwesen, 2006). Yet, another form of intercultural communication in health care – communication between international medical graduate physicians (IMGs)<sup>1</sup> and U.S. patients—has been less studied.

Communication between IMGs and U.S. patients is worth studying, given its prevalence in the U.S. and the potential communication issues in this type of intercultural health communication. The term “IMG” refers to physicians who obtain their primary medical education in countries other than their country of practice (Murphy, 2018). In the U.S., approximately a quarter of physicians were born or received their primary education in non-North American countries (Educational Commission for Foreign Medical Graduates, 2019a).

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<sup>1</sup> Technically, a physician's country of training rather than citizenship determines whether they are IMGs or USMGs (Hoekje, 2011). Therefore, physicians who are U.S. citizens but receive their basic medical training in non-North American countries are considered as USIMGs, whereas those who are non-U.S. citizens but obtain primary medical degrees in the U.S. and Canada are not considered as IMGs. Non-U.S. citizens who receive medical training outside the U.S. and Canada are known as non-U.S. IMGs (Boulet et al., 2006). Despite the technical definition, a large number of studies have used IMGs to represent non-U.S. IMGs (Hoekje, 2011). For the sake of simplicity and consistency with previous studies, the dissertation uses IMGs to represent non-U.S. IMGs or foreign-born doctors.

Most communication studies on IMGs have focused on describing IMGs' subjective experience of communication challenges when interacting with U.S. patients. For example, studies have shown that IMGs find it difficult to engage in small talk to establish rapport with patients, negotiate power in medical encounters, and discuss culturally unfamiliar topics (for reviews, see Michalski et al., 2017; Pilotto et al., 2007). One of the communication challenges that has been most frequently reported is IMGs' lack of understanding of the local use of language, such as patients' use of colloquialism, idioms, slang, and sarcasm, and casual conversations that require the knowledge of the U.S. and the local culture to understand (Chen et al., 2010; Jain & Krieger, 2011; Osta et al., 2017). However, few studies have reported how IMGs communicatively deal with their lack of understanding (for an exception, see Jain & Krieger, 2011) and how U.S. patients evaluate IMGs' communication strategies to deal with this challenge.

How IMGs effectively and appropriately manage their lack of understanding of patients' use of colloquialisms, slang, idioms, and casual conversations is important given its practical implications for IMG-patient interactions. IMGs are trained to speak the *voice of medicine*, viewing health and illnesses through clinical evidence (e.g., medical tests) and reasoning (Mishler, 1984). As IMGs need to pass a series of exams and go through the licensure process, in which their clinical, language, and communication skills are assessed (Educational Commission for Foreign Medical Graduates, 2019b), they are often proficient in academic and medical English (Jain & Krieger, 2011). In contrast, patients speak the *voice of lifeworld*, viewing health or illnesses through the lens of their contextualized and subjective experience (Mishler, 1984). Patients, regardless of their health literacy level, are likely to use idioms, slang, and metaphors to describe their symptoms and how their illnesses impact their everyday lives, as these linguistic choices are closely tied to their subjective experiences (Risør, 2009). For example, patients who

have medically unexplained symptoms often use different types of idioms (e.g., symptomatic, personal, social idioms) to capture their embodied experience (Risør, 2009). Despite their proficiency in academic English, IMGs who grew up and were trained overseas are unfamiliar with the meaning of the local use of language. Consequently, most IMGs report that the greatest challenge they encounter when communicating with patients is the lack of understanding of patients' language use and small talk (for a review, see Michalski et al., 2017). Not being able to deal with the lack of understanding of patients may result in ineffective communication and misunderstanding, thus leading to negative consequences for both IMGs and patients, such as physician burnout (Robbins et al., 2019) and patient nonadherence (Street, 2013).

The dissertation adopts a multiple goals perspective (Caughlin, 2010) to understand how IMGs deal with their lack of understanding of U.S. patients' language use and culturally relevant talk and how patients evaluate these communication strategies. First, the current investigation advances the IMG literature by applying a communication theory. The topic of IMG-patient communication has gained increasing interest from multiple research disciplines (e.g., communication, medical education). However, this body of literature has been mainly exploratory and underutilized a theoretical-guided perspective to understand, explain, and predict the communication process (for exceptions, see Jain, 2014; Jain & Krieger, 2011). The multiple goals perspective (Caughlin, 2010) conceptualizes communication as a goal-oriented process, in which communicators pursue multiple interaction goals strategically and simultaneously. This perspective assumes that communicators' own interaction goals may conflict with each other and shape their communicative behaviors; conversational partners' interpretations of these communicative behaviors can vary depending on their perceived interaction goals (i.e., goal inference). When IMGs are not able to fully understand U.S. patients' language use, they may



not want to be perceived as lacking adequate linguistic skills. To mitigate the threat to their own face (i.e., an image of self in social interactions; Goffman, 1955), IMGs may engage in different verbal and nonverbal strategies. The communicative strategies IMGs adopt to deal with their lack of comprehension likely lead to different patients' perceptions of IMGs' goals (i.e., inferred goals), which in turn impact patients' assessment of IMGs and the whole interaction. Given the explanatory power of the multiple goals perspective in the context of IMG-patient interactions, it is well-situated to this research context by offering theoretical guidance on what communication strategies IMGs may adopt to manage their lack of comprehension and how these strategies are perceived by patients.

Second, the current investigation extends the multiple goals perspective to account for the nonverbal aspect of communication and how the combination of verbal and nonverbal behaviors affects patient evaluation. The multiple goals perspective has concentrated on how communicators' verbal messages affect conversational partners' evaluation (e.g., Caughlin et al., 2008; Donovan-Kicken et al., 2013; Scott & Caughlin, 2014). Even though communicators draw heavily on nonverbal behaviors to produce and interpret meanings (Burgoon et al., 2016), few studies have examined how communicators' nonverbal behaviors affect conversational partners' assessment and how verbal and nonverbal behaviors work together to influence assessment (for exceptions, see Grebelsky-Lichtman, 2021; Trees, 2005; Trees & Manusov, 1998). The multiple goals perspective posits that communicators can use different communication channels (e.g., verbal and nonverbal channels) to accomplish multiple goals separately (O'Keefe & Delia, 1982). However, little is known about how people's communication behaviors are evaluated when using multiple communication channels to accomplish their multiple goals. Trees and Manusove (1998) claimed that the interaction effect of verbal and nonverbal behaviors on others'

perceptions is far more complex than the additive effect and called for more research to understand the complexity. Furthermore, as IMGs encounter language barriers when communicating with patients, they sometimes rely on nonverbal behaviors to compensate for what cannot be accomplished linguistically (Jain & Krieger, 2011). Given the potential theoretical extension of the multiple goals perspective and the practical implications for IMGs, understanding how IMGs' verbal and nonverbal strategies to deal with their lack of comprehension affect patient evaluation warrants investigation.

With the two overarching goals proposed, Chapter 2 reviews relevant literature on IMG-patient communication. In addition, Chapter 2 draws on the multiple goals perspective, the applied linguistic literature, and the nonverbal communication literature to put forth three potential verbal communication strategies and two nonverbal communication strategies that IMGs may adopt to deal with their lack of comprehension. Furthermore, Chapter 2 introduces hypotheses and research questions regarding how these strategies will be assessed by patients. Chapter 3 proposes a 3 (verbal strategies: being blunt, feigning comprehension, providing rationale)  $\times$  2 (nonverbal strategies: high affiliative behaviors, low affiliative behaviors)  $\times$  2 (verbal message variations: out of sorts, frog in the throat) online experiment to address the hypotheses and research questions and describes the participants, procedure, and measures. Chapter 4 presents the analytical procedure and results, and Chapter 5 discusses the theoretical and practical implications of the dissertation and its limitations and future directions.

## CHAPTER 2: LITERATURE REVIEW

This chapter reviews previous studies on international medical graduates (IMGs) and patient evaluation, introduces the theoretical framework for the current study, and explains the rationale behind the hypotheses and research questions. First, the chapter begins with defining and introducing IMGs in the United States and conceptualizing IMG-patient interactions as interpersonal and intercultural communication. Second, the chapter reviews and critiques previous studies on patient evaluation of physicians to discuss the importance of studying patient evaluation of IMGs' communication strategies to deal with their lack of comprehension. Third, the chapter introduces the multiple goals perspective (Caughlin, 2010) as a theoretical framework for the current investigation and reviews its assumptions. Fourth, this chapter proposes three potential interaction goals that IMGs may pursue when interacting with patients and three corresponding verbal strategies IMGs are likely to engage in to accomplish these goals. Further, this section draws on the multiple goals framework to deduce hypotheses and put forth research questions regarding how patients will evaluate these verbal strategies. Finally, the chapter highlights the importance of studying IMGs' nonverbal communication and proposes hypotheses and research questions about the main and interaction effects of IMGs' verbal and nonverbal strategies on patient assessment.

### **IMGs in the United States**

IMGs, physicians who obtain their primary medical degrees in countries other than the U.S. and Canada (Educational Commission for Foreign Medical Graduates, 2019b), play a vital role in the U.S. health care system. In 2019, nearly 25% of the physician population in the U.S. was IMGs (Educational Commission for Foreign Medical Graduates, 2019a). More than half of the IMGs were born *and* trained in non-North American countries, such as India, Pakistan, and

the Philippines. (Hagopian et al., 2004; Murphy, 2020). In addition, the number of IMGs has increased steadily since 2010 (Murphy, 2020). IMGs have filled up positions that are less favored by U.S. medical graduates (USMGs) and are more likely to practice in areas where underserved populations reside; their migration has mitigated the physician shortage in many regions within the U.S. (J. Cohen, 2006; Hagopian et al., 2004).

To be eligible for practicing medicine in the U.S., IMGs must receive adequate medical education, pass a series of examinations, and undergo a complicated licensure process. After completing their primary medical education overseas, IMGs need to take the United States Medical Licensing Examination (USMLE; Educational Commission for Foreign Medical Graduates, 2019b). USMLE assesses physicians' medical knowledge and ability to apply knowledge and skills to medical encounters (United States Medical Licensing Examination, 2016). Specifically, USMLE STEP 1 evaluates IMGs' understanding of basic medical and scientific concepts; in USLME STEP 2, IMGs are asked to interact with standardized patients (i.e., people who are trained to perform the role of patients), in which IMGs' overall medical competence, communication skills, and oral English proficiency are evaluated (United States Medical Licensing Examination, 2016; van Zanten et al., 2007). Upon passing USMLE, IMGs can apply for graduate medical education (GME) in the U.S. (e.g., residency programs). They must complete the required GME to receive the medical licenses (Educational Commission for Foreign Medical Graduates, 2019b).

Obtaining medical degrees and licenses is only one stop in IMGs' cultural adventure. Like other sojourners and immigrants who leave their homeland, IMGs may feel lonely and socially isolated (Dahm et al., 2015). Furthermore, IMGs need to manage dual learning curves because they are supposed to learn how medicine and the healthcare system work in the U.S. and

the U.S. culture (Chen et al., 2010). IMGs experience challenges communicating with colleagues and supervisors (Skjeggstad et al., 2017). They sometimes face explicit and implicit forms of bias, marginalization, and workplace discrimination (Chen et al., 2010).

In summary, IMGs who were born and trained overseas make significant contributions to the U.S. healthcare system. However, they encounter challenges and experience struggles from various sources, including those from institutions, workplaces, and everyday lives. A form of challenge that has been documented frequently in the IMG literature is IMGs' communication with U.S. patients. Communication between physicians and patients can influence patients' immediate evaluation of medical encounters, affecting patients' physical and emotional outcomes (Street et al., 2009; Street, 2013). The first step in investigating how IMGs' communication influences patients' outcomes is to understand the nature of IMG-patient communication. The following section conceptualizes communication between IMGs and U.S. patients as a complex and multidimensional process.

## **Conceptualizing Communication between IMGs and U.S. Patients**

### ***A Multidimensional Process***

Communication between IMGs and U.S. patients is a complex process. This process involves multiple facets and dimensions. In this dissertation, the IMG-patient interaction is conceptualized as both interpersonal and intercultural communication.

IMG-patient interactions or episodes of these interactions can be viewed as an interpersonal communication process. In interpersonal communication, interactants treat each other as idiosyncratic individuals and communicate to establish connections and influence each other (Solomon & Theiss, 2013). In medical encounters, communicators' salient identities sway between personal and professional identities (Dragojevic & Giles, 2014). The personal identities

of physicians and patients may be activated and become salient on many occasions, such as when the two parties have established a personal bond or discuss topics of common interests (Watson & Gallois, 1999). Therefore, in some circumstances or moments during medical encounters, IMGs and patients may view each other as unique individuals rather than members of their health-related social groups (Jain & Krieger, 2011).

Apart from the interpersonal communication dimension, communication between IMGs and patients is primarily intercultural. Based on the cognitive definition of culture (Chiu & Hong, 2006; Y. Y. Hong et al., 2000), I define culture as the *knowledge shared by members of a group, interacting with individual differences and contexts to give rise to shared meanings, direct behaviors, and shape interpretations*. This definition assumes that members belonging to a social group (e.g., ethnicity, gender, profession) acquire a portion of the cultural knowledge, including beliefs, values, norms, and behavioral scripts (Chiu & Hong, 2006; Kashima, 2000). The set of loosely organized knowledge engenders shared meanings manifested through material artifacts, social institutions, practices, and communication (Chiu & Hong, 2006). This definition assumes that culture is shared by members of a group (Triandis, 2007) while also acknowledging individual differences (e.g., personality) and the influence of specific contexts (Brett & Crotty, 2008; Y. Y. Hong et al., 2000). Belonging to a culture means individuals in a group share the knowledge to a certain degree and understand the rules to communicate and make inferences of communication (Duranti, 1997).

One layer of culture in IMG-patient communication is the *culture of medicine*. Starting from medical school, physicians are trained to embrace the *voice of medicine* (Mishler, 1984). Through medical socialization, physicians acquire a set of knowledge and emphasize medical evidence and their expertise (Apker & Eggly, 2004). Physicians form their professional identity

as they are socialized into the culture of medicine (i.e., the shared knowledge and understanding of medicine and health care; Harter & Krone, 2001). On the contrary, patients embrace the *voice of lifeworld*. As physicians embrace the voice of medicine and patients speak the voice of lifeworld (Mishler, 1984), their health-related group identities (i.e., physicians, patients) become salient in medical encounters (Baker et al., 2017; Scholl et al., 2011; Watson & Gallois, 1998). Consequently, the norms and expectations assigned to the group identities will govern physicians' and patients' communicative behaviors (Watson & Gallois, 1998, 1999). For example, physicians may use medical jargon to highlight the saliency of their professional identity and their difference from patients (Baker et al., 2017).

When individuals' health-related group identities are salient in medical encounters, many communication issues may arise given the norms, expectations, power dynamics, and different motivations in physician-patient communication (Baker et al., 2017). These communication issues are complicated by the larger social context and the evolution of the medical field. For example, the traditional, paternalistic model which assumes that physicians have the expertise to make pivotal medical decisions, and patients should conform to physicians' prescriptions and advice (Revenson & Pranikoff, 2005; Say et al., 2006) has been replaced by the shared decision-making model in Western societies. The shared decision-making model assumes patients receive adequate medical information, have the autonomy to express their treatment preference, and make decisions with physicians collaboratively (Siminoff & Step, 2005). The shift to the shared decision-making process that stresses the importance of patient autonomy has created other communication issues, given different preferences, health literacy, health beliefs, patient vulnerability and uncertainty (Elwyn et al., 2012; Gulbrandsen et al., 2016; Hawley & Morris, 2017). Despite the advocacy for shared decision-making, physicians still possess a powerful

identity and status, as many patients lack medical knowledge or may be unaware of their own expertise (Joseph-Williams et al., 2014).

Another layer of culture in IMG-patient communication concerns IMGs' and patients' cultural origins, impacting their shared knowledge and beliefs and shaping their behaviors and interpretations of each other's behaviors. Individuals obtain knowledge and develop knowledge structures as they are exposed to the social environment and engaged in certain behaviors (Duranti, 1997; Nishida, 1999). Growing up in different regions of the world, IMGs and U.S. patients may develop different sets of cultural knowledge. First, IMGs and patients may develop distinct cultural dimensions and orientations. One salient example is the cultural dimension of individualism and collectivism (Hofstede et al., 2010; Hui & Triandis, 1986). Those from individualistic cultures value the "I" identity and therefore place more importance on self-achievement. On the contrary, those from collectivistic cultures value the "we" identity and have more concern for face (Triandis et al., 1988). Accordingly, individuals from different cultural backgrounds tend to develop distinct ways to resolve conflicts (Ting-Toomey, 2005). When conflicts arise in interactions between IMGs who come from another cultural background and U.S. patients whose culture is individualistic-oriented, how IMGs deal with conflicts may not be expected by the U.S. patients. For instance, IMGs from a collectivistic cultural background may avoid conflicts to protect face, whereas U.S. patients who come from an individualistic background may be assertive in discussion and restore face threats later (Ting-Toomey, 1999).

In addition, IMGs and patients are likely to have different knowledge sets regarding language and nuances in language (e.g., accent and pronunciation). Many IMGs are non-native speakers (NNSs) of English (Fitzsimons & de Oliveira, 2021), whereas many U.S. patients are native speakers (NSs) of English. Even though the health-related group identities are often



salient in physician-patient interactions (Scholl et al., 2011), the identities as NSs and NNSs are omnirelevant (Kasper, 2004) in IMG-patient encounters. IMGs who are NNSs may be in the process of learning the second language and in search of constructing their identities as competent members of the community (Park, 2007; Wong, 2000). For instance, many IMGs do not understand idioms and slang used by U.S. patients (Michalski et al., 2017) and therefore may need U.S. patients' help in clarifying their language use. As physicians, IMGs have more expertise and knowledge regarding medicine, but IMGs may lack knowledge of language and language use in American English, whereas U.S. patients possess this set of knowledge.

In summary, IMG-patient interactions are complex due to the interpersonal and various intercultural layers. Given that IMGs and patients come from different cultural backgrounds (i.e., the culture of medicine, cultural origins), they may not share the same set of cultural knowledge (e.g., language, beliefs, norms, and behavioral scripts). Because of the intertwined identities of IMGs (e.g., physicians, NNSs) and U.S. patients (e.g., NSs) and different sets of cultural knowledge, expertise and power are constantly negotiated and shifted in medical encounters. At times, IMGs need to demonstrate their medical expertise and deliver medical information to U.S. patients. There may also be occasions in which the U.S. patients share their knowledge about their lifestyle and language with IMGs. These cultural differences are likely to create a misalignment in meanings in IMG-patient communication, resulting in negative patient evaluation and outcomes. Building on the conceptualization of IMG-patient communication as a multidimensional process, the next section reviews barriers in IMG-patient communication.

### ***Barriers in IMG-Patient Communication***

Given various cultural layers in IMG-patient interactions, IMGs encounter communicative barriers that are typically present in physician-patient communication and

communication between individuals from different cultural origins. Being trained to speak the *voice of medicine* (Mishler, 1984) and used to cultural norms in other countries, IMGs encounter various types of cultural and language barriers that may influence patients' evaluation and outcomes.

First, practicing patient-centered care and negotiating power with patients are especially challenging for IMGs (Michalski et al., 2017; Pilotto et al., 2007). In Western countries, patient-centered care (i.e., a practice that encourages exploring patients' perspectives, patient participation, and creating shared understanding; Street, 2017) and shared decision-making have been advocated by medical education to substitute for the paternalistic model of physician-patient relationship (de Haes, 2006; Eklund et al., 2019). Most IMGs grow up or receive their medical training in regions characterized by high power distance (Murphy, 2020). Power distance refers to "the extent to which the less powerful members of institutions and organizations accept that power is distributed unequally" (Hofstede, 1984, p. 419). In high-power-distance countries, individuals perceive a fundamental difference between subordinates and supervisors (Hofstede, 2001). The emphasis on power difference between subordinates and supervisors permeates the medical fields in IMGs' countries of origin and training (Welton & Kay, 2016). Although IMGs accept the notion of patient-centered care (McGrath et al., 2012), they are inept at practicing it (Michalski et al., 2017). Encouraging patient participation may threaten IMGs' identity needs of competence and being respected (Chen et al., 2010). IMGs may over-ask closed-ended questions in medical consultation as a less risky way to deal with topic control and power dynamics (Dahm et al., 2015; Welton & Kay, 2016).

Second, because IMGs lack knowledge concerning the U.S. and the local culture, they may have difficulties discussing certain topics with patients, establishing rapport, and responding

to patients' emotions. For example, IMGs are often unfamiliar with social issues such as religion, sexuality, and politics in the U.S., and thus feel uncomfortable sharing their thoughts and asking questions about these topics (Osta et al., 2017). The lack of shared knowledge on social issues creates barriers for IMGs to engage in small talk with patients (Gasiorek & van de Poel, 2012; Jain & Krieger, 2011). Despite the benevolent intent, IMGs' efforts to establish rapport through small talk may be perceived as forced, insincere, and inappropriate (Welton & Kay, 2016). IMGs' failure to develop a personal bond with patients may make their communication less interpersonal (Jain & Krieger, 2011). Less interpersonal communication between physicians and patients often generates less satisfying patient evaluation (Watson & Gallois, 1998).

Last, IMGs sometimes are evaluated negatively by patients due to their accent and encounter language barriers when interacting with patients. A number of IMGs were born and trained in South Asian, Middle Eastern, and Latin American countries (Murphy, 2020), where many do not speak English as their first language and/or do not speak a "standard" North American accent. Patients evaluate IMGs who do not have a standard North American accent as colder, less friendly, and less competent than physicians who have a North American accent (Baquiran & Nicoladis, 2019; Rubin et al., 1997). IMGs struggle with understanding nuances in patients' spoken English (for a review, see Michalski et al., 2017). These nuances in English include colloquial use of language, such as slang, sarcasm, and popular lingo (Chen et al., 2010; Jain & Krieger, 2011; Michalski et al., 2017; Osta et al., 2017; Pilotto et al., 2007; Welton & Kay, 2016). Although IMGs are fluent in academic English, they express concerns about their vocabulary in everyday conversations and pronunciation and accent for certain words and phrases (Jain & Krieger, 2011). Even Indian IMGs who speak English as their first language still struggle with adapting to the American ways of speaking English (Jain & Krieger, 2011).

Among these communication barriers, language barriers have been documented the most frequently and have shown to bring about negative consequences for IMG-patient communication and IMGs. Because of the lack of vocabulary and understanding of norms for language use, IMGs sometimes overuse medical jargon and use language that may sound overly polite, straightforward, cold, disrespectful, and condescending to patients (Dahm et al., 2015). Encountering language barriers may also reduce IMGs' self-efficacy in clinical settings (Kissil et al., 2012). A study conducted in Norway revealed that IMGs in Norway were worried that they may appear insensitive and cold in front of patients due to their lack of language proficiency. Given the language barriers, IMGs in Norway felt insecure in medical encounters, experienced uncertainty around their communication competence, and reported low self-esteem (Skjeggstad et al., 2017). Due to the negative consequences of encountering language barriers, understanding ways that can manage these barriers effectively and appropriately is vital to improving IMGs' communication skills, competence, and overall self-esteem.

Nevertheless, few studies have examined how IMGs deal with these language barriers. As the only empirical study that investigated IMGs' communication strategies, Jain and Krieger (2011) studied ways IMGs accommodate (i.e., changing ways of communication to adapt to conversational partners' needs) or non-accommodate (i.e., not adapt to conversational partners' needs) to help patients understand them. For example, they found that (a) IMGs change their ways of speaking (e.g., increase volume, reduce speech rate) to make sure patients understand them; (b) IMGs engage in nonverbals to signal their intention and assist with their verbal expressions; (c) a few IMGs perceive their accent as an important aspect of their identity and therefore use it as a conversational starter when interacting with patients. Jain and Krieger (2011)

also observed that IMGs learn how to pronounce certain words and meanings of colloquial language with the assistance of their U.S. friends and media content.

In short, the multidimensional nature of IMG-patient interactions has created cultural and language barriers for IMGs. One of the barriers that have been observed frequently is that IMGs are not able to understand patients' language use (e.g., idioms, slang) or conversations that are specifically relevant to the U.S. culture. Although researchers have studied how IMGs change their ways of speaking to adapt to patients' communication needs, how IMGs deal with their lack of comprehension and how patients evaluate communicative strategies to deal with their lack of comprehension remain underexplored. Understanding patient assessment of IMGs' various communicative strategies to deal with their lack of comprehension can offer insights into training and improving IMGs' specific communication skills. The next section reviews studies on patient evaluation of IMGs and discusses the limitations in this set of literature.

### **Patient Evaluation of IMGs and IMG Communication**

Most studies on patient evaluation of IMGs have concentrated on examining the effects of IMGs' physical or linguistic characteristics, such as ethnicity and accent. One line of research compared patients' evaluation of physicians who speak a standard North American accent versus physicians who speak a foreign accent. Some researchers observed that when patients perceive their physicians' accent as more non-standard, they evaluate the physicians as colder and more unfriendly (Rubin et al., 1997). In Canada, physicians speaking with a standard Canadian accent are perceived by both Chinese and Canadian patients as more competent than physicians speaking with a Chinese accent (Baquiran & Nicoladis, 2019). From a language attitude perspective, the lower rating can be attributed to the difficulty in processing foreign accents (Dragojevic et al., 2017).

Another line of research compared patients' evaluation of physicians from different ethnic or racial backgrounds. However, this line of research has generated mixed findings. For example, a study conducted in the U.S. found that Caucasian physicians are rated less warm than Arab physicians, which was explained by the author as social desirability (Jain, 2022). However, in another study, Rubin et al. (1997) found no significant effect of physicians' ethnicity on patient evaluation; only patients' *perceived* ethnicity of physicians impacted their rating of physicians' interpersonal attractiveness. Thus, effect of physicians' race or ethnicity on patient evaluation is mixed, which might be explained by different outcomes measured in each study (e.g., interpersonal attractiveness, warmth). The mixed findings regarding physicians' race or ethnicity might also be attributed to different racial or ethnic groups examined in each study.

Although studying the effects of physicians' ethnicity and accent is of great importance because it informs us of how patients view IMGs based on their characteristics, it reveals less about how IMGs can communicate to improve patients' evaluation and outcomes. Ethnicity and accent are considered human beings' primary characteristics because one cannot change their ethnicity or eliminate their accent (Kramer et al., 2013). IMGs, like other immigrants, may learn the U.S. culture and ways of speaking, but people may still identify them as out-group members based on their physical traits and accent (Morris, 1996). Instead of concentrating on studying primary characteristics that are immutable (Kramer et al., 2013), investigating behaviors that IMGs can change to improve patients' evaluation and outcomes can provide more practical implications for education and training programs. One of these behaviors is IMGs' communication strategies.

Understanding patients' evaluation of IMGs' communication is crucial given its impact on patients' emotional and physical outcomes and healthcare systems. Even though effective

physician-patient communication can influence patients' health outcomes directly, in most cases, physician-patient communication impacts patients' health through indirect pathways, such as patient satisfaction, immediate feelings after the medical encounters, trust in the health care system, and medical adherence (Street, 2013; Street et al., 2009). In addition to patients' health outcomes, patients' cognitive and affective evaluation of their physicians and communication with physicians can impact the healthcare system. For instance, patients may not follow the treatment regimen due to unsatisfying communication with their physicians, resulting in increased health care costs or even severe economic consequences for health care systems (Chisholm-Burns & Spivey, 2012).

It has been well-established that physicians' communication affects patients' task-oriented (e.g., patient understanding, quality of care) and affective-oriented evaluations (e.g., feeling involved; Jung et al., 1998). For instance, physicians' actual engagement in patient-centered care (PCC) and patients' perceptions of physicians' PCC are associated with patients' trust and liking in physicians and evaluation of physicians' overall competence (H. Hong & Oh, 2020; Saha & Beach, 2011). Physicians' effective management of information (e.g., exchanging information) can facilitate patients' understanding, leading to a higher patient satisfaction score (Street et al., 2009). In addition, physicians' engagement in positive affect communication is related to higher patient satisfaction, intention to adhere (Hesse & Rauscher, 2019), less anxiety and negative mood (van Osch et al., 2017), and more information recall (Visser et al., 2017). Even a slight increase in non-verbal communication, such as affirmative gestures and facial expressions, can significantly increase patient evaluation of the interview (Collins et al., 2011). Physicians' communication styles, such as patient-centered communication, may override the

effect of their primary characteristics (e.g., race) in influencing patient outcomes (Adams et al., 2015)

Despite the extensive research on the association between physicians' communication and patient evaluation and outcomes, most studies on this topic conceptualize and measure physicians' communication and communication quality based on generic concepts or a-theoretical categorizations. One trend is to treat the perception of PCC as a synonym for high-quality physician communication to predict patient evaluation and outcomes (e.g., H. Hong & Oh, 2020; Jiang, 2017). PCC studies provide a list of ideal behaviors in patient-provider communication (Street, 2017), which could predict patient satisfaction, trust in physicians, or even patients' well-being (Jiang, 2017). However, it reveals less about *how* physicians could enact these behaviors and strategies to enhance patient outcomes (Scott & Van Scoy, 2020). For example, one of the important components of PCC is that physicians *should* explore patients' beliefs, but PCC studies have not proposed *how* physicians could explore patients' beliefs. A physician could, with good intention, ask an immigrant patient a closed-ended question to explore their health beliefs (e.g., "Do you use alternative medicine?"). This type of question follows the PCC principle of exploring patients' beliefs but does not give patients much autonomy to express their thoughts. Although PCC is a comprehensive concept encompassing multiple aspects of physicians' behaviors, it has limited utility in informing physicians of the specific communicative strategies they can adopt to improve patient outcomes in specific situations. In other words, it reveals little in terms of what communicative strategies can generate a more positive patient evaluation under certain circumstances.

To conclude, previous studies have focused on studying the effects of IMGs' physical and linguistic features on patient evaluation and outcomes instead of the effects of IMGs'



communication, yet only a handful of studies examined patients' perceptions of IMGs' communication. Studying how IMGs' communicative features influence patient evaluation and outcomes has implications for education and training programs to help IMGs improve their communication skills. The concentration on generic concepts (e.g., PCC) offers limited implications for improving specific communication skills in IMG-patient interactions. Thus, studies investigating patients' evaluation of IMG-patient communication should focus on communication barriers that IMGs encounter and understand how IMGs can communicate to generate more satisfying patient outcomes. Studying this research topic requires a theoretical perspective that explicates what makes effective and appropriate or "high-quality" communicative strategies. As compared to broad conceptualizations of communication, the multiple goals perspective (Caughlin, 2010) captures not only multiple aspects of communication but also posits propositions that explicate what is considered effective and appropriate communication. In the next section, I introduce the multiple goals perspective to conceptualize IMG-patient communication and particularly IMGs' communicative strategies to deal with their lack of comprehension of patients' language use and culturally relevant talk.

### **A Multiple Goals Perspective**

IMGs can deal with their lack of understanding of patients' language use and culturally relevant talk using distinct strategies. Certain strategies can be more effective and appropriate in dealing with the lack of comprehension and result in more favorable patient evaluation. In this study, I adopt a multiple goals perspective (Caughlin, 2010), which refers to a set of communication theories sharing common assumptions about interaction goals, communicative behaviors, and interpretations of communicative behaviors, to understand how IMGs can generate a more positive patient evaluation. This section introduces the definition of interaction

goals, common assumptions underlying the multiple goals perspective, and interaction goals that IMGs may pursue when communicating with patients. Furthermore, these assumptions are used to derive hypotheses and research questions concerning how patients evaluate communicative strategies IMGs adopt to deal with their lack of comprehension.

### ***Multiple Goals Assumptions***

Theories of interaction goals (for reviews, see Caughlin, 2010; Wilson & Feng, 2007) conceptualize goals in two relevant but distinct ways. The first conceptualization defines goals as “end states desired by individuals” (Wilson, 2002, p. 135), also known as *personal goals* (Wilson & Caughlin, 2018). Personal goals are what individuals attempt to obtain in the future, which are cognitive mental states (O’Keefe, 1988; Palomares, 2014; Wilson, 2002; Wilson & Caughlin, 2018). In this definition, researchers distinguish goals from behaviors (Palomares, 2014) and treat goals as motivators for behaviors (e.g., goals-plans-action theory, Dillard, 2008, 2015). The second definition, used less frequently by communication scholars, conceptualizes goals as purposes and demands embedded in social situations. These goals refer to what people are expected to accomplish in a social situation (O’Keefe, 1988; Wilson & Caughlin, 2018). In this definition, social situations define what individuals are supposed to accomplish, but individuals may not necessarily attempt to achieve these goals (Wilson & Caughlin, 2018). Communication scholars labeled this type of goals as *situationally relevant objectives* (Wilson, 2002) or *conventional goals* (Wilson & Caughlin, 2018). As conventional goals are defined by social situations, they are shaped by contexts, norms, and relationships between interactants (Wilson & Feng, 2007). For example, as patient-centered care (Street, 2017) is advocated in the U.S. healthcare system, physicians are anticipated to build rapport and maintain mutual trust with patients (Scott & Van Scoy, 2020). These goals are conventional as defined by physician-patient

relationships in the U.S. Yet, not all physicians pursue these goals in every medical encounter given individual differences, situational constraints, and other factors. In other words, conventional goals, such as building rapport and establishing a trusting relationship are relevant to patient-provider interactions in the U.S., but physicians may not necessarily treat them as important or pursue them cognitively.

The multiple goals perspective includes a set of interaction goals theories sharing similar assumptions about communication (Caughlin, 2010). First, this set of theories assumes that communicators are goal-oriented. Communicators pursue several goals for a single interaction, and these goals may not always align with each other (Caughlin, 2010). Apart from exchanging information, communicators may pursue instrumental goals (i.e., tasks such as persuading and seeking information), relational goals (i.e., initiating, maintaining, or ending relationships), and identity goals (i.e., portraying and managing images of self and others; Clark & Delia, 1979). Second, the interaction goals individuals pursue shape their message production (Caughlin, 2010). A prominent theory explaining the relationship between interaction goals and the message production process is the goals-plans-action theory (GPA; Dillard, 2015). GPA treats the message production process as following three steps. Personal goals, which are individuals' cognitive states (Wilson, 2002), prompt their mental representation of communicative behaviors (i.e., plans; Berger, 1997), which in turn shape the person's actual communicative behaviors (i.e., action; Dillard, 2008, 2015). GPA conceptualizes interaction goals as primary and secondary goals. Primary goals serve the motivational function by defining the interactional episodes, and secondary goals shape and constrain the accomplishment of primary goals (Dillard, 2008). Primary goals prompt planning while secondary goals shape how the plan is put into action.

Third, a subset of the interaction goals theories, such as normative rhetorical theory (NRT; Goldsmith, 2019) and the logics of message design (O’Keefe, 1988), assumes that communication quality or sophistication can be assessed based on how effective the communicative behaviors attend to multiple goals (Caughlin, 2010). This subset of theories adopts a conventional goals conceptualization and focuses on message and conversation features. NRT explains why particular messages or conversations are more effective and appropriate within a sociocultural community, focusing on the quality of communication instead of frequency (Goldsmith, 2015, 2019). According to NRT, performing particular tasks may pose threats to the desired identities and relationships (Goldsmith, 2004, 2015, 2019). Conversations that accomplish the tasks while attending to desired relationships and identities are often more effective and appropriate than those that fail to address multiple purposes (Goldsmith, 2015, 2019). For instance, talking about lifestyle change with partners who have experienced a cardiac event may be perceived as exerting control and connotating criticism (Goldsmith et al., 2006). Adopting face-saving strategies (e.g., indirectness, joking) allows communicators to indicate caring and positive aspects of the conversations (Goldsmith et al., 2012). In physician-patient interactions, physicians’ attempts to assert expertise might threaten patients’ capable and autonomous identity (Liao et al., 2022). Based on the same assumptions, the logics of message design (O’Keefe, 1988) recognize that complex communication situations often entail multiple competing goals. Although multiple conventional goals are relevant for a certain interaction, communicators vary in terms of the extent to which they recognize each goal, pursue each goal (i.e., personal goals, which are cognitive states; Wilson & Caughlin, 2018), and their ability to manage multiple goals simultaneously. O’Keefe (1988) classified approaches to manage multiple goals into three hierarchically ordered categories: Expressive, conventional, and rhetorical

message design logics. The expressive logic treats communication as “a medium for expressing thoughts and feelings” (O’Keefe, 1988, p. 84). Expressive messages value honesty, openness, and clarity but are often considered the least sophisticated category because they fail to attend to relational and identity goals. The conventional logic emphasizes performing communication tasks appropriately within the constraints of social rules. By adopting a conventional logic, communicators attempt to accomplish goals that are normatively relevant to the social interaction by using various strategies, such as politeness. The most sophisticated message design logic is rhetorical. Messages that feature a rhetorical logic redefine and renegotiate the situation, thereby creating a context that allows for achieving multiple competing goals simultaneously (O’Keefe, 1988). In the context of reacting to siblings’ HIV disclosure, for example, reactions adopting the rhetorical logic are evaluated as the highest on supportiveness, and reactions adopting the expressive logic are evaluated as the least supportive (Caughlin et al., 2008).

Fourth, the multiple goals perspective assumes that some communication behaviors imply various meanings, and therefore can be interpreted differently depending on the perceived goals of these behaviors (Caughlin, 2010). More specifically, individuals’ perception of what their conversational partners want to achieve can impact the relationship between the communication behaviors and conversation or relational outcomes (Caughlin, 2010). This assumption has received empirical support in various contexts. For instance, the association between topic avoidance and relational satisfaction is more negative when partners increasingly believe breast cancer patients’ goals for topic avoidance are protecting themselves and thinking talking is inappropriate (Donovan-Kicken & Caughlin, 2010). In the context of language brokering, as bilingual children increasingly perceive their Spanish-speaking mothers’ goal is to

control the translation, they feel less satisfied with the mother-child relationship (Guntzwiller, 2017).

The current investigation draws on the assumptions summarized above as the theoretical guidance for studying IMG-patient interactions when IMGs are not able to understand patients. The next section introduces interaction goals IMGs are likely to pursue when interacting with patients, particularly interaction episodes when IMGs need to deal with their lack of comprehension of patients' language use and culturally relevant talk. In addition, the next section introduces corresponding verbal strategies that IMGs may engage in to deal with their lack of comprehension given the interaction goals they pursue.

### ***IMGs' Personal Goals***

Interaction goals can be broadly classified into task, relational, and identity goals (see Clark & Delia, 1979; Wilson & Caughlin, 2018). The current investigation adopts this categorization and focuses on personal goals in IMG-patient interactions that involve managing IMGs' lack of comprehension. Certain communicative acts can be face-threatening to communicators and/or their conversational partners (Wilson et al., 1998). When IMGs lack understanding of patients' language use and culturally relevant small talk, their task, identity, and relational goals might be threatened. Therefore, IMGs are likely to engage in different strategies to accomplish their interaction goals, including understanding patients (task), establishing a trusting relationship (relational), and hiding linguistic incompetence (identity).

First, IMGs may pursue the task goal of *understanding patients*. Because IMGs and patients form different perspectives on health and medicine, they may have distinct views on the objectives for health care and treatment options (Harmsen et al., 2005). Creating a mutual and shared understanding of health problems that need to be solved is crucial in physician-patient

interactions (Gross et al., 2013; Street, 2017). Physicians are expected to understand patients' objectives, habits, health beliefs, concerns, and biopsychosocial backgrounds (Epstein & Peters, 2009; Street, 2017) and adjust their objectives for medical encounters accordingly (Scott & Van Scoy, 2020). Specifically, IMGs are likely to pursue the goal of understanding patients' language use given the language and cultural differences between IMGs and U.S. patients (Rothschild, 1998). IMGs who are NNSs may strive to understand their conversational partners' language use to establish a mutual understanding (Rogerson-Revell, 2010). This goal is especially salient for IMGs when patients use idioms, slang, and sarcasm and engage in small talk that incorporates information that requires background knowledge of the U.S. and the local culture to comprehend. Understanding patients' language use and small talk is an essential step to forming an accurate and comprehensive understanding of patients' concerns, objectives, and biopsychosocial backgrounds. Consequently, physicians can identify the discrepancy between their and patients' objectives and make medical decisions that align with patients' beliefs and preferences (Street & Haidet, 2011). Although both understanding patients' language use and patients' health conditions are relevant to IMG-patient communication, the current project concentrates on the inferred goal of understanding patients' language use given the focus on IMGs. The inferred goal of understanding patients' health conditions is measured but not included in the hypotheses.

In addition, IMGs may attempt to accomplish the goal of *establishing a trusting relationship* when interacting with U.S. patients. Although establishing trust is often not the primary goal of medical encounters (Dalton et al., 2021), it is an essential component of physician-patient relationships. Compared to physicians, patients are less knowledgeable about medicine and experience vulnerability due to their health conditions (Calnan & Rowe, 2008). Even though most patients do not doubt the intention of their physicians' treatments and advice,

they may not fully trust their physicians because of the uncertainty and stress they experience (Skirbekk et al., 2011). For health care providers, a trusting relationship means patients acknowledge and accept their vulnerability, let providers control the situation, express their thoughts, and engage in full disclosure (Dalton et al., 2021). In other words, patients in a trusting relationship are less likely to withhold any thoughts and information from their physicians and may have more confidence in their physicians' medical decisions. Thus, establishing a trusting physician-patient relationship can increase patient satisfaction and adherence (Safran et al., 1998). On the contrary, a physician-patient relationship that lacks trust can potentially increase healthcare systems costs and result in adverse health outcomes (Rosser, 2001).

In IMG-patient interactions, IMGs are also likely to pursue the identity goal of *hiding linguistic incompetence*. Linguistic competence, in this context, refers to one's knowledge about and skills in navigating a language system, such as vocabulary, pronunciation, spelling, and grammar (Valeeva et al., 2016). As IMGs may encounter language barriers when communicating with patients (Jain & Krieger, 2011), they may want to hide their lack of understanding of patients' language use. Many IMGs are NNSs who want to "create an appearance of language ability so as not to look unprepared, foolish or stupid" (A. D. Cohen, 2014, p. 14). Similar to other NNSs, IMGs may adopt available communicative resources to create an impression of a competent language speaker (Wong, 2000). Thus, when encountering situations in which U.S. patients engage in the colloquial use of language, IMGs may not want to be perceived as lacking linguistic competence.

To conclude, IMGs are likely to pursue three interaction goals, including the task goal of understanding patients, the relational goal of establishing a trusting relationship, and the identity goal of hiding linguistic incompetence when interacting with U.S. patients.



### ***IMGs' Potential Verbal Strategies***

According to GPA, the interaction goals individuals pursue prompt plans, which in turn shape individuals' communicative behaviors (Dillard, 2015). Hence, in the context of IMG-patient communication, the interaction goals that IMGs pursue may influence their communicative strategies to deal with their lack of understanding of patients. According to O'Keefe and Delia (1982), when encountering complex communicative situations in which multiple conflicting goals are present, communicators may prioritize one of these interaction goals over other goals (i.e., *selection*). One of the ways that selection is embodied in communication behaviors is by performing the task bluntly, corresponding with the bald-on-record strategy in politeness theory (Brown & Levinson, 1987). NNSs, including some IMGs, lack vocabulary (e.g., lexical downgraders) to soften their tone when making requests (Economidou-Kogetsdis, 2011). Thus, in interactional episodes when IMGs fail to understand patients' language use and small talk, IMGs may ask patients for clarifications bluntly to prioritize their goals of understanding patients. By asking patients to clarify their language use bluntly, IMGs are able to accomplish their goal of understanding patients' language use. To simplify, this strategy of prioritizing the goal of understanding patients' language use over other goals is labeled as *being blunt*.

Another type of selection is to not perform the communicative task, so as to avoid face threats (O'Keefe & Delia, 1982). This strategy is commonly used by NNSs to manage their lack of comprehension (A. D. Cohen, 2014; Terui, 2012). For example, NNSs sometimes adopt backchannel cues and affirmative nonverbal cues in their conversations with NSs to feign comprehension, with the purpose of disguising their undesired identity (Terui, 2012; Terui & Hsieh, 2020). Based on the politeness theory (Brown & Levinson, 1987), this strategy is

categorized as not performing the face-threatening act. For IMGs, language barriers such as not understanding patients have created uncertainty and insecurity for their professional identity, and thus some of them choose to hide their lack of understanding in front of patients (Skjeggstad et al., 2017). In short, when lacking understanding of patients, IMGs may decide to use backchannel cues (e.g., uh-huh) to feign comprehension instead of requesting clarification, to prioritize their goal of hiding linguistic incompetence over other goals, which can be labeled as *feigning comprehension*.

IMGs can also separately achieve their goals through communication (*separation*; O’Keefe & Delia, 1982). Specifically, when multiple goals are in conflict, IMGs can resolve the conflict by temporally addressing each goal in their communication or addressing goals using different aspects of their behaviors (O’Keefe & Delia, 1982). For instance, communicators can perform the communicative tasks bluntly and then adopt repairs and redress (e.g., hedges, compliments) to achieve other goals (O’Keefe & Shepherd, 1987). When lacking comprehension, IMGs may explicitly explain their lack of understanding as a result of language and cultural differences and request the patients to clarify the meaning. Although the original version of the politeness theory (Brown & Levinson, 1987) considers redressive actions (i.e., positive facework, negative facework) as ways to reduce threats to hearers’ face, redressive actions could also be used to mitigate threats to speakers’ face. For example, one can provide rationale for their actions to mitigate criticism and rejection (i.e., positive facework; Goldsmith & MacGeorge, 2000). Although explaining the lack of understanding as a result of language and cultural differences inevitably reveals IMGs’ lack of understanding patients, disclosing one’s cultural background could signal IMGs’ intention to build rapport and relationships with patients (Jain & Krieger, 2011). To simplify, this strategy is labeled as *providing rationale*.

To explore and validate whether IMGs engage in these verbal strategies to deal with their lack of comprehension, a pilot study was conducted at an internal medicine unit in a Midwestern U.S. hospital. The pilot study included interviews with 11 IMG residents (all men) and three faculty physicians (all women) who worked closely with the IMG residents. The pilot study also included a survey (open-ended questions) with nine IMG residents who did not participate in the interviews (55.56% were women), as well as video recordings of seven IMGs' interactions with a standardized patient (i.e., objective structured standardized examinations; OSCEs). The responses to interviews and surveys show that IMG residents engaged in a variety of verbal communicative strategies to deal with the lack of comprehension of patients. In the OSCEs, the standardized patients were asked to use American idioms (e.g., cold turkey, pins and needles) throughout the conversations, which allowed for observing IMGs' strategies to deal with their lack of comprehension.

The pilot study findings demonstrated that IMG residents in the local hospital did engage in the strategy of being blunt, feigning comprehension, and providing rationale to deal with their lack of comprehension. For example, in the survey, when being asked the question "If you do not understand a patient (because they used a phrase you do not know, slang that you are not familiar with, or pronounced a word in a way you did not understand), what do you do or say (if anything)?" Resident 2001 reported using the being blunt strategy, "[I] ask them to repeat themselves". Resident 2008 reported engaging in the providing rationale strategy, "I usually say that I don't get that reference as I am not from Illinois, and if he/she can explain it to me to help me out". During the interviews, faculty physician 1001 noted that sometimes residents would choose to cover their lack of understanding (i.e., feigning comprehension strategy) during medical encounters, "They may ask the attending or a friend they are comfortable with, but they

may be nervous to ask the patient what they mean by that.” In the OSCEs, some residents also engaged in the feigning comprehension strategy. Resident 39’s conversation with the standardized patient (Ms. Tempo) illustrates this strategy,

101 Tempo: -[Hello!

102 Resident 39: -[Hi, Ms.Tempo, how are You?

103 Tempo: I’ve been on pins and needles waiting to hear what you have to say.

104 Resident 39: (.8) Yeah (h), we can get started. I’m Resident 39.

In this excerpt, when the patient used an idiom (i.e., pins and needles) to describe her feelings (Line 103), Resident 39 paused for a while, laughed, and redirected the conversation to cover his lack of comprehension (Line 104). In the debriefing session, Faculty Physician 1001 and the standardized patient asked Resident 39 whether he understood the idiom, Resident 39 admitted that he did not understand and tried to cover his lack of understanding.

All the verbal strategies, definitions, examples, and how they correspond with O’Keefe and Delia’s (1982) typology are presented in Table 1. In short, IMGs may vary in the extent to which they want to accomplish the goals of understanding patients, establishing a trusting relationship, and hiding linguistic incompetence when lacking comprehension of patients. To prioritize certain goals or separately address different goals, IMGs may engage in various verbal strategies, such as being blunt, feigning comprehension, and providing rationale.

**Table 1.** IMGs’ Potential Verbal Strategies to Deal with Lack of Comprehension of Idioms

Strategy	Definition	Corresponding Strategy in Politeness Theory	Corresponding Strategy in O’Keefe & Delia (1982)	Personal Goals	Dialogue Example
Being Blunt	Asking the patient to clarify the meaning of idioms, slang, or culturally based concepts directly.	Bald-on-Record	Selection	Understanding Patients’ Language use	What do you mean by “out of sorts”?
Feigning Comprehension	Using backchannel cues, saying “yeah”, saying partially understood information, or using relevant information to keep the conversation flowing and cover the lack of understanding (Cohen, 1988; Terui, 2012)	Not Performing Face-Threatening-Act	Selection	Hiding Linguistic Incompetence	(Pause) Yeah...yeah.
Providing Rationale	Asking the patient to clarify the meaning of idioms, slang, or culturally-based concepts directly, while disclosing one’s cultural and language differences to the patient to explain the lack of comprehension.	Redressive Action (Positive Facework)	Separation	Understanding Patients’ Language use; Establishing a Trusting Relationship	What do you mean by “out of sorts”? I grew up in India, where we often speak English, but some American phrases are new to me.

### *IMGs' Verbal Strategies and Patient Goal Inference*

The verbal strategies IMGs engage in to deal with their lack of comprehension of U.S. patients may affect patients' perception of the extent to which IMGs want to achieve certain interaction goals (i.e., goal inference). *Goal inference* refers to individuals' beliefs or perceptions about their conversational partner's interaction goals; messages from the conversational partners could affect individuals' beliefs about what their conversational partners want to accomplish (Caughlin, 2010). Goal understanding theory (GUT) posits that individuals infer their conversational partners' interaction goals based on factors, which are mental representations of interactions (Palomares, 2009). These factors include relationship types, social contexts, and communication, which are likely to trigger individuals' inference of goals (Palomares, 2015). Because my pilot data suggest that IMGs may pursue strategies aligned with the interaction goals of understanding patients' language use, hiding linguistic incompetence, and establishing a trusting relationship, I focus on how patients may infer these goals from IMGs' verbal behaviors to deal with their lack of comprehension.

Compared to the strategy of being blunt, when IMGs use the strategy of feigning comprehension, patients may infer more of the hiding linguistic incompetence goal and less of the understanding patient language use and establishing a trusting relationship goal. Specifically, when IMGs ask patients to clarify their meaning (i.e., being blunt), they explicitly signal their goal of understanding patient language use but inevitably reveal their lack of linguistic competence. Thus, patients are likely to infer that IMGs attempt to understand patients' language use rather than attempting to hide their lack of understanding. IMGs who feign comprehension may use backchannel cues (e.g., uh...uh...) or mention other irrelevant information as a way to cover their lack of understanding (Cohen, 2014; Terui, 2012). Thus, patients may perceive IMGs

who feign comprehension as attempting to hide their lack of linguistic competence instead of trying to understand patients. The strategy of feigning comprehension is effective in the immediate conversational turn but encounters repercussions if becomes noticeable to patients (Terui & Hsieh, 2020). Patients may perceive IMGs who feign comprehension as only attempting to achieve their own identity goal (e.g., not being perceived as incompetent or stupid) rather than trying to establish a trusting relationship with patients. Therefore, the following hypotheses are proposed,

*H1: When IMGs use the feigning comprehension strategy, patients will report less inference of the goals of understanding patients' language use and establishing a trusting relationship than when IMGs use the being blunt strategy.*

*H2: When IMGs use the feigning comprehension strategy, patients will report more inference of the goal of hiding linguistic incompetence than when IMGs use the being blunt strategy.*

In comparison to the strategy of being blunt and feigning comprehension, patients encountering IMGs who provide rationale for their lack of understanding may infer more of the establishing a trusting relationship goal. Specifically, when IMGs provide rationale for their lack of understanding of patients, this may signal that they do not want to hide their lack of comprehension (i.e., the goal of hiding linguistic incompetence). As disclosing personal backgrounds could facilitate relationship development (Greene, 2006), being honest with patients about the reasons for their lack of comprehension could also signal IMGs' intention to build a trusting relationship with patients. Therefore, the following hypotheses are proposed,

*H3: When IMGs use the strategy of providing rationale, patients will report more inference of the goal of establishing a trusting relationship than when IMGs use the strategy of being blunt.*

*H4: When IMGs use the strategy of providing rationale, patients will report more inference of the goals of understanding patient language use and establishing a trusting relationship and less inference of the goal of hiding linguistic incompetence than when IMGs use the feigning comprehension strategy.*

### ***Patient Goal Inference and Patient Evaluation***

Patients' inference of IMGs' interaction goals may affect how they evaluate IMGs and their conversations. Individuals interpret communication for meaning; the interpretation of communicative behaviors depends on individuals' inference of the interaction goals their conversational partners want to accomplish (Caughlin, 2010). For instance, topic avoidance may be interpreted differently based on the goals individuals infer from the communication (Caughlin & Afifi, 2004; Donovan-Kicken & Caughlin, 2010). When people perceive that their friends avoid a certain topic to protect the relationship, they feel more satisfied with the relationship and report less hurt and distance than when the inferred goal is self-protection (Palomares & Derman, 2019). In the context of advice communication, the more children perceive their parents' goal as confirming their idea for managing physical activity, the better the advice outcomes (e.g., advice quality; Guntzviller et al., 2021). Thus, in IMG-patient interactions, patients' goal inference is likely to be associated with patients' evaluation of IMGs and their conversations with IMGs. Six patient evaluation outcomes are particularly relevant to IMG-patient interactions and are examined in the current study, including linguistic competence, communication competence, cultural competency, physician expertise, physician warmth, and patient satisfaction. Each of the



three patient inferred goals are discussed individually for how they might be associated with patient evaluation outcomes.

First, when patients perceive more that IMGs attempt to accomplish the goal of understanding patients' language use, they also understand that IMGs are not familiar with English vocabulary, especially idioms and slang. Accordingly, patients may perceive IMGs as lacking linguistic competence. Further, as language is one of the elements of culture (Ting-Toomey, 1999), IMGs' linguistic skills may also reflect their cultural competency. According to Sue et al. (1996), patients' perception of physicians' cultural competency is typically composed of three dimensions: Cultural knowledge, awareness, and skills. Cultural knowledge is the patients' evaluation of the extent to which their physicians have knowledge about their culture. Cultural awareness is the patients' perception of how sensitive physicians are to their own cultural bias and the potential effect of their bias on patients. Cultural skills refer to patients' assessment of physicians' ability in handling intercultural health encounters. As an important concept in intercultural communication in health encounters, cultural competency is associated with patient satisfaction (Lucas et al., 2008; Michalopoulou et al., 2009) and patient adherence (Hooper & Huffman, 2014), which can affect patients' physical and emotional outcomes (Street et al., 2009).

Apart from IMGs' cultural competency, patients' perceptions of what IMGs want to accomplish during the interactions may also influence patients' evaluations of IMGs' communication competence. Communication competence is composed of two fundamental components: effectiveness and appropriateness (Spitzberg & Cupach, 1984). Communication effectiveness concerns the degree to which communicators accomplish their main objectives (e.g., clearly expressing ideas); communication appropriateness concerns the avoidance of

violating norms and rules in a specific communication context (Canary & Spitzberg, 1987). When patients increasingly perceive that IMGs' goal is to hide their linguistic incompetence, they may perceive that IMGs are not able to communicate their thoughts clearly. Moreover, patient perceptions of IMGs' lack of linguistic competency may affect patients' perceptions of IMGs' medical expertise. Patients' perceptions of physician expertise reflect patients' perceptions of physicians' knowledge of medical issues and their ability to address patients' problems, which is an important factor in determining patients' trust in physicians (Blödt et al., 2021). Although IMGs' medical expertise is not necessarily related to their linguistic competence, some IMGs are afraid that their linguistic barriers may make them appear less competent medically (Skjeggstad et al., 2017). However, it is unclear whether patients will perceive these four aspects of competence (i.e., linguistic, cultural, communication competence, and physician expertise) differently. It is possible that patients may differentiate linguistic competence from cultural, communication, and medical competence, and therefore will not perceive IMGs lacking linguistic competence as equivalent to lacking cultural, communication, and medical competence. However, it is also possible that some patients may use linguistic competence as a proxy for IMGs' overall competence and perceive IMGs as incompetent culturally, communicatively, and medically due to the lack of linguistic competence. Therefore, the following hypotheses are proposed,

*RQ1: Will patients perceive IMGs' linguistic competence, communication competence, cultural competency, and physician expertise differently? Are these four aspects of competence sub-dimensions of IMGs' overall competence?*

*H5: As patients increasingly infer IMGs' goal as understanding patients' language use and hiding linguistic incompetence, they will perceive IMGs as having less linguistic competence.*

*RQ2: As patients increasingly infer IMGs' goal as understanding patients' language use and hiding linguistic incompetence, will they perceive IMGs as having less cultural competency, communication competence, and physician expertise?*

A concept relating to but distinct from the notion of competence or expertise is physician warmth. Warmth (i.e., friendliness, kindness) is one of the fundamental dimensions in social judgments, affecting the extent to which individuals trust or doubt another person's intentions (Cuddy et al., 2008). People or social groups that are rated as high in competence are not necessarily considered as warm and vice versa (Cuddy et al., 2011). Hence, IMGs who are considered linguistically, communicatively, and culturally competent, or having expertise are not necessarily treated as warm physicians by their patients. Physician warmth is not just about physicians' efficiency, skills, and knowledge, or whether they have linguistic and cultural competence, but also their willingness and effort to connect with patients (Howe et al., 2019). In IMG-patient interactions, when patients perceive that IMGs are attempting to understand their language use and establish a trusting relationship, they are likely to perceive that the IMGs want to make connections, thus evaluating the IMGs as warm. Thus, the following hypothesis is put forward,

*H6: As patients increasingly infer IMGs' goal as understanding patients' language use and establishing a trusting relationship, they will report IMGs as warmer.*

Previous studies have shown that communicators pursuing different interaction goals generate different conversational outcomes, such as conversational satisfaction (Scott &

Caughlin, 2014). In IMG-patient interactions, a proxy for conversational satisfaction is patient satisfaction. Patient satisfaction reflects patients' overall cognitive and affective evaluation of the health services they receive (Burgoon, 1987), which is a significant predictor of patients' commitment to the treatment plan or even patients' health outcomes (Street et al., 2009). When patients perceive IMGs as pursuing the goal of understanding patients' language use, they may evaluate IMGs as lacking linguistic competence but being warm and friendly. As IMGs may be perceived as inadequate on one dimension (i.e., linguistic competence) while being rated as high on the other dimension (i.e., warmth), it is unclear how patients will evaluate the conversation as a whole. Therefore, the following research question is proposed,

*RQ3: Will patients' inferred goal of understanding patients' language use be associated with patient satisfaction?*

When patients increasingly perceive that IMGs want to hide their linguistic incompetence, the evaluation of IMGs and their conversations may be different. The goal of hiding linguistic incompetence is a self-oriented goal (Samp, 2013), meaning IMGs who engage in the feigning comprehension strategy want to protect their own identity when interacting with patients. In the context of topic avoidance, inferring the goal of self-protection generates more negative evaluations than inferring the goal of relationship protection (Palomares & Derman, 2019). Thus, in IMG-patient interactions, when patients infer that IMGs' goal is to protect their own identity as a competent language speaker rather than focusing on patients' identity, understanding patients' language, and maintaining a relationship, patients are likely to evaluate the IMGs and their conversations as less satisfying. Nevertheless, whether patients' inferred goals of hiding linguistic incompetence will impact patient perception of IMGs' cultural,

communication, and medical competence remains unclear. Thus, the following hypothesis and research questions are proposed,

*H7: As patients increasingly infer IMGs' goal as hiding linguistic incompetence, they will perceive IMGs as having less linguistic competence and warmth and report less patient satisfaction.*

*RQ4: Will patients' inferred goal of hiding linguistic incompetence be associated with patient evaluation of IMGs' cultural competency, communication competence, and physician expertise?*

Compared to the goals of understanding patients and hiding linguistic incompetence, the goal of establishing a trusting relationship signals benevolent intention and one's desire to maintain a relationship. Thus, when patients perceive more that IMGs want to accomplish the goal of establishing a trusting relationship, they are likely to give a higher rating on IMGs' warmth and feel more satisfied with the interaction. Thus, the following hypothesis is proposed,

*H8: As patients increasingly infer IMGs' goal as establishing a trusting relationship, they will perceive IMGs as warmer and report more patient satisfaction.*

Moreover, patients' inference of IMGs' interaction goals may mediate the effect of IMGs' strategies to deal with their lack of comprehension and patient evaluation. According to the multiple goals perspective (Caughlin, 2010), conversational partners' communication behaviors influence individuals' perception of their interaction goals, which in turn affect individuals' subjective evaluation of the conversation. Thus, the following mediation hypothesis is proposed,

*H9: The effect of IMGs' communication strategies (i.e., being blunt, feigning comprehension, providing rationale) on patient evaluations (i.e., linguistic competence,*

*cultural competency, communication competence, physician expertise, warmth, patient satisfaction) will be mediated by patients' inference of IMGs' goals (i.e., understanding patients' language use, hiding linguistic incompetence, establishing a trusting relationship).*

### ***Patient Evaluation of IMGs' Nonverbal Communication***

Research and practices in communication and health have placed more emphasis on physicians' verbal communication than nonverbal communication. Most studies investigating predictors of patient outcomes (e.g., patient satisfaction) examined the role of physicians' verbal communication, such as task-focused and socio-emotional focused communication (Roter & Larson, 2002), patient-centered messages (Adams et al., 2015), and specific word choices (Tausczik & Pennebaker, 2010). Given the predominant research and interest in verbal behaviors, communication interventions delivered to physicians have traditionally focused on verbal content (Cegala & Lenzmeier Broz, 2002). In medical education, communication training has paid less attention to the nonverbal aspect of physicians' communication (Reiss & Kraft-Todd, 2014).

Nonverbal behaviors are important in creating meanings and interpreting communication in human interactions, especially in physician-patient interactions when physicians are IMGs. Nonverbal behaviors refer to communicative behaviors in which linguistic content is not involved (Knapp et al., 2013). Some nonverbal behaviors are spontaneous, unintentional, nonvoluntary, and biologically driven (Buck & VanLear, 2002). Many nonverbal behaviors are symbolic communication. Symbolic nonverbal communication is typically intentional in creating shared meanings that are based on communicators' shared knowledge (Buck & VanLear, 2002). Nonverbal communication can also be categorized depending on whether they are speech-related

(tone of voice versus facial expressions; Mast, 2007). Communicators adopt nonverbal communication to signal intentions and interpret meanings (Burgoon et al., 2016). When the meaning conveyed by verbal communication is vague, communicators rely heavily on nonverbal behaviors to interpret messages (Mast, 2007). As communicators often have better control of their verbal messages (Choi et al., 2005), nonverbal behaviors are considered by many as more accurate and authentic in terms of the expression of communicators' inner thoughts and feelings (Andersen et al., 2006). Given the lack of vocabulary in English, IMGs who are NNSs in English sometimes draw on nonverbal behaviors to show caring, affiliation, and empathy (Jain & Krieger, 2011).

In IMG-patient interactions, IMGs' nonverbal behaviors may vary in terms of their affiliation (i.e., show caring, being friendly, and willingness to collaborate; Kiesler & Auerbach, 2003), shaping patients' evaluation of IMGs and the conversations. According to the interpersonal circumplex framework (Kiesler & Auerbach, 2003), nonverbal affiliation is enacted by behaviors such as eye contact, forward lean, open arm posture, and smiling. When engaging in nonverbal affiliation, communicators often reciprocate (e.g., mutual gaze) or mirror each other's behaviors. These nonverbal affiliative behaviors are also considered essential components of PCC (Emanuel & Emanuel, 1992). In medical encounters, physicians' nonverbal communication can influence patients' interpersonal judgment of physicians (Mast, 2007). For example, previous studies have consistently found that physician affiliative or supportive nonverbal behaviors can increase patients' evaluation of physicians' warmth and competence and the overall patient satisfaction (Kiesler & Auerbach, 2003; Kraft-Todd et al., 2017; Ruben et al., 2017). Physicians' affiliative nonverbal behaviors may also decrease patients' cognitive

functioning (Ambady, Koo, et al., 2002), increase patients' pain tolerance (Ruben et al., 2017), or even reduce medical malpractice litigations (Ambady, LaPlante, et al., 2002).

From the multiple goals perspective (Caughlin, 2010), IMGs may attempt to accomplish their goal of establishing a trusting relationship through nonverbal affiliative behaviors.

Typically, physicians engage in nonverbal affiliative behaviors to show empathy, warmth, and interest in patients (Buller & Buller, 1987). Previous studies adopting the multiple goals perspective have predominantly focused on the effects of discursive features of verbal messages on cognitive and affective outcomes (e.g., Caughlin et al., 2008, 2009; O'Keefe & Shepherd, 1987). The application of the multiple goals perspective to examine nonverbal behaviors is limited (for exceptions, see Trees, 2005; Trees & Manusov, 1998), and scholars have called for more research in this area (Trees & Manusov, 1998). The current investigation intends to extend the multiple goals framework by examining IMGs' nonverbal affiliative behaviors and patient outcomes. When IMGs engage in high affiliative nonverbal behaviors, patients may perceive them as trying to establish a trusting relationship. In addition, given the consistent findings in previous studies that nonverbal affiliative behaviors are associated with higher patients' overall satisfaction and evaluation of relational outcomes (e.g., warmth; Kiesler & Auerbach, 2003), patients' goal inference of establishing a trusting relationship may mediate the effect of IMGs' nonverbal behaviors on these outcomes. Thus, the following hypotheses are proposed,

*H10: Relative to low affiliative nonverbal behaviors, patients will report more inference of the establishing a trusting relationship goal than when IMGs engage in high affiliative nonverbal behaviors.*



*H11: The effect of nonverbal affiliation on patient evaluation of IMGs' warmth and patient satisfaction will be mediated by patients' inferred goal of establishing a trusting relationship.*

### ***Interaction Effect of IMGs' Verbal and Nonverbal Communication***

Apart from the main effect of IMGs' verbal communication and nonverbal communication on patients' inferred goals and their indirect on patient evaluation, IMGs' verbal and nonverbal strategies may also produce an interaction effect on patient goal inference and evaluation. The multiple goals perspective has mainly been tested in terms of the verbal content (e.g., O'Keefe, 1988; Scott & Caughlin, 2014), with only few studies adopting the multiple goals perspective to understand how verbal and nonverbal channels simultaneously. Trees and Manusov (1998) applied the politeness theory (Brown & Levinson, 1987) to investigate the influence of nonverbal behaviors on politeness evaluation of criticism in female friendship. They found that both verbal and nonverbal communication have independent impacts on the evaluation of politeness and that verbal and nonverbal behaviors interact in a complex manner. In situations in which communicators need to accomplish multiple goals, they are likely to produce discrepant verbal and nonverbal messages (Grebelsky-Lichtman, 2014a, 2014b). Trees and Manusove (1998) called for more studies to examine the complexity of the interaction between verbal and nonverbal communication. What remains unanswered is how IMGs' verbal and nonverbal behaviors affect patients' inference of IMGs' interaction goals. The IMG-patient context is particularly relevant to answering this theoretical question because IMGs sometimes rely on nonverbal behaviors to compensate for their linguistic incompetence (Jain & Krieger, 2011), and their verbal and nonverbal behaviors are likely to be inconsistent in time-sensitive situations (e.g., patient-provider interactions; Burgoon et al., 2016).

Verbal and nonverbal communication often co-occur to create meaning collaboratively and simultaneously (Streeck & Knapp, 1992), and therefore should not be studied in isolation (Laplante & Ambady, 2003). According to O’Keefe and Delia (1982), communicators can use separation strategies by temporarily communicating or adopting different aspects of their communication to accomplish multiple goals. As suggested earlier, IMGs may add in repairs, remedies, or phrases to mitigate the face threats imposed on patients. In addition, IMGs may use verbal communication to try to achieve some interaction goals while attending to other goals through nonverbal behaviors. Communicators sometimes verbally engage in direct criticism (i.e., task goals) while adopting a soft tone and friendly demeanor to signal respect (O’Keefe & Delia, 1982). When IMGs lack understanding of patients’ language use or small talk, they may verbally ask patients bluntly to try and achieve their goal of understanding patients. In the meantime, they may adopt high affiliative nonverbal behaviors (e.g., smile, eye contact, open arms) to signal their intention to establish a trusting relationship with patients. On the other hand, IMGs may try to understand patients and establish a trusting relationship verbally (i.e., providing rationale strategy) while engaging in low affiliative behaviors (e.g., straight face, crossed arms). From a multiple goals perspective (Caughlin, 2010), IMGs’ adoption of a different combination of verbal and nonverbal behaviors may generate different levels of patient inferred goals, which may in turn predict patient evaluation. That is to say, IMGs will receive a more positive evaluation if they can engage in verbal and nonverbal behaviors that cause patients to infer desirable interaction goals.

Nevertheless, researchers have argued that the relationship between communicators’ verbal and nonverbal behaviors is far more complex than complementing each other (Trees & Manusov, 1998). When IMGs lack understanding of patients, they may engage in inconsistent

verbal-nonverbal behaviors, leading to different levels of goal inference and patient evaluation. Individuals rely on the congruence of others' behaviors to interpret meanings in communication (Weisbuch et al., 2010). In many cases, communicators' nonverbal behaviors send cues that are consistent with the meaning of their verbal communication; however, there are also cases in which communicators' verbal and nonverbal behaviors are inconsistent (Gillis & Nilsen, 2017), which is known as discrepant communication (Grebelsky-Lichtman, 2014a). For example, a person may compliment their conversational partner's outfit but say it with a frown. As individuals' age increases, they are able to identify the discrepancy between verbal and nonverbal behaviors (Rotenberg et al., 1989). As a result of incongruent verbal-nonverbal behaviors, communicators are likely to send mixed messages to their conversational partners (Gorawara-Bhat et al., 2017). When speakers display inconsistent verbal-nonverbal behaviors, their conversational partners may form a negative impression of them (Weisbuch et al., 2010) or perceive them as insincere or deceptive (Heinrich & Borkenau, 1998). For example, in parent-adolescent communication, parents' inconsistent verbal and nonverbal behaviors about alcohol consumption may also induce adolescents' dissonance in inferring their parents' attitude towards alcohol use (Kam et al., 2017).

Discrepant verbal-nonverbal profile (DVNP) theory, an interpersonal communication theory proposed recently (Grebelsky-Lichtman, 2021), can be applied to understanding the interplay of IMGs' verbal and nonverbal messages. DVNP posits that discrepant verbal and nonverbal communication manifests in different forms, and not all discrepancies will be perceived in a negative light. One form of discrepant verbal-nonverbal profile is *leakage discrepancy*, in which the communicator engages in positive verbal communication and negative nonverbal communication (Grebelsky-Lichtman, 2021). When inconsistency between verbal and

nonverbal behaviors occurs, individuals view nonverbal behaviors as a more reliable source to infer their conversational partners' true intentions (Burgoon et al., 2016; Rotenberg et al., 1989), and thus leakage discrepancy is typically perceived as negative (Grebelsky-Lichtman, 2014a). The other form of discrepancy is *adaptive discrepancy*, in which the communicator adopts negative verbal communication and positive nonverbal communication (Grebelsky-Lichtman, 2021). Unlike the leakage discrepancy, adaptive discrepancy is a constructive communication pattern that improves cooperation in interpersonal communication (Grebelsky-Lichtman, 2014a). When communicators engage in negative verbal communication and positive nonverbal communication, their nonverbal communication can mitigate the threats posed by the verbal communication channel and establish a more positive image (Grebelsky-Lichtman, 2021).

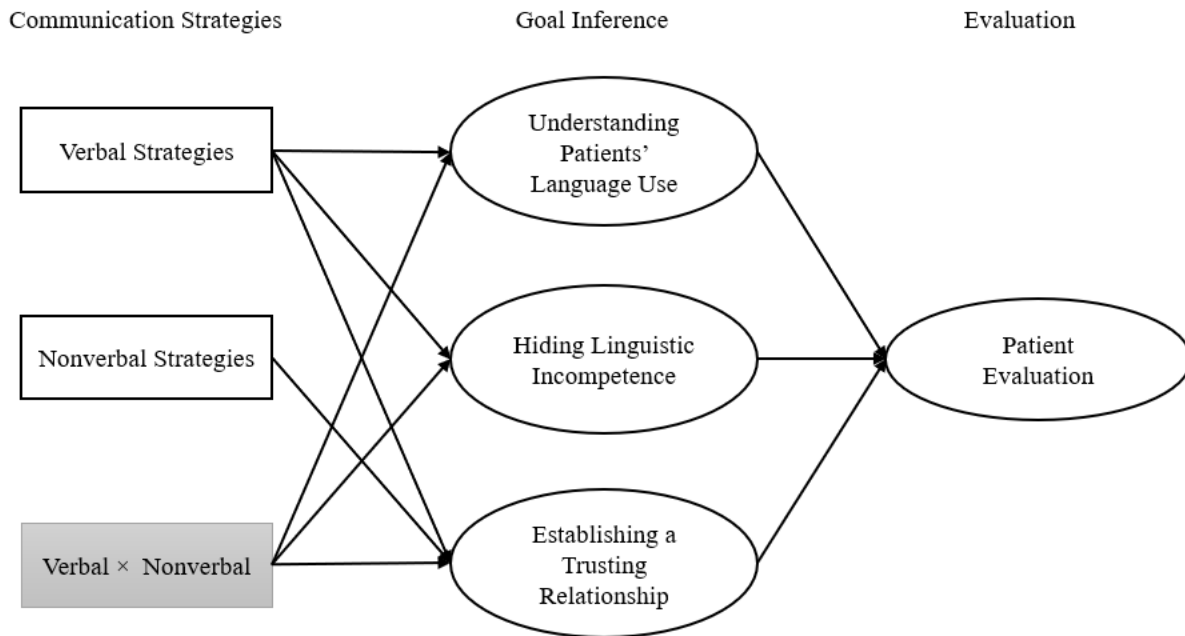
The multiple goals perspective (e.g., O'Keefe & Delia, 1982) and DVNP (Grebelsky-Lichtman, 2021) provide somewhat distinct perspectives regarding the effect of verbal-nonverbal inconsistency. From the multiple goals perspective, when encountering IMGs who engage in inconsistent verbal-nonverbal behaviors, patients may report multiple goals as more important to IMGs and rate IMGs and conversations more positively. For example, IMGs who ask patients to clarify the meanings bluntly but engage in high affiliative nonverbal behaviors are likely to receive a more favorable patient evaluation than IMGs who ask for clarifications bluntly but engage in low affiliative behaviors. From the multiple goals perspective, discrepancies between verbal and nonverbal communication are constructive because one channel can compensate for goals that are not accomplished through another communication channel. Nevertheless, DVNP distinguishes different forms of discrepancies and argues that the two types of discrepancies are perceived differently. In the current study, leakage discrepancy manifests as IMGs' use of the verbal strategy of providing rationale and low affiliative nonverbal behaviors (i.e., positive

verbal and negative nonverbal behaviors); adaptive discrepancy manifests as IMGs' engagement of the feigning comprehension and high affiliative nonverbal behaviors (i.e., negative verbal and positive nonverbal behaviors). From the DVNP perspective, the combination of providing rationale and low affiliative nonverbal behaviors might be perceived as insincere, whereas the high affiliative nonverbal behaviors could mitigate the negative effect of feigning comprehension. There might be an interaction effect between IMGs' verbal and nonverbal strategies when dealing with their lack of comprehension on patient evaluation, but how the two channels interact with each other needs to be explored. Further, IMGs' verbal and nonverbal consistency may also influence how patients perceive what IMGs want to accomplish in the interactions. The following research questions are proposed,

*RQ5: When dealing with their lack of comprehension, will IMGs' verbal and nonverbal strategies interact to influence patients' goal inference (e.g., understanding patients' language use, establishing a trusting relationship, hiding linguistic incompetence)? If yes, how do they interact?*

*RQ6: When dealing with their lack of comprehension, will IMGs' verbal and nonverbal strategies interact to influence patient evaluation (i.e., linguistic competence, cultural competency, communication competence, physician expertise, warmth, patient satisfaction) indirectly through patient inferred goals (i.e., understanding patients' language use, establishing a trusting relationship, hiding linguistic incompetence)?*

To provide a clear visual representation of the hypotheses and research questions, the hypothesized model is presented in Figure 1.



**Figure 1.** The Proposed Model

## CHAPTER 3: METHOD

### Research Design and Stimulus Development

A 3 (verbal strategies)  $\times$  2 (nonverbal strategies)  $\times$  2 (verbal message variations) full factorial online experiment was conducted to test the hypotheses and answer the research questions. The three verbal strategies conditions were as follows: *Being blunt* (Condition I), *feigning comprehension* (Condition II), and *providing rationale* (Condition III). The three verbal conditions were kept consistent except for one sentence in which the IMG asked/not asked for idiom clarifications. The two nonverbal conditions were high and low affiliative nonverbal behaviors. In the high affiliative condition, the IMG engaged in behaviors to signal his willingness to facilitate connections, such as smiling, using soft tones, engaging in open arm posture, and leaning forward; in the low affiliative condition, the IMG had fewer facial expressions, used cold tones, crossed arms, and leaned back (Kiesler & Auerbach, 2003). To reduce threats to internal validity and increase message generalizability, the current investigation adopted a replicated treatment comparisons/multiple-message design (Jackson, 1992; O’Keefe & Hoeken, 2021). Two wording variations were used for each of the six conditions when crossing verbal with nonverbal strategies, labeled “out of sorts” and “frog in the throat.” Specifically, the patient’s use of two different idioms (i.e., “out of sorts” and “frog in the throat”) was used to prompt the physician’s three verbal strategies, and the IMG’s verbal messages were varied across two scenarios to represent the same verbal strategies (e.g., “What do you mean by...”, “Could you explain what you mean by...”).

The stimulus messages were video recordings of interactions between an IMG and a U.S. patient. Two professional actors were recruited to perform the roles of the IMG and the patient. The role of IMG was performed by a South Asian man born in the U.S. The South Asian actor

had experience performing as an Indian immigrant and was instructed to speak with an Indian accent. The role of patient was performed by a White American man. The two actors were recruited because physicians from South Asia make up the largest portion of the IMG population (Murphy, 2018), and White patients constitute 76% of the U.S. population (United States Census Bureau, 2020). Given that the purpose of the current study is not to untangle gender dynamics between physicians and patients, and IMGs who are men outnumber IMGs who are women in the U.S. (Arnhart et al., 2017), only actors who were men were hired to perform the roles in the interaction to reduce the influence of confounds. The gender of the IMG and the patient was controlled as concordant, as gender discordant pairs might introduce one more layer of complexity and potential threats to the validity of the study (Thornton et al., 2011).

To increase the external validity, the videos were filmed in an observation room at a teaching hospital. The observation room simulates a doctor's office and is often used for training resident physicians. To reduce the potential influence of the patient's identity and nonverbal behaviors on participants' evaluation and make the scenarios more realistic, the videos were filmed over the patient's shoulder, with the IMG facing the camera. During the interaction, the White patient used a U.S. idiom (i.e., "out of sorts" or "frog in my throat") that was likely to be unknown to IMGs to describe their health condition. The IMG used one of the three verbal conditions to deal with his lack of understanding and engaged in either high or low affiliative nonverbal behaviors. The idioms were pilot tested with American and international undergraduate students to ensure that the idioms were familiar to American students and unfamiliar to international students. Both the verbal messages and the videos were pilot tested with undergraduate students to solicit feedback on realism and clarity (see Appendix B for the pilot study questionnaire).



## **Procedures and Participants**

Six hundred and twenty-seven participants recruited from Prolific (an online research panel) participated in the online experiment. As part of registering an account on Prolific, participants fill out a series of demographic questions, so that demographic information can be used to pre-screen participants. For the current study, the following questions were selected on Prolific to pre-screen participants: Participants needed to (a) be at least 18 years old, (b) be born and grow up in the United States, (c) speak English as their first language, and (d) self-identify as White men (see Appendix C for the pre-screening questionnaire). Additionally, given that the message manipulation contained videos depicting interactions between IMGs and patients, participants were asked to use either a tablet or a desktop that allowed for audio to access the study. The devices and technology requirements were displayed in the study description.

Participants who met the study eligibility were directed to participate in the online experiment administered on the Qualtrics survey platform. Upon signing the online consent form, participants answered demographic questions (e.g., age, first language, race) to verify they met the pre-screening criteria selected on Prolific. Then, participants were randomly assigned to watch one of the recorded interactions and were instructed to imagine that they were the patient in the video. As the lengths of the videos were between 20 to 30 seconds, a timer was added to the page that displayed the video, such that participants were only able to move forward after staying 20 seconds on that page and were automatically advanced to the next page after 45 seconds. Following the presentation of the video, participants answered the questions measuring their inferred goals and patient evaluation. Then, a series of validity check questions were asked to ensure the data quality and validity of the online experiment (see Appendix D for the questionnaire). Two attention check questions were displayed to participants throughout the

questionnaire (e.g., “This is an attention check question. Please choose *somewhat agree*”) to screen out distractors and bots. Participants who completed the study and reported the correct completion code were thanked and compensated two dollars and forty cents for their time and effort. The study was exempted from the university Institutional Review Board (IRB#: 22671).

The initial sample was comprised of responses from 627 participants. Responses from participants were removed from the dataset if (a) the progress was less than 80% of the study ( $n = 23$ ), (b) responses to screening questions did not match the requirements of the study ( $n = 21$ ), (c) the time spent on the study was less than a third of the median ( $Median = 658$  seconds;  $n = 5$ ) or more than an hour ( $n = 3$ ), (d) participants took the study more than once ( $n = 1$ ), (e) or participants failed at least one attention check question ( $n = 5$ ). The steps taken to ensure data quality resulted in a final sample of 569 participants.

Participants’ age ranged from 18 to 84 years old ( $M = 43.16$ ,  $SD = 14.66$ ). All participants in the final sample were White men, and most participants identified themselves as non-Hispanic (99%). Some participants reported receiving a bachelor’s degree (43.1%), with 19.5% receiving some college education, 19.3% having a master’s or professional degree or higher, 10.7% having a high school diploma or less, and 7.4% having an associate degree.

## **Measures**

First, as the scales for measuring goal inferences and linguistic competence were created for this study, the sample was split into two subsamples by message topics, in which the first sample was analyzed through exploratory factor analyses (EFAs), and the second sample was analyzed through confirmatory factor analyses (CFAs). Specifically, EFAs were conducted in *R Studio* using *psych* package (Revelle, 2022) to explore factor structures in the “out of sorts”

sample. CFAs were conducted in *R Studio* using *lavaan* package (Rosseel, 2012) on the “frog in my throat” sample to confirm the structure established through the EFAs.

Second, for scales that had already been validated (e.g., communication competence, patient satisfaction), a series of multi-group CFAs were conducted in *R Studio* using *lavaan* package to confirm factor structures of each individual scale and its invariance across two message topics (Rosseel, 2012). Specifically, measurement invariance was performed at the configural (i.e., factor structure), metric (i.e., factor loading), and scalar (i.e., intercept) level (Chen, 2007). Three chi-square difference tests were performed to compare the three nested models. As chi-square difference tests were sensitive especially when a large sample is recruited, Chen (2007) advocates using CFI change as the main criteria to establish measurement invariance; Typically, the assumption of measurement invariance can be rejected if CFI change across models is greater than .01 and RMSEA change is greater than .015 (Chen, 2007).

When conducting CFAs and multigroup CFAs, Full Information Maximum Likelihood estimation (FIML; Graham, 2009) was applied to deal with missing data, and Maximum Likelihood with Robust Standardized Errors (MLR) was used to handle data non-normality. Fit statistics (i.e., CFI, RMSEA, SRMR) are reported and interpreted to assess scale unidimensionality; Chi-square significance tests are reported but not interpreted because they are sensitive to sample size and data non-normality (Bollen, 1989). A good model fit should have a  $CFI \geq .95$ ,  $RMSEA \leq .06$ , and  $SRMR \leq .08$  (Hu & Bentler, 1999); an acceptable model fit should have a  $CFI \geq .90$ ,  $RMSEA \leq .08$ , and  $SRMR \leq .09$  (Holbert & Stephensen, 2008). Descriptive statistics are reported in Table 2-1, Table 2-2, and Table 2-3. Measurement invariance results, such as fit indices and model comparison results for all the established measures, are reported in Table 3. All measures were invariant by the CFI change criteria (Chen, 2007).

**Table 2a.** Observed Means of Verbal and Nonverbal Experimental Conditions.

		UndersGI	UndersHealthGI	HideGI	RelGI	Comm Comp	LingComp
Verbal	Aff	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
Blunt	High Aff	6.17(.81)	6.25(.86)	1.76(.79)	5.38(.98)	6.08(.89)	5.81(.90)
	Low Aff	6.11(.73)	5.96(1.08)	1.89(.94)	4.78(1.39)	5.81(1.04)	5.75(.90)
Feign	High Aff	5.65(1.10)	5.97(.79)	3.37(1.41)	5.25(1.08)	5.57(1.20)	5.36(1.12)
	Low Aff	4.81(1.59)	5.12(1.57)	3.73(1.35)	4.11(1.51)	5.16(1.35)	5.13(1.08)
Rationale	High Aff	6.41(.87)	6.08(.94)	1.57(.90)	5.58(1.64)	6.09(.98)	5.64(.91)
	Low Aff	6.42(.67)	5.96(1.13)	1.59(.73)	5.19(1.05)	5.91(1.04)	5.66(.97)
Total		5.92(1.16)	5.87(1.15)	2.33(1.38)	5.05(1.30)	5.77(1.14)	5.56(1.01)

**Table 2b.** Observed Means of Verbal and Nonverbal Experimental Conditions Continued.

		Culture_ Know	Culture_ Aware	Culture_ Skill	Expert	Warm	Satis
Verbal	Aff	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
Blunt	High Aff	4.68(1.27)	5.26(.86)	5.75(1.20)	6.08(.11)	5.87(.87)	5.82(1.21)
	Low Aff	4.68(1.23)	4.96(1.06)	5.49(1.33)	5.80(.11)	4.94(1.37)	5.10(1.56)
Feign	High Aff	4.39(1.35)	4.69(1.10)	5.26(1.38)	5.57(.11)	5.63(.96)	5.11(1.54)
	Low Aff	4.07(1.37)	4.28(1.28)	4.75(1.53)	5.16(.11)	4.15(1.60)	3.99(1.64)
Rationale	High Aff	4.44(1.26)	5.47(.93)	5.75(1.13)	6.09(.11)	6.12(.80)	5.87(1.32)
	Low Aff	4.23(1.27)	5.28(.96)	5.62(1.19)	5.91(.11)	5.33(1.14)	5.47(1.42)
Total		4.41(1.31)	4.99(1.18)	5.43(1.35)	5.77(1.13)	5.34(1.33)	5.22(1.58)

**Table 2c.** Observed Means of Verbal and Nonverbal Experimental Conditions Continued.

		Realism	Parti Unders	RaceSimi	Gender Simi	Political Orient	Xeno
Verbal	Aff	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
Blunt	High Aff	5.62(1.24)	5.21(1.62)	3.80(2.10)	6.29(1.10)	58.91(31.81)	1.96(1.03)
	Low Aff	5.63(1.28)	5.23(1.69)	4.31(2.20)	6.44(1.08)	64.20(27.38)	1.71(.87)
Feign	High Aff	5.46(1.20)	5.72(1.16)	4.20(2.03)	6.46(.87)	63.76(28.43)	1.75(.86)
	Low Aff	4.95(1.54)	5.43(1.51)	4.24(2.09)	6.38(1.05)	61.73(30.03)	1.94(1.13)
Rationale	High Aff	5.59(1.23)	6.21(1.00)	3.84(2.09)	6.37(.77)	59.83(30.23)	1.83(1.04)
	Low Aff	5.56(1.16)	6.22(.90)	4.19(2.13)	6.46(.81)	61.49(30.06)	1.90(.93)
Total		5.46(1.30)	5.67(1.41)	4.10(2.11)	6.40(.95)	60.96(28.93)	1.85(.98)

**Table 2c (continued).**

*Note.* Aff = Affiliative Nonverbal Behaviors; UndersGI = Understanding Patient Language Use Goal Inference; UndersHealthGI = Understand Patient Health Condition Goal Inference; HideGI = Hiding Linguistic Incompetence Goal Inference; RelGI = Establishing a Trusting Relationship Goal Inference; CommComp = Communication Competence; LingComp = Linguistic Competence; Culture\_Know = Cultural Knowledge; Culture\_Aware = Cultural Awareness; Culture\_Skill = Cultural Skills; Expert = Expertise; Warm = Warmth; Satis = Satisfaction; PartiUnders = Participant Understanding of Idioms; RaceSimi = Racial Similarity; GenderSimi = Gender Similarity; PoliticalOrient = Political Orientation; Xeno = Xenophobia.

**Table 3.** Measurement Invariance Test Results for Established Measures.

Variable	Model	$\chi^2$ ( <i>df</i> )	CFI	RMSEA (90% CI)	SRMR	Model Compared to	$\Delta\chi^2$ ( $\Delta df$ )	$\Delta CFI$
CommComp	M1: Configural Invariance	25.16(10)**	.99	.073 [.045, .102]	.017	M2	3.30(4)	.00
	M2: Metric Invariance	29.66(14)***	.99	.063 [.037, .089]	.028	M3	3.98(4)	.00
	M3: Scalar Invariance	34.75(18)*	.99	.057 [.032, .081]	.030	M1	7.23(8)	.00
CulturalComp	M1: Configural Invariance	83.40(48)**	.99	.051 [.034, .067]	.041	M2	26.67(8)***	.01
	M2: Metric Invariance	107.74(56)***	.98	.057 [.042, .072]	.066	M3	6.50(5)	.00
	M3: Scalar Invariance	114.24(61)***	.98	.055 [.041, .069]	.067	M1	31.87(13)**	.01
Expert	M1: Configural Invariance	26.95(18)	.99	.042 [.013, .064]	.010	M2	6.40(5)	.00
	M2: Metric Invariance	33.70(23)	.99	.040 [.014, .062]	.027	M3	3.92(5)	.00
	M3: Scalar Invariance	38.96(28)	.99	.037 [.007, .058]	.028	M1	10.58(10)	.00
NoHighComp	M1: Configural Invariance	532(860.45)***	.97	.047 [.041, .052]	.041	M2	34.63(21)*	.00
	M2: Metric Invariance	553(895.08)***	.97	.047 [.041, .052]	.051	M3	18.80(18)	.00
	M3: Scalar Invariance	571(914.80)***	.97	.046 [.041, .051]	.051	M1	54.07(39)	.00
HighComp	M1: Configural Invariance	888.58(536)***	.97	.048 [.043, .053]	.046	M2	36.06(24)	.00
	M2: Metric Invariance	924.54(560)***	.97	.048 [.043, .053]	.056	M3	17.73(17)	.00
	M3: Scalar Invariance	942.65(577)***	.97	.047 [.042, .052]	.056	M1	54.09(41)	.00
Warm	M1: Configural Invariance	2.73(4)	1.00	.000 [.000, .049]	.005	M2	1.24(3)	.00
	M2: Metric Invariance	4.19(7)	1.00	.000 [.000, .031]	.015	M3	1.07(3)	.00
	M3: Scalar Invariance	5.54(10)	1.00	.000 [.000, .018]	.016	M1	2.34(6)	.00
Satis	M1: Configural Invariance	6.21(4)	1.00	.044 [.000, .096]	.003	M2	1.91(3)	.00
	M2: Metric Invariance	8.67(7)	1.00	.029 [.000, .076]	.012	M3	0.18(3)	.00
	M3: Scalar Invariance	9.46(10)	1.00	.000 [.000, .057]	.012	M1	2.12(6)	.00
Xeno	M1: Configural Invariance	119.91(52)***	.96	.068 [.057, .078]	.034	M2	2.76(8)	.00
	M2: Metric Invariance	124.16(60)***	.96	.061 [.051, .072]	.040	M3	8.55(8)	.00
	M3: Scalar Invariance	136.93(68)***	.96	.060 [.050, .070]	.041	M1	9.31(16)	.00

**Table 3 (continued).**

*Note.* CommComp = Communication Competence; CulturalComp = Cultural Competency; Expert = Expertise; NoHighComp = No Higher-order Competence; HighComp = Higher-order Competence; Warm = Warmth; Satis = Satisfaction; Xeno = Xenophobia; \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ; Although the Chi-square difference tests on cultural competence when comparing configural and metric variance and comparing configural and scalar variance were statistically significant, Chen (2007) recommended using CFI change as the main criteria to determine measurement invariance, as Chi-square difference tests are sensitive especially when the sample size is large.

## ***Goal Inferences***

Twenty-four items were created to assess participants' beliefs about IMG's interaction goals. Each goal inference was measured using a 7-point Likert-type scale (1 = *strongly disagree*, 7 = *strongly agree*). An EFA was conducted on the first half of the sample (i.e., "out of sorts" topic) to investigate the factor structure of goal inferences. The EFA started with a parallel analysis in *R Studio* using *paran* package (Dinno, 2018). Horn's (1965) parallel analysis, which compares the eigenvalues for the sample data (i.e., unadjusted eigenvalues) and the simulated data (i.e., random eigenvalues), has been established as one of the most accurate methods for determining the number of factors retained (Zwick & Velicer, 1986). Parallel analysis results indicated a four-factor solution. An EFA with maximum likelihood was conducted by setting the number of factors as four and selecting the oblique rotation because the inferred goals were likely to be correlated. Table 4 shows item loadings on each factor. Considering literature on physician-patient communication and the context, the first factor, which consisted of six items, represented *establishing a trusting relationship goal inference* (Cronbach's  $\alpha = .97$ ). The second factor, which was comprised of six items, was *hiding linguistic incompetence goal inference* (Cronbach's  $\alpha = .95$ ). The third factor consisted of six items, representing *understanding patient health conditions goal inference* (Cronbach's  $\alpha = .96$ ). The items referencing the understanding patient health condition goal were included in the factor analysis to determine goal inference factor structure (e.g., to ensure that it is distinct from understanding patient language use), but this variable is not used in hypotheses or results, only as a control for the factor structure. The fourth factor, which had six items, measured *understanding patient language use goal inference* (Cronbach's  $\alpha = .95$ ). To confirm the factor structure established by the EFA, a CFA was conducted on the second half of the sample (i.e., "frog in my throat" topic), suggesting good



model fit,  $\chi^2(246) = 474.95$ ,  $p < .001$ , CFI = .95, RMSEA = .06 [90% CI = .051, .064], SRMR = .04.

**Table 4.** EFA Results for Goal Inferences

Item	EFA			
	Factor 1	Factor 2	Factor 3	Factor 4
1				.89
2				.90
3				.72
4				.87
5				.82
6				.83
7			.86	
8			.77	
9			.90	
10			.92	
11			.87	
12			.90	
13		.92		
14		.92		
15		.90		
16		.91		
17		.88		
18		.82		
19	.90			
20	.97			
21	.98			
22	.90			
23	.89			
24	.83			

**Table 4 (Continued)**

<b>Unadjusted Eigenvalue</b>	<b>11.05</b>	<b>3.64</b>	<b>2.60</b>	<b>1.84</b>
<b>Variance Explained</b>	<b>.34</b>	<b>.30</b>	<b>.33</b>	<b>.28</b>

*Note.* Results in this table were standardized loadings reported from pattern matrix. Loadings less than .3 are not included in the table.

### *Patient Evaluation*

**Linguistic Competence.** Although measures exist to assess second-language learners' linguistic competence (e.g., reading comprehension, Videsot et al, 2012), no measures exist for conversational partners' *evaluation* of a second-language learner's linguistic competence. Thus, a seven-item Likert-type scale was created to measure patients' subjective perception of IMGs' linguistic competence based on Valeeva et al.'s (2016) definition. A sample item was "Dr. Patel knew how to pronounce words in English" (1 = *strongly disagree*, 7 = *strongly agree*). An EFA was conducted to explore the factor structure of the linguistic competence scale using the "out of sorts" sample. Results of the parallel analysis suggested a one-factor solution. Results of the EFA with the oblique rotation are displayed in Table 5. Item 2 loaded moderately (.40) on the factor and its face validity was questionable (i.e., serving as an attention/validity check rather than measuring linguistic competence). Thus, Item 2 was dropped for the second round of EFA. The parallel analysis was rerun with six items, suggesting a one-factor solution. As shown in Table 5, the remaining items loaded on one factor. A CFA was conducted on the "frog in my throat" sample to confirm the factor structure suggested by the EFA. The CFA results unacceptable model fit,  $\chi^2(9) = 32.18, p < .001, CFI = .97, RMSEA = .09$  [90% CI = .065, .128], SRMR = .02. Modification indices suggested correlating the residuals of Item 6 and Item 7. The modified model had good model fit,  $\chi^2(8) = 7.87, p = .446, CFI = 1.00, RMSEA = .00$  [90% CI = .000, .064], SRMR = .01. The developed scale was internally consistent (Cronbach's  $\alpha = .90$ ).

**Table 5.** EFA Results for Linguistic Competence

		1 <sup>st</sup> EFA	2 <sup>nd</sup> EFA
Item		Factor	Factor
1	Dr. Patel knew how to pronounce words in English.	.67	.67
2	Dr. Patel was knowledgeable about idioms and slang in English.	.40	--
3	Dr. Patel had good English vocabulary.	.82	.82
4	Dr. Patel knew how to use English words in conversations with patients.	.86	.86
5	Dr. Patel's English vocabulary was limited. [R]	.58	.57
6	Dr. Patel was a competent English speaker.	.89	.89
7	Dr. Patel spoke English very well.	.91	.91
<b>Unadjusted Eigenvalue Variance Explained</b>		<b>3.97</b>	<b>3.79</b>
		<b>.57</b>	<b>.64</b>

*Note.* Results in this table were standardized loadings reported from the pattern matrix. Loadings less than .3 are not included in the table; [R] indicates reverse coded items.

**Communication Competence.** Communication competence was measured using a 7-point semantic differential scale adapted from Caughlin et al. (2009) and Donovan-Kicken et al. (2013). The scale consisted of five items measuring effectiveness and appropriateness of communication competence, including *rude-polite*, *ineffective-effective*, *unsophisticated-sophisticated*, *inappropriate-appropriate*, *insensitive-sensitive*. The measure was invariant across two topic conditions, and the scale was internally consistent (Cronbach's  $\alpha = .93$ ).

**Cultural Competency.** A 7-point Likert-type scale consisting of nine items (Lucas et al., 2008) was adapted to measure patients' evaluation of the IMG's cultural competency. A sample item was "how knowledgeable do you feel that Dr. Patel [the name of the physician in the video] is about your culture?" (1 = *not at all*, 7 = *very knowledgeable*). Previous studies (e.g., Lucas et al., 2008) suggested that the scale of cultural competency was comprised of three sub-dimensions, including cultural knowledge, cultural awareness, and cultural skills. Thus, cultural competency was modeled as a second-order factor consisting of three first-order factors (i.e., cultural knowledge, cultural awareness, cultural skills). Although the chi-square difference tests comparing the configural and metric and comparing the configural and scalar invariance were

statistically significant, Chen (2007) recommended using CFI change as the main criteria to establish measurement invariance because of the sensitivity of chi-square difference tests. Thus, by this criterion, the measure was invariant across two topic conditions. The three sub-scales, including cultural knowledge (Cronbach's  $\alpha = .96$ ), cultural awareness (Cronbach's  $\alpha = .77$ ), and cultural skills (Cronbach's  $\alpha = .91$ ), were internally reliable.

**Physician Expertise.** A 7-point semantic differential scale adapted from Perrault et al. (2022) was used to measure participants' perception of the physician's expertise. The scale was comprised of six items, including *not an expert/expert*, *inexperienced/experienced*, *incompetent/competent*, *unqualified/qualified*, *unskilled/skilled*, *stupid/smart*. The measure was invariant across topic conditions, and the scale was internally consistent (Cronbach's  $\alpha = .97$ ).

**Higher-Order Competence.** RQ1 asked whether participants would perceive IMGs' linguistic competence, communication competence, cultural competency, and physician expertise differently and whether these four constructs were the sub-dimensions of IMGs' overall competence. To answer RQ1, two sets of measurement invariance tests were conducted. In the first set, linguistic competence, communication competence, and physician expertise were modeled as three latent variables, with items measuring each construct loading on the corresponding latent variable. Cultural competency was modeled as a second-order latent variable, which was composed of three first-order latent variables, including cultural knowledge, awareness, and skills. The models were invariant at configural, metric, and scalar levels. In the second set of invariance tests, the four latent variables were loaded on a third-order latent variable, known as competence. The second sets of models were also invariant across two topic conditions. Further, the two nested scalar models were compared. The first model was superior to the second model,  $\chi^2_{\text{diff}} = 25.42$ ,  $df_{\text{diff}} = 2$ ,  $p < .001$ , suggesting that participants perceived the

four aspects of competence in distinct ways and the four latent variables can be modeled as individual constructs.

**Physician Warmth.** Patients' perception of physician warmth was measured by a 7-point Likert-type scale adapted from Cuddy et al. (2009). The scale, including four items, asked participants to evaluate the extent to which the IMG was warm, good-natured, friendly, and sincere (1 = *strongly disagree*, 7 = *strongly agree*). The measure was invariant across two topic conditions, and the scale was internally consistent (Cronbach's  $\alpha = .95$ ).

**Patient Satisfaction.** A 7-point semantic differential scale that included four items was used to measure patient satisfaction (Richmond et al., 1998). Participants were asked to evaluate their overall satisfaction with the visit. Anchors included *dissatisfied-satisfied*, *displeased-pleased*, *uncomfortable-comfortable*, *unhappy-happy*. The measure was invariant across two topics and the scale was internally consistent (Cronbach's  $\alpha = .98$ ).

### ***Validity Checks***

**Perceived Realism.** To ensure the external validity of the current study, two items adapted from Caughlin et al. (2009) and Donovan-Kicken et al. (2013) were used to measure participants' perceived realism of the recorded interactions. Participants responded to a 7-point Likert-type scale (i.e., To what extent was the interaction presented in the video similar to a real doctor-patient interaction? 1 = *very different*, 7 = *very similar*; How realistic was the scenario? 1 = *very unrealistic*, 7 = *very realistic*). CFA was not conducted because the scale only had two items and was under-identified. The scale was internally consistent (*Item correlation* = .84). The overall perceived realism was above average in all conditions (see Table 2-3). A two-way analysis of variance (ANOVA) was performed on perceived realism. The results suggested that there was a significant main effect of verbal conditions on participants' perceived realism,  $F(2,$

563) = 5.88,  $p = .003$ , such that being blunt ( $M = 5.61$ ,  $SD = 1.27$ ) and providing rationale ( $M = 5.58$ ,  $SD = 1.19$ ) were perceived as significantly more realistic than feigning comprehension ( $M = 5.20$ ,  $SD = 1.40$ ). The main effect of nonverbal conditions was non-significant,  $F(1, 563) = 3.13$ ,  $p = .078$ , and the interaction effect of verbal and nonverbal conditions was non-significant,  $F(2, 563) = 2.22$ ,  $p = .109$ .

**Participants' Understanding.** To ensure the validity of the manipulation, five items were created to assess whether participants understood the situation as manipulated. A 7-point Likert-type scale was used to assess participants' understanding of the situation (e.g., Dr. Patel did not understand the phrase "out of sorts", 1 = *strongly disagree*, 7 = *strongly agree*). The parallel analysis results suggested a one-factor solution. EFA was performed with oblique rotation on the "out of sorts" sample. The pattern matrix (Table 6) suggested that the five items loaded strongly on one factor. A CFA was conducted on the "frog in my throat" sample, indicating acceptable model fit,  $\chi^2(5) = 1.86$ ,  $p = .869$ , CFI = 1.00, RMSEA = .00 [90% CI = .000, .000], SRMR = .00. The scale was internally reliable (Cronbach's  $\alpha = .95$ ).

**Table 6.** EFA Results for Participant Understanding

Item		Factor
1	Dr. Patel did not understand the phrase "out of sorts"/ "frog in my throat".	.94
2	Dr. Patel was unsure about the meaning of the phrase "out of sorts"/ "frog in my throat".	.95
3	Dr. Patel did not know how to interpret the phrase "out of sorts"/ "frog in my throat".	.90
4	Dr. Patel was confused about the phrase "out of sorts"/ "frog in my throat".	.94
5	Dr. Patel was unable to understand what "out of sorts"/ "frog in my throat" means.	.73
<b>Unadjusted Eigenvalue</b>		<b>4.01</b>
<b>Variance Explained</b>		<b>.80</b>

*Note.* Results in this table were standardized loadings reported from the pattern matrix.

**Perceived Similarity.** As the study asked participants to imagine themselves as the patient in the video, participants recruited in the study were supposed to feel identified with the patient depicted in the video. Three items developed by Street et al. (2008) were used to assess perceived racial similarity (e.g., The patient and I are \_\_\_\_\_ in terms of race, 1 = *very different*, 7 = *very similar*). As the model was just-identified, fit statistics for CFA were not available. The scale measuring perceived racial similarity was internally consistent (Cronbach's  $\alpha = .98$ ). However, participant perceived racial similarity was only slightly above the mid-point ( $M = 4.10$ ,  $SD = 2.11$ ), which might be explained by the fact that the patient in the video was not facing the camera and was wearing a surgical mask, as was federally required during physician appointments in early 2022 because of the COVID-19 pandemic. Two items were developed to measure gender similarity (e.g., The patient and I have \_\_\_\_\_ gender backgrounds, 1 = *very different*, 7 = *very similar*). EFA was not conducted given the small number of items. The two-item scale was internally consistent, and participants perceived themselves as similar to the patient in the video in terms of gender backgrounds ( $M = 6.40$ ,  $SD = .95$ , *Item correlation* = .72).

### ***Potential Covariates***

**Participants' Demographics.** Participants' age and political orientation (1 = *conservative*, 100 = *liberal*) were measured and used as covariates in the main analysis.

**Xenophobia.** Xenophobia refers to "a negative attitude towards, or fear of, individuals or groups of individuals who are in some sense different (real or imagined) from oneself, or the group(s) one belongs to" (Hjerm, 2001, p. 43). As IMGs are foreigners and patients' existing perceptions of foreigners from certain countries might influence how they evaluate them, patients' xenophobia might be a significant predictor of their evaluation of IMGs and the overall patient satisfaction. Therefore, patients' xenophobia towards immigrants from India might be a

potential covariate. Xenophobia was measured using a 7-point Likert-type scale adapted from van der Veer et al. (2011). The scale contained nine items, such as “I doubt that immigrants from India will put the interests of this country first” (1 = *strongly disagree*, 7 = *strongly agree*). The scale was invariant across two topic conditions and was internally consistent ( $M = 1.85$ ,  $SD = .98$ , Cronbach’s  $\alpha = .94$ ).



## CHAPTER 4: RESULTS

### **Preliminary Analyses**

Before performing the main analysis to test the hypotheses and answer the research questions, I conducted a series of preliminary analyses to explore the data. Specifically, I conducted a missing value analysis to explore the missing value pattern and checked the assumptions of univariate and multivariate normality (i.e., skewness, kurtosis). A bivariate correlation analysis was conducted to examine the correlation between variables used in the main analysis.

### ***Missing Data***

Of the 569 cases (i.e., participants' responses), 74 cases (13.01%) had at least one missing value; 59.34% of the items had at least one missing value. Overall, only .21% of the cells were missing. A Little's MCaR test was performed to further analyze the missing pattern. Results suggested that the data was missing completely at random,  $\chi^2(3598) = 3705.70, p = .10$ . As less than 5% of the data were missing, and the data were missing completely at random, Full Information Maximum Likelihood (FIML) was used to deal with missing data.

### ***Data Normality***

First, I examined skewness and kurtosis indices of the variables that were used in the main analysis to check the assumption of univariate normality (see Table 6). Although no consensus has been reached regarding the acceptable skewness and kurtosis indices, corrective action needs to be taken if the data is extremely skewed (skewness index  $> 3$ ) or leptokurtic (kurtosis index  $> 10$ ; Kline, 2011). All variables met the assumption of univariate normality, and no data transformation was performed at the univariate level. Items used for the main analysis were checked for multivariate normality. A Mardia's test was performed in *R Studio* using *psych*

package. Results suggested that the data violated the assumption of multivariate normality (Mardia's kurtosis = 134.20,  $p < .001$ ). Thus, Maximum Likelihood with Robust Standardized Errors (MLR) was used in the main analysis to handle data non-normality.

**Table 7.** Univariate Skewness and Kurtosis

Variable	Skewness		Kurtosis	
	Statistics	SE	Statistics	SE
UndersGI	-1.79	.10	3.98	.21
HideGI	.98	.10	-.02	.20
RelGI	-.64	.10	.36	.20
CommComp	-.92	.10	.55	.20
LingComp	-.82	.10	.81	.20
Culture_Know	-.34	.10	-.35	.20
Culture_Aware	-.54	.10	.47	.20
Culture_Skill	-1.01	.10	.71	.20
Expert	-.95	.10	.49	.21
Warm	-1.03	.10	.81	.20
Satis	-.81	.10	-.10	.20
PoliticalOrient	-.34	.10	.90	.20
Xeno	1.44	.10	1.99	.20

*Note.* UndersGI = Understanding Patient Language Use Goal Inference; UndersHealthGI = Understand Patient Health Condition Goal Inference; HideGI = Hiding Linguistic Incompetence Goal Inference; RelGI = Establishing a Trusting Relationship Goal Inference; CommComp = Communication Competence; LingComp = Linguistic Competence; Culture\_Know = Cultural Knowledge; Culture\_Aware = Cultural Awareness; Culture\_Skill = Cultural Skills; Expert = Expertise; Warm = Warmth; Satis = Satisfaction; PoliticalOrient = Political Orientation; Xeno = Xenophobia

### ***Zero-Order Correlations***

As shown in Table 8-1 and Table 8-2, the inferred goal of understanding patient language use was positively correlated with the inferred goal of establishing a trusting relationship and all the patient evaluation outcomes, and this goal was negatively correlated with the inferred goal of hiding linguistic incompetence. The inferred goal of hiding linguistic incompetence was negatively correlated with all patient evaluation outcomes and the other inferred goals. The inferred goal of establishing a trusting relationship was positively correlated with all the patient evaluation outcomes. In addition, all the patient evaluation outcomes had significant and positive

correlations. It is notable that participants' political orientation, with a higher value indicating a more liberal political orientation, was positively correlated with the inferred goal of establishing a trusting relationship and all the patient evaluation outcomes, and it was negatively correlated with the inferred goal of hiding linguistic incompetence. Age was negatively correlated with political orientation. Participants' xenophobia towards immigrants from India was negatively correlated with the inferred goals of understanding patient language use and establishing a trusting relationship, as well as all the patient evaluation outcomes. Xenophobia was positively correlated with the inferred goal of hiding linguistic incompetence. As political orientation and xenophobia were significantly correlated with the hypothesized mediators and outcome variables, these two variables were included as covariates in the main analyses.

**Table 8a.** Bivariate Correlations among Inferred Goals, Patient Evaluation, and Covariates

	1	2	3	4	5	6	7	8	9	10
1 UndersGI	----									
2 HideGI	-.44***	----								
3 RelGI	.42***	-.34***	----							
4 CommComp	.45***	-.42***	.64***	----						
5 LingComp	.28***	-.42***	.35***	.43***	----					
6 Culture_Know	.15***	-.21***	.39***	.47***	.51***	----				
7 Culture_Aware	.42***	-.43***	.56***	.57***	.48***	.57***	----			
8 Culture_Skill	.34***	-.43***	.55***	.61***	.66***	.65***	.66***	----		
9 Expert	.38***	-.38***	.55***	.68***	.60***	.55***	.62***	.77***	----	
10 Warm	.46***	-.39***	.69***	.77***	.40***	.41***	.56***	.62***	.64***	----
11 Satis	.43***	-.41***	.63***	.80***	.52***	.55***	.63***	.74***	.77***	.78***
12 PoliticalOrient	.06	-.12**	.12**	.12**	.27***	.15***	.18***	.21***	.19***	.13**
13 Age	-.03	-.03	-.05	-.02	-.10*	-.03	.02	-.06	-.06	-.07†
14 Xeno	-.16***	.23***	-.27***	-.23***	-.41***	-.26***	-.23***	-.42***	-.42***	-.26***

**Table 8b.** Bivariate Correlations Continued

	11	12	13	14
11 Satis	----			
12 PO	.13**	----		
13 Age	-.04	-.09*	----	
14 Xeno	-.30***	-.35***	.12**	----

*Note.* UndersGI = Understanding Patient Language Use Goal Inference; UndersHealthGI = Understand Patient Health Condition Goal Inference; HideGI = Hiding Linguistic Incompetence Goal Inference; RelGI = Establishing a Trusting Relationship Goal Inference; CommComp = Communication Competence; LingComp = Linguistic Competence; Culture\_Know = Cultural Knowledge; Culture\_Aware = Cultural Awareness; Culture\_Skill = Cultural Skills; Expert = Expertise; Warm = Warmth; Satis = Satisfaction; PatientUnders = Patient Understanding of Idioms; PoliticalOrient = Political Orientation; Xeno = Xenophobia; † $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### ***Measurement Model***

The hypothesized models contained ten latent variables, including inferred goal of understanding patient language use, inferred goal of hiding linguistic incompetence, inferred goal of establishing a trusting relationship, communication competence, cultural competency, linguistic competence, expertise, warmth, patient satisfaction, and xenophobia. A CFA of these variables demonstrated that the measurement model had good model fit,  $\chi^2(1719) = 3355.56$ ,  $p < .001$ , CFI = .95, RMSEA = .04 [90% CI = .039, .043], SRMR = .05.

### **Main Analysis**

#### ***Data Analytic Procedures***

For the main analysis, a series of structural equation models (SEMs) were conducted to address the hypotheses and research questions. The latent composite model (Stephensen & Holbert, 2003) was chosen over the full latent model because the full latent model requires an extremely large sample size (Kline, 2011). The latent composite model was selected over the path model because it takes measurement errors into account without adding more parameters to be estimated. A summary of the structural models and their corresponding hypotheses and research questions are displayed in Table 9. In all models, verbal conditions were dummy coded and modeled as observed exogenous variables, and nonverbal conditions were also modeled as an observed exogenous variable. The interaction terms were created and modeled as exogenous variables. Goal inferences were modeled as latent composite variables, mediating the association between verbal and nonverbal message conditions and patient evaluation outcomes. Paths were drawn from goal inferences (i.e., understanding patient language use goal inference, hiding linguistic incompetence goal inference, establishing a trusting relationship goal inference) to patient evaluation outcomes (i.e., communication competence, linguistic competence, cultural

competency, expertise, warmth, patient satisfaction). For all the latent variables (except for cultural competency) used in the models, the path from the latent variable to the observed indicator was fixed to be one, and the path from the residual variance to the observed indicator was fixed to be  $(1 - \text{Cronbach's } \alpha)$  multiplied by the corresponding observed variables' variance (Stephensen & Holbert, 2003). Cultural competence was modeled as a second-order factor, consisting of three first-order observed variables, including cultural knowledge, awareness, and skills. In all models, participants' xenophobia and political orientation were used as covariates to predict inferred goals and patient evaluation outcomes.

Two main structural models were used. In Model 1, the being blunt condition (Condition I) was used as the baseline condition, and the message conditions were coded into two dummy variables (i.e., Feigning Comprehension, Providing Rationale). Apart from the verbal and nonverbal conditions, two interaction terms, including the interaction between Feigning Comprehension and nonverbal behaviors and the interaction between Providing Rationale and nonverbal behaviors were modeled as observed exogenous variables. In Model 2, the Feigning Comprehension (Condition II) was used as the baseline condition to compare Condition I and Condition III. Two interaction terms, including the interaction between Being Blunt and nonverbal behaviors and the interaction between Providing Rationale and nonverbal behaviors were modeled as observed, exogenous variables. Significant interaction effects identified through the latent composite model were further probed in PROCESS 4.0 (Hayes, 2018) using Model 1. Specifically, verbal conditions were coded as dummy variables and used as independent variables, nonverbal conditions were used as the moderator, and the inferred goals were used as outcomes for separate models. Patient political orientation and xenophobia were used as covariates to predict all the endogenous variables. To examine the indirect effect of verbal and

nonverbal conditions on patient evaluation outcomes, the two structural equation models were rerun with bootstrapping with 5,000 resamples and bias-corrected 95% confidence intervals (CI).

**Table 9.** Hypothesized Structural Models

Model	Hypotheses and RQs	Baseline Condition	Exogenous Variables	Endogenous Variables	
				Mediators	Outcomes
1	H1-H3 H5-H11 RQ2-RQ6	▪ Blunt	▪ Feign ▪ Rationale ▪ Aff ▪ Feign × Aff ▪ Rationale × Aff ▪ PoliticalOrient ▪ Xeno	▪ UndersGI ▪ HideGI ▪ RelGI	▪ CommComp ▪ LingComp ▪ CulturalComp ▪ Expert ▪ Warm ▪ Satis
2	H4 H9 H11 RQ5 RQ6	▪ Feign	▪ Blunt ▪ Rationale ▪ Aff ▪ Blunt × Aff ▪ Rationale × Aff ▪ PoliticalOrient ▪ Xeno	▪ UndersGI ▪ HideGI ▪ RelGI	▪ CommComp ▪ LingComp ▪ CulturalComp ▪ Expert ▪ Warm ▪ Satis

*Note.* Feign = Feign Comprehension; Rationale = Provide Rationale; Aff = Nonverbal Affiliative Behaviors; PoliticalOrient = Political Orientation; Xeno = Xenophobia; UndersGI = Understanding Patient Language Use Goal Inference; HideGI = Hiding Linguistic Incompetence Goal Inference; RelGI = Establishing a Trusting Relationship Goal Inference; CommComp = Communication Competence; LingComp = Linguistic Competence; CulturalComp = Cultural Competency; Expert = Expertise; Warm = Warmth; Satis = Satisfaction.

### **Main Analysis Results**

**Model Fit.** The initial Model 1, which used the Being Blunt condition as the baseline condition, did not demonstrate acceptable model fit,  $\chi^2(78) = 610.65, p < .001, CFI = .87, RMSEA = .11$  [90% CI = .102, .118], SRMR = .10. Modifications indices suggested that predictive paths were missing from the model. Thus, paths suggested by modification indices that were also theoretically reasonable were added. First, as nonverbal behaviors can be used to cover or signal one's lack of understanding of language (Terui, 2012), paths were added from nonverbal behaviors and the interaction between nonverbal behaviors and Feign Comprehension to the inferred goals of understanding patient language use and hiding linguistic incompetence. Second, as perceiving an IMG as trying to establish a trusting relationship might also influence

people's perception of their competence, paths were added from the establishing a trusting relationship goal to patient evaluation of IMGs' communication competence, linguistic competence, cultural competency, and expertise. Third, previous studies suggested that physicians' nonverbal behaviors influence patient satisfaction and relational outcomes (Kiesler & Auerbach, 2003). Thus, direct paths were drawn from nonverbal behaviors to patient evaluation of IMGs' communication competence, warmth, and patient satisfaction. The revised structural model demonstrated acceptable model fit,  $\chi^2(65) = 285.19, p < .001, CFI = .95, RMSEA = .08$  [90% CI = .069, .087], SRMR = .05. The revised paths were retained in Model 2, and Model 2 also demonstrated acceptable model fit,  $\chi^2(63) = 269.66, p < .001, CFI = .95, RMSEA = .08$  [90% CI = .067, .086], SRMR = .05. The identical paths in Model 1 and Model 2 had the same coefficients, except for a few paths discussed below. All reported coefficients are standardized.

**Effect of Verbal Strategies on Inferred Goals (H1 to H4).** H1 predicted that the feigning comprehension strategy would induce less inferred goals of understanding patient language use and establishing a trusting relationship than the being blunt strategy. Results showed that participants were less likely to infer the goal of understanding patient language use ( $\beta = -.61, p < .001$ ) and the goal of establishing a trusting relationship with patients ( $\beta = -.26, p = .001$ ) when the IMG engaged in the strategy of feigning comprehension than when the IMG adopted the strategy of being blunt. Thus, H1 was supported. H2, which predicted that the feigning comprehension strategy would elicit more patient inference of the hiding linguistic incompetence goal than the being blunt strategy, was also supported ( $\beta = .70, p < .001$ ). H3 predicted that patients were more likely to infer the goal of establishing a trusting relationship when IMGs provided rationale than when they were blunt. However, the difference in the inferred goal of establishing a trusting relationship between the being blunt strategy and feigning



comprehension strategy was only marginally significant ( $\beta = .10, p = .09$ ). H3 was supported, albeit with marginally significant results. Consistent with H4's prediction, the strategy of providing rationale elicited more patient inference of the understanding patient language use goal ( $\beta = .68, p < .001$ ) and establishing a trusting relationship ( $\beta = .39, p < .001$ ) and less inferred goal of hiding linguistic incompetence ( $\beta = -.76, p < .001$ ) than the strategy of feigning comprehension.

**Effect of Nonverbal Strategies on Inferred Goals (H10).** Given that two structural models were run to compare the three verbal message conditions and different interaction terms were included in both models, the results regarding the effects of IMGs' nonverbal behaviors on inferred goals in two models were slightly different. Thus, two sets of results are reported in this section. In Model 1 (i.e., Being Blunt was used as the baseline condition), patient inferred goal of establishing a trusting relationship was significantly higher when IMGs engaged in high affiliative nonverbal behaviors than when they engaged in low affiliative nonverbal behaviors ( $\beta = .23, p < .001$ ), and the same pattern was found in Model 2 (i.e., Feigning Comprehension was used as the baseline condition;  $\beta = .42, p < .001$ ). Thus, H10 was supported. The paths from nonverbal behaviors to patient inferred goals of hiding linguistic incompetence and understanding patient language use were added post-hoc. The difference in the patient inferred goal of hiding linguistic incompetence was non-significant between high and low affiliative nonverbal behaviors in Model 1 ( $\beta = -.02, p = .62$ ) and Model 2 ( $\beta = -.11, p = .12$ ). In Model 1, the patient inferred goal of understanding patient language use was not significantly different between IMGs' high and low affiliative nonverbal behaviors ( $\beta = -.03, p = .53$ ). However, in Model 2, patients reported a significantly higher inferred goal of understanding patient language use when IMGs engaged in high than low affiliative nonverbal behaviors ( $\beta = .36, p < .001$ ). The

discrepancy in this result can be explained by the different interaction terms included in the two models (see explanations in the section on interaction effects).

**Association between Inferred Goal of Understanding Patient Language Use and Patient Evaluation Outcomes (H5, H6, RQ2, RQ4).** H5 predicted a negative association between the inferred goal of understanding patient language use and patient evaluation of IMG's linguistic competence. However, the association was not significant ( $\beta = .04, p = .37$ ). Thus, H5 was not supported. H6 predicted a positive association between the inferred goal of understanding patient language use and patient perception of IMG's warmth, which was supported by results ( $\beta = .15, p < .001$ ). RQ2 and RQ7 inquired about the association between the inferred goal of understanding patient language use and patient evaluation of IMG's cultural competency, communication competence, expertise, and patient satisfaction. Results revealed that the inferred goal of understanding patient language use was not significantly associated with IMG's cultural competency ( $\beta = .04, p = .35$ ). Nevertheless, this inferred goal had a positive association with patient evaluation of IMG's communication competence ( $\beta = .15, p = .001$ ), expertise ( $\beta = .12, p = .014$ ), and patient satisfaction ( $\beta = .12, p = .001$ ).

**Association between Inferred Goal of Hiding Linguistic Incompetence and Patient Evaluation Outcomes (H7, RQ4).** H7 predicted that the more that patients inferred the goal of hiding linguistic incompetence, the less patient evaluation of IMGs' warmth and patient satisfaction. H7 was supported given that the inferred goal of hiding linguistic incompetence was negatively associated with patient evaluation of IMG's warmth ( $\beta = -.12, p = .003$ ) and patient satisfaction ( $\beta = -.17, p < .001$ ). RQ4 inquired about the association between the inferred goal of hiding linguistic incompetence and patient evaluation of IMGs' cultural competency, communication competence, and expertise. Results showed that the inferred goal of hiding

linguistic incompetence was negatively associated with cultural competency ( $\beta = -.24, p < .001$ ), communication competence ( $\beta = -.20, p < .001$ ), and physician expertise ( $\beta = -.14, p = .003$ ).

**Association between Inferred Goal of Establishing a Trusting Relationship and Patient Evaluation Outcomes (H8).** Consistent with H8, results showed that the inferred goal of establishing a trusting relationship was positively associated with patient perception of IMG's warmth ( $\beta = .52, p < .001$ ) and patient satisfaction ( $\beta = .48, p < .001$ ). Although not hypothesized, modification indices recommended examining the association between the inferred goal of establishing a trusting relationship and competence outcomes. Results indicated that the inferred goal of establishing a trusting relationship was positively associated with patient evaluation of IMGs' communication competence ( $\beta = .48, p < .001$ ), linguistic competence ( $\beta = .15, p = .003$ ), cultural competency ( $\beta = .46, p < .001$ ), and physician expertise ( $\beta = .40, p < .001$ ).

Standardized coefficients in structural Model 1 and Model 2 are displayed in Table 10-1 and Table 10-2 respectively. Significant paths are shown in Figure 2-1 and Figure 2-2 respectively.

**Table 10a. Standardized Coefficients in Structural Model 1.**

	UndersGI	HideGI	RelGI	CommComp	LingComp	CulturalComp	Expert	Warm	Satis
Feign	-.61***	.70***	-.26**	----	----	----	----	---	----
Rationale	----	----	.10†	----	----	----	----	---	----
Aff	-.03	-.02	.23**	.17***	----	----	----	.25***	.09***
Feign × Aff	.29***	-.07	.14†	----	----	----	----	----	----
Rationale × Aff	.07†	-.03	-.04	----	----	----	----	----	----
UndersGI	----	----	----	.15**	.04	.04	.12*	.15***	.12**
HideGI	----	----	----	-.20***	-.29***	-.24***	-.14**	-.12**	-.17***
RelGI	----	----	----	.48***	.15**	.46***	.40***	.52***	.48***
PoliticalOrient	-.01	-.05	.02	.02	.12**	.07†	.03	.01	.01
Xeno	-.16**	.22***	-.27***	-.03	-.30***	-.22***	-.26***	-.07*	-.11**
R <sup>2</sup>	.27	.49	.21	.54	.34	.51	.43	.61	.49

*Note.* Feign = Feign Comprehension; Rationale = Providing Rationale; Aff = Nonverbal Affiliative Behaviors; UndersGI = Understanding Patient Language Use Goal Inference; HideGI = Hiding Linguistic Incompetence Goal Inference; RelGI = Establishing a Trusting Relationship Goal Inference; CommComp = Communication Competence; LingComp = Linguistic Competence; CulturalComp = Cultural Competency; Expert = Expertise; Warm = Warmth; Satis = Satisfaction; † $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

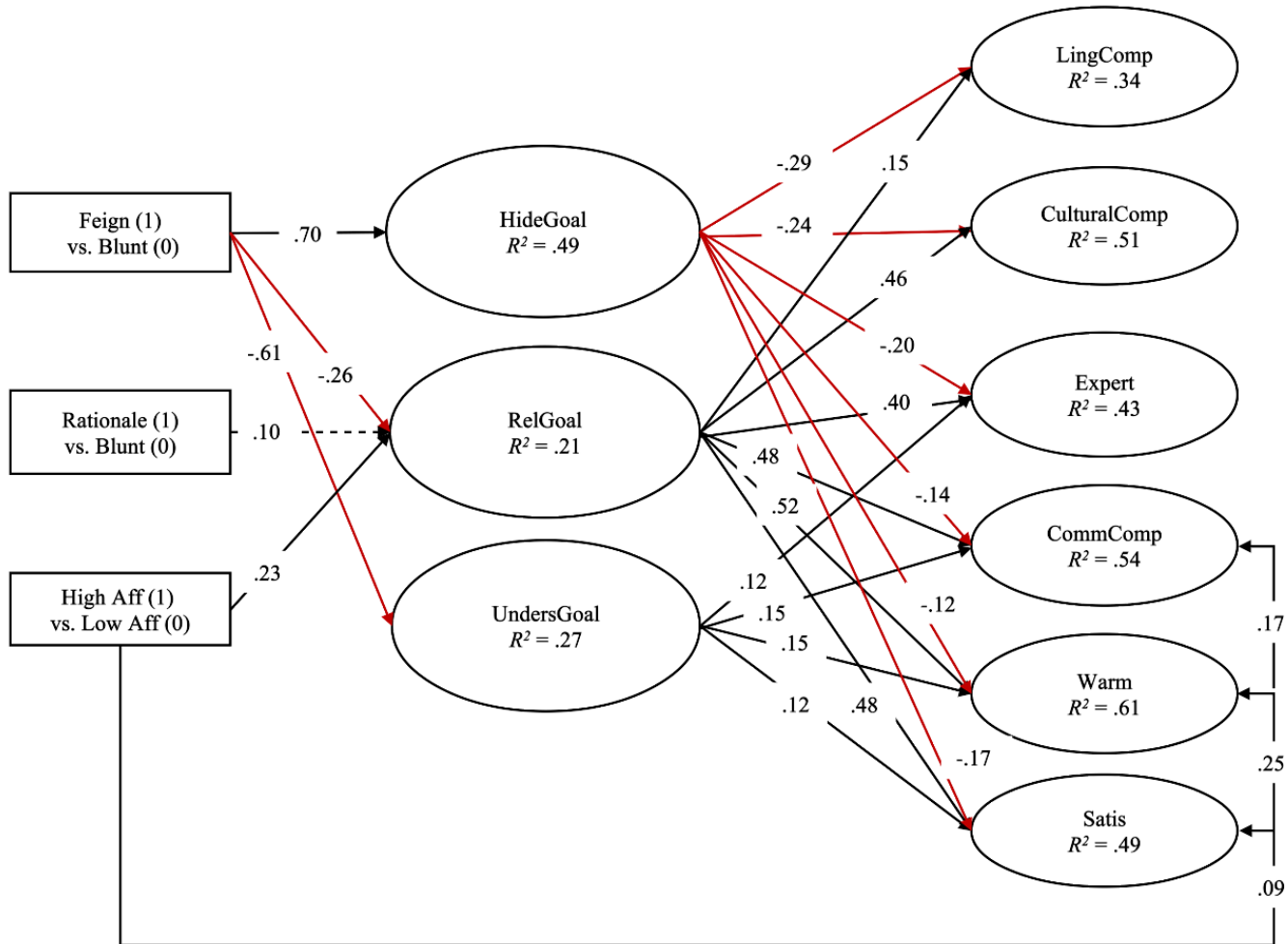
**Table 10b. Standardized Coefficients in Structural Model 2.**

	UndersGI	HideGI	RelGI	CommComp	LingComp	CulturalComp	Expert	Warm	Satis
Blunt	.52***	-.62***	.22**	----	----	----	----	---	----
Rationale	.68***	-.76***	.39***	----	----	----	----	---	----
Aff	.36***	-.11	.42***	.17***	----	----	----	.25***	.09***
Blunt × Aff	-.22**	.01	-.11	----	----	----	----	----	----
Rationale × Aff	-.28***	.10†	-.21**	----	----	----	----	----	----
UndersGI	----	----	----	.15**	.04	.04	.12*	.15***	.12**
HideGI	----	----	----	-.20***	-.29***	-.24***	-.14**	-.12**	-.17***
RelGI	----	----	----	.48***	.15**	.46***	.40***	.52***	.48***
PoliticalOrient	-.01	-.06	.03	.02	.12**	.07†	.03	.02	.01
Xeno	-.17**	.23***	-.27***	-.03	-.30***	-.22***	-.26***	-.07*	-.11**
R <sup>2</sup>	.28	.50	.21	.54	.34	.51	.44	.61	.49

*Note.* Feign = Feigning Comprehension; Blunt = Being Blunt; Rationale = Providing Rationale; Aff = Nonverbal Affiliative Behaviors; UndersGI = Understanding Patient Language Use Goal Inference; HideGI = Hiding Linguistic Incompetence Goal Inference; RelGI = Establishing a

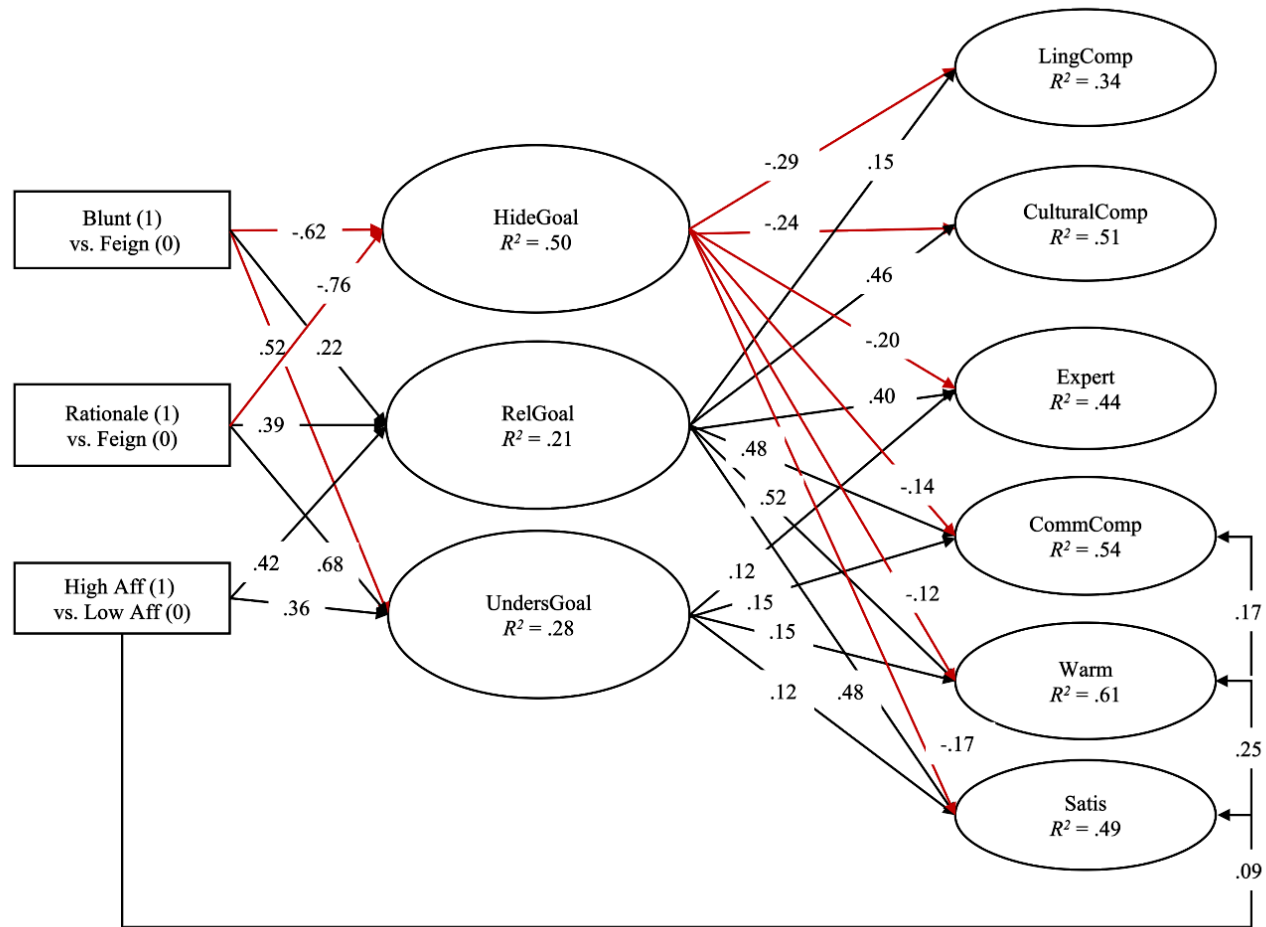
**Table 10b (continued).**

Trusting Relationship Goal Inference; CommComp = Communication Competence; LingComp = Linguistic Competence; CulturalComp = Cultural Competency; Expert = Expertise; Warm = Warmth; Satis = Satisfaction; \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .



**Figure 2a.** Standardized Coefficients for Significant Paths in Model 1

*Note.* Interaction effects are not included for parsimony; Only statistically significant results are included; Black arrows indicate positive association, red arrows indicate negative association, and dashed arrows indicate marginally significant association; Numbers in the parentheses indicate how the variables were dummy coded; coefficients are standardized.

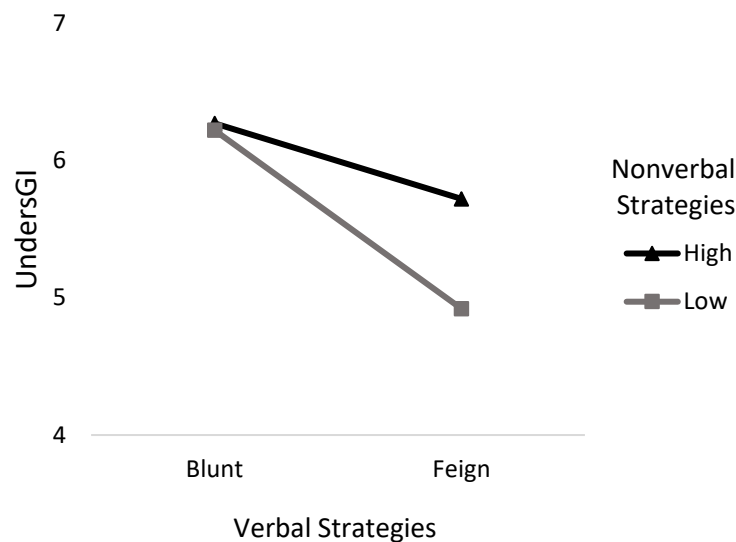


**Figure 2b.** Standardized Coefficients for Significant Paths in Model 2

*Note.* Interaction effects are not included for parsimony; Only statistically significant results are included; Black arrows indicate positive association, and red arrows indicate negative association; Numbers in the parentheses indicate how the variables were dummy coded; coefficients are standardized.

### Interaction Effect between Verbal and Nonverbal Strategies on Inferred Goals. RQ5

asked whether there would be an interaction effect between IMGs' verbal and nonverbal strategies on patients' goal inference. Results revealed an interaction effect between feigning comprehension (relative to being blunt) and nonverbal behaviors on patients' inferred goal of understanding patient language use ( $\beta = .29, p < .001$ ). As plotted in Figure 3 and based on the interaction probing, when IMGs feigned comprehension, patients were more likely to infer the goal of understanding patient language use when IMGs engaged in high affiliative nonverbal behaviors than when IMGs engaged in low affiliative nonverbal behaviors,  $p < .001$ , [95% CI = .51, 1.08]. However, when IMGs were blunt, patient inferred goal of understanding patient language use was not statistically different between IMGs' high affiliative and low affiliative nonverbal behaviors,  $p = .72$ , [95% CI = -.17, .24].



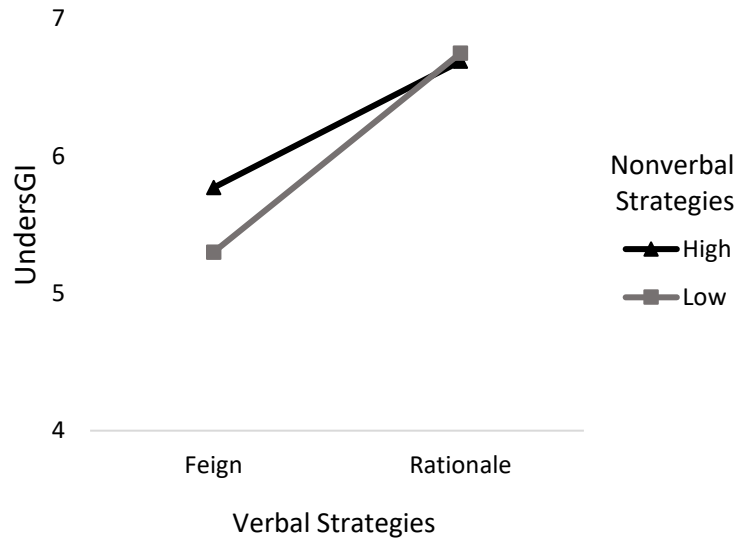
**Figure 3.** Interaction between Feign Comprehension (vs. Being Blunt) and Nonverbal Strategies on Understanding Patient Language Use Goal Inference (UndersGI).

*Note.* UndersGI ranged from 1 to 7.

Results also showed an interaction effect between providing rationale (relative to feigning comprehension) and nonverbal behaviors on patients' inferred goal of understanding



patient language use ( $\beta = -.28, p < .001$ ). As shown in Figure 4, when IMGs provided rationale, patient inferred goal of understanding patient language use did not statistically differ between IMGs' high and low affiliative nonverbal behaviors,  $p = .74$ , [95% CI =  $-.34, .24$ ]. Replicating the interaction in Figure 3, when IMGs feigned comprehension, patients were more likely to infer the goal of understanding patient language use when IMGs engaged in high affiliative nonverbal behaviors than when IMGs engaged in low affiliative nonverbal behaviors,  $p < .001$ , [95% CI =  $.51, 1.08$ ].

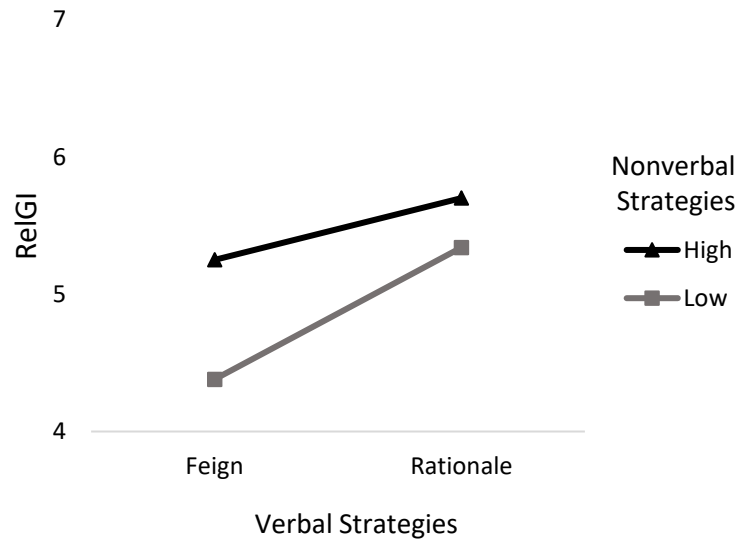


**Figure 4.** Interaction between Providing Rationale (vs. Feigning Comprehension) and Nonverbal Strategies on Understanding Patient Language Use Goal Inference (UndersGI).

*Note.* UndersGI ranged from 1 to 7.

No significant interaction effect was observed between feigning comprehension (relative to being blunt) and nonverbal behaviors on the inferred goal of hiding linguistic incompetence ( $\beta = -.07, p = .239$ ). The interaction effect between providing rationale (relative to feigning comprehension) and nonverbal behaviors on the inferred goal of hiding linguistic incompetence was non-significant ( $\beta = .10, p = .10$ ).

The interaction effect between feigning comprehension (relative to being blunt) and nonverbal behaviors on the inferred goal of establishing a trusting relationship was only marginally significant ( $\beta = .14, p = .051$ ). Relative to being blunt, the interaction between providing rationale and nonverbal behaviors on the goal of establishing a trusting relationship was non-significant ( $\beta = -.04, p = .567$ ). However, there was a significant interaction effect between providing rationale (relative to feigning comprehension) and nonverbal behaviors on the inferred goal of establishing a trusting relationship ( $\beta = -.21, p = .003$ ). Based on interaction probing shown in Figure 5, when IMGs feigned comprehension, patient inferred goal of establishing a trusting relationship differed significantly between high and low affiliative nonverbal behaviors,  $p < .001$ , [95% CI = .64, 1.11]. When IMGs engaged in providing rationale, patient inferred goal of establishing a trusting relationship also differed significantly between high and low affiliative nonverbal behaviors,  $p = .033$ , [95% CI = .03, .70]. However, the interaction effect was significant such that the effect of nonverbal behaviors on patient inferred goal of establishing a trusting relationship was relatively smaller when IMGs provided rationale than when they feigned comprehension (see Figure 5).



**Figure 5.** Interaction Effect between Providing Rationale (vs. Feigning Comprehension) and Nonverbal Strategies on the Establishing a Trusting Relationship Goal Inference (RelGI). *Note.* RelGI ranged from 1 to 7.

**Indirect Effect of Verbal Strategies on Patient Evaluation (H9).** H9 hypothesized that patients' inference of IMGs' goals would mediate the association between IMGs' verbal strategies and patient evaluation. The indirect effects of verbal conditions on patient evaluation outcomes are displayed in Table 11. Relative to the blunt strategy, the strategy of feigning comprehension had negative, indirect effects on patient evaluation of IMGs' communication competence, expertise, warmth, and patient satisfaction through the inferred goal of understanding patient language use. Compared to the strategy of being blunt, the strategy of feigning comprehension also had negative, indirect effects on patient evaluation of IMGs' linguistic competence, cultural competency, warmth, and patient satisfaction through the inferred goal of hiding linguistic incompetence. In addition, compared to the strategy of being blunt, the strategy of feigning comprehension had negative, indirect effects on communication competence, linguistic competence, cultural competency, expertise, warmth, and patient satisfaction through the inferred goal of establishing a trusting relationship. However, compared to the blunt strategy,

the strategy of providing rationale did not have statistically significant indirect effects on any of the patient evaluation outcomes.

Compared to the strategy of feigning comprehension, providing rationale had positive, indirect effects on patient evaluation of IMGs' communication competence, expertise, warmth, and patient satisfaction through the inferred goal of understanding patient language use. Through the mediating role of the inferred goal of hiding linguistic incompetence, providing rationale, relative to feigning comprehension, had positive, indirect effects on patient evaluation of IMGs' linguistic competence, cultural competency, warmth, and patient satisfaction. Relative to the strategy of feigning comprehension, the strategy of providing rationale had positive, indirect effects on patient evaluation of IMGs' communication competence, linguistic competence, cultural competency, expertise, warmth, and patient satisfaction through the inferred goal of establishing a trusting relationship. Thus, H9 was partially supported.

**Table 11.** Verbal Conditions' Indirect Effect on Patient Evaluation Outcomes

Baseline	Indirect Effects	Endogenous Variables	<i>b</i>	<i>SE</i>	<i>LLCI</i>	<i>ULCI</i>
Blunt	Feign → UndersGI →DV	CommComp	-.18*	.08	-.345	-.045
		LingComp	-.07	.06	-.194	.044
		Culture	-.07	.06	-.194	.039
		Expert	-.16*	.07	-.32	-.03
		Warm	-.25*	.08	-.405	-.114
		Satis	-.21*	.08	-.384	-.06
	Feign → HideGI →DV	CommComp	-.18	.10	-.361	.015
		LingComp	-.44*	.10	-.61	-.253
		Culture	-.33*	.09	-.499	-.162
		Expert	-.15	.10	-.344	.042
		Warm	-.22*	.09	-.41	-.039
		Satis	-.26*	.12	-.499	-.03
	Feign → RelGI →DV	CommComp	-.34*	.10	-.536	-.146
		LingComp	-.08*	.04	-.167	-.024
		Culture	-.23*	.07	-.378	-.10
		Expert	-.24*	.08	-.399	-.103
		Warm	-.36*	.11	-.572	-.156
		Satis	-.41*	.12	-.657	-.179
	Rationale → RelGI →DV	CommComp	.14	.08	-.023	.298
		LingComp	.03	.02	-.008	.088

**Table 11 (continued).**

		Culture	.09	.06	-.016	.208
		Expert	.10	.06	-.017	.219
		Warm	.14	.09	-.024	.315
		Satis	.16	.10	-.029	.362
Feign	Rationale → UndersGI → DV	CommComp	.21*	.09	.052	.391
		LingComp	.08	.07	-.049	.23
		Culture	.08	.07	-.04	.221
		Expert	.19*	.08	.039	.366
		Warm	.28*	.09	.131	.456
		Satis	.23*	.09	.067	.432
	Rationale → HideGI → DV	CommComp	.20	.11	-.01	.397
		LingComp	.48*	.10	.276	.679
		Culture	.36*	.10	.178	.543
		Expert	.17	.11	-.057	.379
		Warm	.24*	.10	.046	.443
		Satis	.29*	.13	.028	.543
	Rationale → RelGI → DV	CommComp	.52*	.10	.334	.715
		LingComp	.13*	.05	.044	.231
		Culture	.36*	.07	.225	.503
		Expert	.38*	.08	.234	.536
		Warm	.55*	.11	.356	.761
		Satis	.63*	.12	.407	.871

*Note.* Blunt = Being Blunt; Feign = Feign Comprehension; Rationale = Provide Rationale; DV = Dependent Variable; UndersGI = Understanding Patient Language Use Goal Inference; HideGI = Hiding Linguistic Incompetence Goal Inference; RelGI = Establishing a Trusting Relationship Goal Inference; CommComp = Communication Competence; LingComp = Linguistic Competence; CulturalComp = Cultural Competency; Expert = Expertise; Warm = Warmth; Satis = Satisfaction LLCI = Lower-Limit Confidence Interval; ULCI = Upper-Limit Confidence Interval; Asterisked unstandardized coefficients are statistically significant indirect paths.

**Indirect Effect of Nonverbal Strategies on Patient Evaluation (H11).** H11 predicted that the effect of nonverbal affiliative behaviors on patient evaluation would be mediated by the patient inferred goal of establishing a trusting relationship. As shown in Table 12, IMGs' nonverbal behaviors had positive, indirect effects on patient evaluation of IMGs' communication competence, linguistic competence, cultural competency, expertise, warmth, and patient satisfaction through the inferred goal of establishing a trusting relationship. Thus, H11 was supported.

**Table 12.** Nonverbal Conditions' Indirect Effect on Patient Evaluation Outcomes

Baseline	Indirect Effects	Endogenous Variables	<i>B</i>	<i>SE</i>	<i>LLCI</i>	<i>ULCI</i>
Low Aff	Aff→RelGI→DV	CommComp	.30*	.09	.137	.486
		LingComp	.08*	.03	.021	.151
		Cultural Comp	.21*	.06	.092	.342
		Expert	.22*	.07	.096	.356
		Warm	.32*	.10	.149	.522
		Satis	.37*	.11	.165	.593

*Note.* Aff = Nonverbal Affiliative Behaviors; DV = Dependent Variable; RelGI = Establishing a Trusting Relationship Goal Inference; CommComp = Communication Competence; LingComp = Linguistic Competence; CulturalComp = Cultural Competency; Expert = Expertise; Warm = Warmth; Satis = Satisfaction; LLCI = Lower-Limit Confidence Interval; ULCI = Upper-Limit Confidence Interval; Asterisked unstandardized coefficients are statistically significant indirect paths.

**Direct Effect of Nonverbal Strategies on Patient Evaluation (Post-Hoc).** Direct paths from nonverbal behaviors to communication competence, warmth, and patient satisfaction were added post-hoc as suggested by modification indices. Results showed that nonverbal behaviors had positive, direct effects on patient evaluation of IMGs' communication competence ( $\beta = .17$ ,  $p < .001$ ), warmth ( $\beta = .25$ ,  $p < .001$ ), and patient satisfaction ( $\beta = .09$ ,  $p < .001$ ).

**Moderated Mediation Effect (Post-Hoc).** A series of post-hoc analyses were included in the structural model to test whether the indirect effects of verbal strategies on patient evaluation were moderated by IMGs' nonverbal strategies. As shown in Table 13, when IMGs engaged in feigning comprehension, high affiliative nonverbal behaviors elicited more of the understanding patient goal than low affiliative nonverbal behaviors, which in turn was associated with higher patient evaluation of IMGs' communication competence, expertise, warmth, and patient satisfaction. However, when IMGs were blunt or provided rationale, high affiliative nonverbal behaviors did not elicit significantly more of the understanding patient language use goal.

When IMGs feigned comprehension, high affiliative nonverbal behaviors elicited more of the establishing a trusting relationship goal inference relative to low affiliative nonverbal

behaviors, which in turn was associated with higher patient evaluation of IMGs' communication competence, cultural competency, linguistic competence, expertise, warmth, and patient satisfaction. When IMGs were blunt or provided rationale, patients also inferred more of the establishing a trusting relationship goal when the verbal strategies were accompanied by high affiliative nonverbal behaviors relative to low affiliative behaviors, which was in turn positively associated with all the patient evaluation outcomes. The positive indirect effect of nonverbal behaviors on patient evaluation through the inferred goal of establishing a trusting relationship was smaller when IMGs were blunt or provided rationale than when IMGs feigned comprehension.

**Table 13.** Indirect Effects of Interactions between Verbal and Nonverbal Conditions on Patient Evaluation Outcomes

Baseline	Indirect Effects	Endogenous Variables	<i>b</i>	<i>SE</i>	<i>LLCI</i>	<i>ULCI</i>	
Blunt	Feign×NVB→UndersGI→DV	CommComp	.10*	.05	.023	.198	
		LingComp	.04	.03	-.025	.11	
		Cultural Comp	.04	.03	-.021	.111	
		Expert	.09*	.05	.014	.189	
		Warm	.13*	.05	.045	.244	
		Satis	.11*	.05	.026	.227	
		Feign×NVB→HideGI→DV	CommComp	.02	.02	-.022	.074
	LingComp		.05	.05	-.047	.155	
	Cultural Comp		.04	.04	-.036	.111	
	Expert		.02	.02	-.019	.069	
	Warm		.02	.03	-.028	.085	
	Satis		.03	.03	-.03	.106	
	Feign×NVB→RelGI→DV		CommComp	.22	.12	-.009	.455
		LingComp	.05	.04	-.002	.133	
		Cultural Comp	.15	.08	-.006	.317	
		Expert	.16	.09	-.006	.331	
		Warm	.23	.13	-.009	.487	
		Satis	.26	.14	-.01	.545	
		Feign	Rationale×NVB→UndersGI→DV	CommComp	-.11*	.05	-.218
	LingComp			-.04	.04	-.125	.027
	Culture			-.04	.04	-.122	.024
Expert	-.10*			.05	-.205	-.019	
Warm	-.15*			.06	-.274	-.057	

**Table 13 (continued).**

	Satis	-.12*	.06	-.252	-.03
Rationale×NVB→HideGI→DV	CommComp	-.03	.03	-.098	.008
	LingComp	-.08	.05	-.197	.012
	Cultural	-.06	.04	-.145	.009
	Comp				
	Expert	-.03	.03	-.093	.014
	Warm	-.04	.03	-.11	.007
	Satis	-.05	.04	-.135	.008
Rationale×NVB→RelGI→DV	CommComp	-.34*	.12	-.577	-.117
	LingComp	-.09*	.04	-.174	-.02
	Cultural	-.24*	.08	-.404	-.082
	Comp				
	Expert	-.25*	.09	-.424	-.086
	Warm	-.36*	.12	-.612	-.128
	Satis	-.41*	.14	-.701	-.146

*Note.* Blunt = Being Blunt; Feign = Feign Comprehension; Rationale = Provide Rationale; DV = Dependent Variable; Aff = Nonverbal Affiliative Behaviors; UndersGI = Understanding Patient Language Use Goal Inference; HideGI = Hiding Linguistic Incompetence Goal Inference; RelGI = Establishing a Trusting Relationship Goal Inference; CommComp = Communication Competence; LingComp = Linguistic Competence; CulturalComp = Cultural Competency; Expert = Expertise; Warm = Warmth; Satis = Satisfaction LLCI = Lower-Limit Confidence Interval; ULCI = Upper-Limit Confidence Interval; Asterisked unstandardized coefficients are statistically significant indirect paths.



## CHAPTER 5: DISCUSSION

The current dissertation aimed to understand how U.S. patients evaluate international medical graduates (IMGs) who were born and trained in non-North American countries. One of the most salient communication challenges for IMGs is their lack of comprehension of U.S. patients' language use (e.g., idioms, slang, sarcasm; Michalski et al., 2017). Drawing on the multiple goals perspective (Caughlin, 2010), the dissertation focused on U.S. patients' interpretations and evaluation of IMGs when IMGs engage in different verbal and nonverbal strategies to manage their lack of comprehension in healthcare encounters. To investigate this topic, 569 U.S. White adult men were recruited to participate in a 3 (verbal strategies: being blunt, feigning comprehension, providing rationale)  $\times$  2 (nonverbal strategies: high and low affiliative nonverbals)  $\times$  2 (verbal message variations) full factorial online experiment. Participants were randomly assigned to watch a short video recording of an IMG-patient interaction (the first 20 to 30 seconds of the interaction) and reported their evaluation of IMGs. As most research examining IMGs' communication with patients tends to explore communication challenges encountered by IMGs (e.g., Jain & Krieger, 2011), the dissertation extends past literature by investigating IMG communication from the patient perspective. In addition, the dissertation found the indirect effect of IMGs' verbal strategies on patient evaluation through patient inferred goals, providing additional evidence to support and extend the multiple goals perspective (Caughlin, 2010). The multiple goals perspective has been predominantly tested on verbal communication (e.g., Donovan-Kicken et al., 2013; Palomares & Derman, 2019). Extending the multiple goals perspective further into incorporating nonverbal elements, the dissertation found an indirect effect of IMGs' nonverbal behaviors on conversational outcomes and source appraisals and the interaction effect between verbal and

nonverbal behaviors. Finally, the study offers practical implications for IMGs to deal with their lack of comprehension of U.S. patients and provides insights into designing communication interventions for IMGs who have language barriers when interacting with U.S. patients.

This chapter begins with a summary of major findings and explanations of the findings. Then, the theoretical implications section discusses how the current study extends four sets of literature, including IMG-patient communication, native speakers (NSs)-non-native speakers (NSSs) interactions, the multiple goals perspective, and the discrepant verbal-nonverbal profile theory (DNVP). Following the theoretical implications, practical implications for IMGs and communication training designers are discussed. Last, the chapter ends by discussing study limitations and future directions for research.

### **Summary of Study Findings**

The findings generate four salient themes. First, IMGs' verbal strategies in managing their lack of comprehension affect patients' inferred interaction goals. Second, the effect of IMGs' nonverbal strategies in dealing with their lack of comprehension on patient inferred goals is dependent on the verbal strategies they adopt. Third, patients perceive different dimensions of competence as distinct constructs. Fourth, patients' multiple inferred goals affect their evaluation of IMGs and their conversation distinctively. In the following sessions, each theme is explained.

### ***Verbal Strategies and Inferred Goals***

H1 to H4 predicted that U.S. patients would infer different levels of interaction goals when being assigned to watch IMGs who were blunt, feigned comprehension, or provided rationale to manage their lack of comprehension. Study results provided evidence for the main effect of IMGs' verbal strategies on patient goal inferences. Specifically, patients inferred more of the understanding patient language use goal and establishing a trusting relationship goal when

IMGs were blunt or provided rationale than when they feigned comprehension. In addition, patients inferred less of the hiding linguistic incompetence goal when IMGs were blunt and provided rationale than when IMGs feigned comprehension. Although patients tended to infer more of the establishing a trusting relationship goal when IMGs provided rationale relative to when IMGs were blunt, the difference in patient goal inference was only marginally significant.

Overall, the effects of IMGs' verbal strategies in dealing with their lack of comprehension on patient goal inferences utilizes the multiple goals perspective by testing the effect of messages on conversational partners' goal inferences. The multiple goals perspective claims that messages from conversational partners can influence what people think their conversational partners attempt to accomplish (Caughlin, 2010). As feigning comprehension is a linguistic strategy commonly used by NNSs to protect their "spoiled identity" (Terui & Hsieh, 2020), patients may perceive that the IMGs want to hide their linguistic incompetence if the feigning comprehension strategy becomes noticeable to patients (which was manipulated as a "failed" feigning comprehension in the current study so that participants accurately inferred what was happening). In contrast, being blunt and providing rationale signal IMGs' interest in obtaining more information about patients. Oftentimes, patients can sense and appreciate physicians' genuine interest in understanding them (Bendapudi et al., 2006), thus revealing one's lack of understanding by being blunt and providing rationale can make patients feel that IMGs are attempting to understand them and develop a trusting relationship.

It is noteworthy that the difference in patient inferred goal of establishing a trusting relationship between the strategy of being blunt and providing rationale was not as strong as predicted given the marginally significant result. According to goal understanding theory, people form their goal understanding based on the interplay of multiple factors, such as the nature of the

relationship, conversational partners' characteristics, and social contexts (Palomares, 2015). Thus, patient inferred goals are not solely dependent on IMGs' communication. IMGs' social identity and relationship type (i.e., physician-patient relationship) may also shape patients' goal inferences. It is possible that IMGs' race and accent already mark them as foreign physicians, and being blunt about one's lack of understanding already signals their genuine intention in learning more about patients. Therefore, IMGs probably do not need to justify their clarification request. In the study, two open-ended questions were asked to screen out bots and gain additional insights for the quantitative results (i.e., How do you feel about this interaction with Dr. Patel? What is your overall impression of Dr. Patel?). Participants' responses to the open-ended questions also illustrate the speculation about the marginally significant difference between IMGs' strategies of being blunt and providing rationale. For example, when being asked about their feelings about the interaction, Participant#173 who was assigned to a *Being Blunt* condition noted, "It seemed like a normal conversational interaction, perhaps with someone from another culture. Dr. Patel was honest about not understanding the idiom I used, asked a follow-up question about it and we were able to move on. It was not a big deal." This response reveals that some participants can infer physicians' identity based on the physician's race and accent, and thus interpret the IMG's blunt question as being honest.

In summary, IMGs' verbal communication strategies in dealing with their lack of comprehension elicited different levels of patient goal inferences. Both being blunt and providing rationale led to more patient inferences of the understanding patient language use goal and the establishing a trusting relationship goal and less inference of the hiding linguistic incompetence goal than feigning comprehension. However, feigning comprehension can be enacted in different ways (Terui, 2012). It is possible that other ways of feigning comprehension

(e.g., mentioning irrelevant information to redirect the conversation; asking a broad prompt for more information) may have different effects on patient inferred goals. Using the blunt strategy and providing rationale for clarification request did not elicit different levels of understanding language use goal and hiding linguistic incompetence goal, but providing rationale led to slightly more inference of the establishing a trusting relationship goal than being blunt.

### ***Nonverbal Strategies and Conditional Effect on Inferred Goals***

H10 inquired about the effect of IMGs' nonverbal behaviors while managing their lack of comprehension on patient inferred goal of establishing a trusting relationship. Study results showed that IMGs' nonverbal strategies had a main effect on patient inferred goal of establishing a trusting relationship. This result supports the notion that individuals' interpretations of communication can be impacted by their conversational partners' nonverbal communication (Burgoon et al., 2016). Nonverbal affiliative behaviors (e.g., eye contact, forward lean, open arms), which are important components of patient-centered care (PCC; Emanuel & Emanuel, 1992), can potentially be interpreted by patients as attempting to establish a trusting relationship.

RQ5 questioned whether IMGs' verbal and nonverbal strategies would interact to affect patient inferred goals. Results showed that IMGs' verbal and nonverbal strategies had interaction effects on patient inferred goals of understanding patient language use and establishing a trusting relationship. Specifically, when IMGs were blunt or provided rationale to deal with their lack of comprehension, patient inferred goal of understanding patient language use was similar between high and low affiliative nonverbal behaviors. However, when IMGs feigned comprehension to deal with their lack of comprehension, patient inferred goal of understanding patient language use was significantly higher when coupling with high affiliative nonverbal behaviors than with low affiliative nonverbal behaviors. Although IMGs' high affiliative nonverbal behaviors elicited

more patient inference of establishing a trusting relationship than low affiliative nonverbal behaviors, the effect was relatively larger when IMGs feigned comprehension than when they provided rationale.

The conditional effect of IMGs' nonverbal strategies on their verbal strategies extends the multiple goals perspective by considering how multiple communication channels impact individuals' goal inferences. The multiple goals perspective posits that communicators can adopt multiple communication channels to accomplish their multiple interaction goals simultaneously (O'Keefe & Delia, 1982). In the current study, patients perceived IMGs who feigned comprehension (but were discovered by the patient as not understanding the idiom) as more of attempting to hide their linguistic incompetence and less of trying to understand patient language use or to build a trusting relationship. As nonverbal affiliative behaviors, such as making eye contact, can also signal physicians' interests in patients (Buller & Buller, 1987), IMGs engaging in high affiliative nonverbal behaviors could potentially complement the goals that were not accomplished through the verbal communication channel. It is noteworthy that patient inference of the understanding patient language use goal was not significantly different between high and low affiliative nonverbal behaviors when IMGs were blunt or provided rationale, but the difference was significantly different when IMGs feigned comprehension. It is possible that patients who were assigned to these conditions already perceived these two verbal strategies were sufficient to signal IMGs' intention to understand patients. Disclosing one's lack of understanding by being blunt or providing rationale could already be perceived as a genuine attempt to understand the patient. Thus, the additive effect of nonverbal affiliative behaviors for being blunt and providing rationale were not as strong as they were for the verbal strategy of feigning comprehension. The results are consistent with previous research on face threats in

criticism, which revealed that nonverbal politeness elicits more politeness assessment when combined with a bald-on-record message, but nonverbal politeness does not significantly increase politeness assessment when accompanied by a polite verbal message (Trees & Manusov, 1998).

In summary, IMGs' nonverbal affiliative behaviors increased patient inferred goal of establishing a trusting relationship across when IMGs feigned comprehension and provided rationale to deal with their lack of comprehension. This additive effect was relatively larger when IMGs feigned comprehension than when they provided rationale because their nonverbal communication channel compensated for what has not been accomplished through the verbal communication channel. IMGs' nonverbal affiliative behaviors increased patient inferred goal of understanding patient language use only when IMGs feigned comprehension, as patients who were exposed to the other two verbal conditions already inferred the understanding patient language use goal through the verbal message.

### ***Inferred Goals and Patient Evaluation***

H5 to H8 and RQ2 to RQ4 inquired about the association between patient inferred goals and patient evaluation of IMGs' communication competence, linguistic competence, cultural competency, expertise, warmth, and overall patient satisfaction. Results regarding the association between patient inferred goals and evaluation of IMGs align with the assumption posited by the multiple goals perspective that inferred goals shape the meaning of communication (Caughlin, 2010). Specifically, the current study found that the patient inferred goal of establishing a trusting relationship was positively associated with all patient evaluation outcomes, highlighting the important role of trust in physician-patient communication. Trust is essential in healthcare because patients are in a vulnerable situation in which they need to rely on health care providers

to improve their health outcomes (Angel & Vatne, 2016). Obtaining patient trust pertains to health care providers' competent identity, relationship building, or even patient safety (Dalton et al., 2021). Thus, it is not surprising that patients' belief about the extent to which their IMGs were trying to establish a trusting relationship was positively related to all the patient evaluation outcomes.

In addition, patient inferred goals of hiding linguistic incompetence and understanding patient language use were significantly associated with patient evaluation outcomes. Although both of these goals were related to patient evaluation of IMGs' warmth and patient satisfaction, the inferred goal of understanding patient language use was positively associated with the assessment of IMGs' expertise and communication competence. These results suggest that patients might perceive different aspects of IMGs' competence differently and use different goals to evaluate IMGs' multiple aspects of competence. The results of the psychometric analysis also indicated that patients perceive IMGs' communication competence, linguistic competence, cultural competency, and expertise as four distinct constructs. Perceiving IMGs as lacking linguistic or cultural competency does not necessarily mean that patients will also view the IMGs as lacking communication competence or expertise. The results further suggest that different aspects of physician competence have nuanced differences. Cultural competency, for example, concerns one's knowledge, awareness, and skills to communicate across cultural boundaries (Saha et al., 2008), and physician expertise concerns physicians' medical knowledge and skills (Blödt et al., 2021). The results indicate that patients' perceptions of the lack of cultural and linguistic competency might not influence their perceptions of other aspects of physicians' competence. The open-ended responses provided additional evidence. For instance, participant #119 who was assigned to the *Feign Comprehension* condition reported in the open-ended bot-



check question, “I understand that he might not have a solid understanding of English idioms. That doesn’t make him a bad doctor. My issue is that he didn’t have the self-confidence to ask the question so he could make sure he understood what I was saying.” Apparently, participant #119 felt that the IMG’s lack of linguistic or cultural knowledge (i.e., “English idioms”) did not impair their competence as a physician, but the perception that the IMG was attempting to hide their lack of understanding could negatively influence the evaluation of the overall interaction (e.g., patient satisfaction). Interestingly, perceiving IMGs as attempting to understand patient language use does not necessarily mean that patients view the IMGs as lacking linguistic and cultural competency. It is possible that the IMGs’ attempt to ask for clarifications is a professional behavior that indicates honesty and caring.

The results regarding the association between the inferred goals and patient evaluation of IMGs echo previous studies on goal inference in different research contexts. The study results revealed that patient inference of hiding linguistic incompetence goal was negatively associated with several patient evaluation outcomes, whereas the inferred goals of understanding patient language use and establishing a trusting relationship were positively associated with the patient evaluation outcomes. The hiding linguistic incompetence goal can be categorized as a self-oriented goal, referring to goals that focus on one’s own needs, such as self-image, whereas the goal of understanding patient language use is an other-oriented goal, which concerns relational partners’ needs; the inferred goal of establishing a trusting relationship is a relational goal given its focus on relationship development and maintenance (Samp, 2013). In other research contexts, self-oriented goals are often associated with negative perceptions, whereas other-oriented and relational-focused goals are related to positive perceptions. For example, in the context of topic avoidance, individuals who perceive that their partners want to protect themselves report less

satisfaction and more hurt and relational distance than individuals who perceive relationship-protection goals (Palomares & Derman, 2019). In arguments, increases in partners' self-focused goals are negatively associated with people's perceived argument resolvability (Worley & Samp, 2018). The current study corroborates previous findings that as people's inference of their partners' other-oriented and relationship-focused goals increases, they may also have more satisfying interactions and higher evaluation of their conversational partners.

In sum, the current investigation observed positive associations between patient inferred goal of establishing a trusting relationship and all the patient evaluation outcomes, indicating the essential role of trust in IMG-patient relationships. In addition, patient inferred goals of hiding linguistic incompetence and understanding patient language use were associated with different patient outcomes in distinctive ways.

#### ***Indirect, Direct, and Conditional Indirect Effects on Patient Evaluation***

H9 predicted that IMGs' verbal strategies on patient evaluation would be mediated by patient inferred goals. Many indirect paths from IMGs' verbal strategies to patient evaluation through patient inferred goals were statistically significant. For example, when IMGs feigned comprehension (relative to being blunt and providing rationale), patients inferred less of the understanding patient language use goal, which was in turn positively associated with patient evaluation of IMGs' communication competence, expertise, warmth, and patient satisfaction. Generally, relative to the other two verbal strategies, feigning comprehension, which was made noticeable to participants in the current study, typically had a negative indirect effect on patient evaluation outcomes through patient inferred goals. Although feigning comprehension is a strategy adopted by many NNSs to deal with their lack of comprehension of NSs (Cohen, 2014; Terui, 2012), IMGs who adopt this strategy may not be interpreted by patients as attempting to

help patients or build a trusting relationship with patients if IMGs fail to hide their lack of comprehension, which could in turn cause negative evaluation of IMGs and the overall conversation. From a politeness theory perspective, feigning comprehension can be treated as not performing the face-threatening act (Brown & Levinson, 1987), which could potentially reduce threats to IMGs' professional identity. Feigning comprehension might be effective if conversational partners are not aware of NNSs' lack of comprehension in the immediate conversational turn but might lead to negative repercussions if the strategy becomes noticeable to NSs (Terui & Hsieh, 2020). Although successful feigning comprehension can make conversations smoother (Terui, 2012), the indirect effects observed in the current study suggest that feigning comprehension is less effective than being blunt and providing rationale if it is recognized by conversational partners. Further, the results also support the assumption in the multiple goals perspective that communicators' messages can impact conversation evaluation through the mediating role of goal inferences (Caughlin, 2010).

H11 predicted that IMGs' nonverbal behaviors would have an indirect effect on patient evaluation of IMGs' warmth and patient satisfaction through the inferred goals. The study results revealed that compared to low affiliative nonverbal behaviors, IMGs' high affiliative nonverbal behaviors had a positive indirect effect on all the patient evaluation outcomes through the inferred goal of establishing a trusting relationship. Further, the indirect effects of verbal behaviors on patient evaluation were dependent on the nonverbal behaviors they adopted. When IMGs provided rationale and feigned comprehension, their high affiliative nonverbal behaviors elicited more patient inference of establishing a trusting relationship goal than low affiliative nonverbal behaviors. However, the difference in goal inference between high and low affiliative nonverbal behaviors was smaller when IMGs provided rationale, albeit still significant, relative

to when IMGs feigned comprehension. In healthcare encounters, nonverbal behaviors are essential for building trust between physicians and patients (Hillen et al., 2015). Affiliative nonverbal behaviors, such as making eye contact and engaging in an open posture, can be adopted by physicians to signal their empathy and warmth (Kiesler & Auerbach, 2003). In particular, high affiliative behaviors are powerful in affecting patient evaluation of IMGs when combining with the verbal strategy of feigning comprehension.

Apart from the indirect effects, IMGs' high affiliative nonverbal behaviors (relative to low affiliative nonverbal behaviors) had a direct, positive effect on patient evaluation of IMGs' communication competence, warmth, and patient satisfaction. The results were consistent with previous studies that found nonverbal affiliative behaviors impacted patients' judgment of physicians, such as warmth and patient satisfaction (Kiesler & Auerbach, 2003; Kraft-Todd et al., 2017; Mast, 2007). Notably, IMGs' nonverbal behaviors did not have significant direct effects on patient evaluation of IMGs' linguistic competence, cultural competency, and expertise. The results further demonstrate that patient evaluation of different aspects of IMGs' competence is nuanced. Engaging in affiliative nonverbal behaviors might make patients feel that IMGs are communicatively competent and warm, but simply changing nonverbal behaviors might not fully compensate for the lack of linguistic competence, cultural competency, and physician expertise. As proposed in the stereotype content model (Cuddy et al., 2011), when individuals perceive an out-group member as warm, it does not necessarily mean that they will also perceive them as competent. The results demonstrate the role of nonverbal behaviors in affecting people's evaluation of the communicative aspect of the interaction, but nonverbal behaviors' direct impact on other aspects of physician competence is limited.

In summary, both IMGs' verbal and nonverbal strategies had significant indirect effects on patient evaluation through patient inferred goals. The indirect effect of nonverbal behaviors on patient evaluation was contingent upon the verbal strategies they adopted. IMGs' nonverbal behaviors also positively directly affected patient evaluation of IMGs' warmth, communication competence, and patient satisfaction, but they did not directly affect the patient evaluation of IMGs' linguistic, cultural, and medical competence.

### **Theoretical Implications**

The current dissertation contributes to four sets of literature, including IMG-patient communication, NNSs-NSs interactions, the multiple goals perspective, and the discrepant verbal-nonverbal profile theory (DNVP). In the following sections, the dissertation's contributions to each set of literature are discussed.

#### ***IMG-Patient Communication***

This dissertation extends previous research on IMG-patient communication by examining a specific communicative challenge that IMGs encounter and communicative strategies IMGs might use to deal with it. Previous studies have predominantly focused on identifying IMGs' language and cultural barriers when communicating with domestic patients, such as understanding colloquial language, practicing patient-centered care, and responding to patients' negative emotions (for reviews, see Michalski et al., 2017; Pilotto et al., 2007). Despite the importance of identifying IMGs' communicative challenges, few studies have investigated how IMGs can effectively handle these communicative challenges (for an exception, see Jain & Krieger, 2011) and how U.S. patients assess IMGs' strategies. This dissertation draws on previous studies, the multiple goals perspective, and a pilot study conducted at a teaching hospital to identify three potential strategies IMGs might adopt to manage their lack of

comprehension of U.S. patients' language use, including being blunt, feigning comprehension, and providing rationale. The three verbal strategies can be accompanied by either high or low affiliative verbal behaviors to accomplish their personal goals. Rather than offering repetitive evidence on "what" language and cultural challenges IMGs are faced with during medical encounters, the study expands IMG-patient communication by understanding "how" IMGs can deal with one specific language and cultural challenge.

In addition, the current investigation expands the field of IMG-patient communication by examining the patient perspective and patient assessment of a communication aspect in IMG-patient interactions. Past research tended to describe IMGs' subjective experiences in healthcare encounters (e.g., Chen et al., 2010; Gasiorek & van de Poel, 2012). The small body of research that has investigated the topic of IMG-patient interactions from the patient perspective only studied patient evaluation of physicians' physical or linguistic characteristics that mark their social identities, such as the effect IMGs' ethnicity and accent on patient assessment of IMGs' competence (e.g., Baquiran & Nicoladis, 2019; Rubin et al., 1997). Rather than focusing on the effect of IMGs' physical and linguistic characteristics that are immutable, the dissertation concentrated on the communicative aspect of IMG-patient interactions. By holding IMGs' physical and linguistic characteristics as consistent across different experimental conditions, the study illustrates that differences in IMGs' verbal and nonverbal communication may still result in varying patient perceptions and evaluation of IMGs and their interactions with IMGs. Although IMGs' ethnic attributes and linguistic features can affect how patients perceive them, how IMGs communicatively deal with challenging moments in healthcare encounters can also shape patients' perceptions of IMGs and patient satisfaction.

Furthermore, the dissertation extends the literature on IMG-patient communication by applying an interpersonal communication theory to this context. Many studies in the context of physician-patient communication do not rely on theoretical frameworks as a guide, and this is a particularly salient pattern in IMG-patient communication research. Most studies on IMG-patient communication are exploratory and focus on describing IMGs' communication barriers without referring to theoretical frameworks (e.g., Chen et al., 2010). Bylund et al. (2012) argued that researchers and practitioners should apply interpersonal communication theories to the context of physician-patient communication, because physician-patient communication is essentially interpersonal. One of the theories Bylund et al. (2012) encouraged practitioners to apply is goals-plans-action theory (GPA), which belongs to the multiple goals perspective (Caughlin, 2010). The current study draws on the assumptions from GPA and applies concepts in the multiple goals perspective to the context of physician-patient communication. The application of this framework offers a theoretical lens to understand how physicians' communication affects patient assessment of physicians and their interactions and the mechanisms underlying the effects. which adds explanatory and predictive values to research on IMG-patient communication.

### ***Native Speakers (NSs)-Non-Native Speakers (NNSs) Interactions***

The findings regarding the effect of IMGs' verbal strategies on patient perceptions and evaluation of IMGs echo and expand research on NNSs-NSs interactions. Many linguistic studies have observed that NNSs often rely on cover strategies when lacking understanding of NSs in conversations, in order to disguise their incompetent linguistic identity (Cohen, 2014; Wong, 2000). From NNSs' perspective, feigning comprehension (e.g., saying "yeah, yeah") allows them to have smooth conversations, helps them manage their psychological distress, and protects them from being viewed as unprepared and foolish (Cohen, 2014; Terui, 2012; Terui &

Hsieh, 2020). However, NNSs' adoption of feigning comprehension could potentially result in NSs' negative perceptions and behaviors. For instance, when NNSs successfully hide their lack of understanding, NSs might perceive NNSs as too reserved and lacking competence because NNSs do not actively respond to NSs' comments (Nakane, 2006). Once NNSs' pretending attempt becomes noticeable to NSs, NSs might view NNSs as incompetent and insincere or even challenge and patronize them during conversations (Terui & Hsieh, 2020). Illuminating these findings, the current investigation found that IMGs' feigning comprehension, when made noticeable to U.S patients, was perceived as attempting to disguise IMGs' incompetent linguistic identity, which in turn was related to a negative patient evaluation of IMGs' linguistic competence, cultural competency, warmth, and patient satisfaction. The negative indirect effect of salient feigning comprehension on patient evaluation outcomes was particularly strong when it was accompanied by low affiliative nonverbal behaviors. Put differently, IMGs' attempt to feign comprehension to disguise their lack of linguistic competence might be counterproductive if the attempt becomes visible to U.S. patients. Not only does feigning comprehension threatens IMGs' linguistic competence, but it can also result in patient negative impressions of IMGs' cultural competency or even the whole interaction. Although engaging in high affiliative nonverbal behaviors can potentially compensate for the negative effect of feigning comprehension on patient evaluation, it is still not as effective as being blunt and providing rationale.

### ***Multiple Goals Perspective***

The findings of the current study contribute to the multiple goals perspective (Caughlin, 2010) in various ways. First, the study applies the multiple goals perspective, which is an interpersonal communication theory, to an intercultural context. Traditionally, the multiple goals perspective has been used to examine message production, coordination, and interpretation in



interpersonal relationships. For instance, researchers have drawn on the assumptions of the multiple goals perspective to investigate topic avoidance in close relationships (Donovan-Kicken & Caughlin, 2010; Donovan-Kicken et al., 2013), HIV status disclosure (Caughlin et al., 2009), and family conversations about end-of-life care (Scott & Caughlin, 2014). Few studies have situated the multiple goals perspective within a cultural context and examined communicative challenges that are culturally challenging (for exceptions, see Guntzviller, 2017; Guntzviller & Wang, 2018; Pines et al., 2019). The current dissertation applies the multiple goals perspective to a communication challenge arising from cultural differences between IMGs and U.S. patients. The study results suggest that in an intercultural context, people's inference of their conversational partners' cultural identity goals (i.e., hiding linguistic incompetence) is associated with the evaluation of their partners and the conversations. This application speaks to Wilson's (2019) call for considering the role of social identity in goal inferences and demonstrates the explanatory power and potential utility of the multiple goals perspective in intercultural contexts.

Second, the current study provides additional evidence to support assumptions in the multiple goals perspective regarding the association between messages, goal inferences, and evaluation. The multiple goals perspective posits that conversational partners' messages affect communicators' perceptions of their conversational partners' interaction goals, which in turn influence communicators' subjective evaluation of specific communication episodes (Caughlin, 2010). A previous study found that communicators' inferred goals can shape their feelings and perceptions (Palomares & Derman, 2019). To extend Palomares and Derman's (2019) work on goal inferences, the current study modeled goal inferences as mediators to examine how they might explain the psychological mechanism underlying the association between messages and outcomes (O'Keefe, 2003). The indirect effects of IMGs' communication on patient source

appraisals and satisfaction support the multiple goals assumption that partners' messages influence communicators' beliefs about partners' goals, which in turn affect patient evaluation. In other words, the ways in which conversational partners communicate, both verbally and nonverbally, can shape people's perceptions of what their conversational partners attempt to accomplish, which in turn shape people's perceptions of their conversational partners.

Third, the findings regarding the role of IMGs' nonverbal behaviors extend the multiple goals perspective by demonstrating how people's beliefs of partners' goals and evaluation of their conversational partners are shaped by the combination of multiple communication channels. Past studies testing the multiple goals perspective have predominantly focused on how verbal messages attending to different interaction goals impact people's perceptions and evaluation (e.g., Caughlin et al., 2009; Donovan-Kicken et al., 2013; Scott & Caughlin, 2014). Few studies have examined the effect of conversational partners' nonverbal behaviors and the potential interaction effect between verbal and nonverbal behaviors on people's evaluation (for exceptions, see Grebelsky-Lichtman, 2021; Trees, 2005; Trees & Manusove, 1998). O'Keefe and Delia (1982) argued that people can rely on a strategy of separation to accomplish multiple goals, such as managing multiple goals temporally (i.e., temporal separation) or through separate message channels simultaneously (i.e., simultaneous separation). Even though O'Keefe and Shepherd (1987) predicted that temporal separation would lead to higher interpersonal success than the prioritizing strategy (i.e., prioritizing one goal over others), their empirical test found that temporal separation (e.g., being blunt and then elaborating with repairs and remedies) was associated with declined interpersonal success. This counterintuitive result can be explained by the fact that repairs and remedies may not fully wipe out the negative impression the face-threatening act creates (O'Keefe & Shepherd, 1987). The current study focuses on the strategy of

simultaneous separation, suggesting that when IMGs were blunt or provided rationale while requesting U.S. patients for explaining an idiom, using high affiliative nonverbal behaviors did not lead to more patient inference of the understanding patient language use goal than low affiliative nonverbal behaviors. However, patients inferred more of the understanding patient language use goal when IMGs used high affiliative nonverbal behaviors to accompany feigning comprehension than using low affiliative nonverbal behaviors. The same pattern was observed for the patient inferred goal of establishing a trusting relationship. Although IMGs' high affiliative nonverbal behaviors elicited more patient inference of establishing a trusting relationship than low affiliative nonverbal behaviors, the effect was relatively smaller when IMGs provided rationale than when they feigned comprehension. Broadly speaking, the findings indicate that communicators' interpretation of conversational partners' messages is based on the interplay of verbal and nonverbal communication channels. The effect of verbal and nonverbal communication on people's inferred goals is not just additive (see also Trees & Manusove, 1998). The interaction effect of verbal and nonverbal behaviors depends on different inferred goals. For example, using another communication channel (e.g., nonverbal communication) to accomplish the goal of understanding patient language use may simply become repetitive if one's verbal communication channel has already accomplished this goal. Nevertheless, if conversational partners do not accomplish their interaction goals through one communication channel, relying on the other channel to achieve the interaction goals might significantly increase people's perceptions of their conversational partners' goals, which in turn affects people's perceptions and evaluation. Nonverbal affiliative behaviors may add to conversational partners' inferred goal of establishing a trusting relationship regardless of speakers' verbal strategies, but the additive

effect is relatively larger if the goal has not been accomplished through the verbal communication channel (i.e., feign comprehension).

### ***Discrepant Verbal-Nonverbal Profile Theory***

DVNP might not be fully applicable to the current context, as the findings regarding the interaction effect of IMGs' verbal and nonverbal strategies on patient inferred goals did not fully support it. DVNP posits that leakage discrepancy (i.e., positive verbal and negative nonverbal behaviors) is likely to be perceived as insincere and deceiving, whereas adaptive discrepancy (i.e., negative verbal and positive nonverbal behaviors) might be considered cooperative (Grebelsky-Lichtman, 2021). However, the current dissertation found that IMGs' use of providing rationale verbal strategy and low affiliative nonverbal behaviors (i.e., leakage discrepancy) was rated similar to IMGs' use of feigning comprehension and high affiliative nonverbal behaviors (i.e., adaptive discrepancy) on patient inference of the establishing a trusting relationship goal. Further, the leakage discrepancy (i.e., providing rationale and low affiliative nonverbal behaviors) were actually rated as the highest on the inferred goal of establishing a trusting relationship among all low affiliative conditions (see Figure 4).

The results that seemed contradictory to DVNP can be explained in various ways. DVNP was mainly used to explain inconsistency of affect expression in verbal and nonverbal communication channels, suggesting that inconsistent affective communication in verbal and nonverbal channels might imply deception (Grebelsky-Lichtman, 2021; Rotenberg et al., 1989). In the current study, although IMGs' nonverbal behaviors might convey affect, the manipulations of the verbal strategies focused only on the act of asking for clarifications rather than conveying affect (e.g., showing empathy). Previous studies on discrepant verbal-nonverbal communication posit that negative impressions form when verbal and nonverbal behaviors are generally

*antithetical* to each other (Weisbuch et al., 2010). However, the verbal and nonverbal situations in the present study, albeit not fully aligned in some conditions, were not antithetical to each other. Another possible explanation for the results is that DVNP can be applied to certain relationships but not others. Many studies that have tested DVNP were conducted in the context of parent-child communication. In other contexts, such as organizational communication, evaluation of peers is more dependent on nonverbal components, whereas perceptions of supervisors are judged more based on verbal components (Zahn, 1980). Thus, the dynamics in IMG-patient communication might shape patients' perceptions of IMGs' goals and their impression of IMGs, offering results that are different from DVNP principle that has been supported in the parent-child context.

### **Practical Implications**

The current investigation yields several practical suggestions for IMGs and patients. First, IMGs should be advised to admit their lack of comprehension of U.S. patients rather than pretending to understand them. Past research has found that IMGs feel uncertain and anxious when not being able to understand patients' language use and culturally relevant talk, and therefore choose to pretend they understand (Skjeggstad et al., 2017). The current investigation found that IMGs' feigning comprehension, when made visible to patients, led to lower patient evaluation of IMGs' competence, warmth, and patient satisfaction through patient inference of IMGs' goals than being blunt and providing rationale. The findings suggest that asking patients a clarification question bluntly (e.g., "What do you mean by...?") and providing rationale are more appropriate verbal strategies than pretending to understand, even though these two strategies inevitably reveal one's lack of linguistic and cultural knowledge. Being blunt and providing rationale are probably perceived by patients as more honest, genuine, and professional than

feigning comprehension. Importantly, lacking comprehension of patient language use might be a good opportunity for IMGs to engage in appropriate verbal strategies to empower patients. IMGs, especially those who were born and trained in Asian countries, struggle with practicing patient-centered care because the physician-patient relationship in their home countries is more paternalistic (Michalski et al., 2017). Asking patients to clarify their use of idioms allows patients to participate actively in the conversation. Sometimes, IMGs emphasize their accent and use their cultural background as a conversational starter to build rapport with patients (Jain & Krieger, 2011). In the current study, asking patients to clarify their use of idioms can be perceived as trying to empower and build rapport with patients. For example, participant #54 who was assigned to a *Providing Rationale* condition noted, “I felt like it was a bonding moment, where I got to teach someone smarter than me.” The effectiveness of being blunt and providing rationale implies that IMGs can seize the opportunity to engage in patient-centered care by asking for clarifications.

Second, IMGs should be advised to engage in high affiliative nonverbal behaviors rather than low affiliative nonverbal behaviors when appropriate. Findings revealed that IMGs’ high affiliative nonverbal behaviors elicited more patient inference of the establishing a trusting relationship goal, which in turn was associated with all the patient evaluation outcomes. The negative indirect effect of low affiliative nonverbal behaviors on patient evaluation was particularly salient when combined with the verbal strategy of feigning comprehension. Further, IMGs’ nonverbal behavior also had direct effects on patient evaluation of IMGs’ communication competence, warmth, and patient satisfaction. These results suggest that engaging in high affiliative nonverbal behaviors, such as leaning towards patients and making eye contact, can potentially signal IMGs’ intention to build a trusting relationship. Patients’ evaluation of IMGs,

especially their communicative competence, warmth, and patient satisfaction, is heavily influenced by IMGs' nonverbal behaviors. Thus, IMGs should be encouraged to engage in high affiliative nonverbal behaviors when interacting with patients. Nevertheless, this suggestion should be caveated. In some situations, components of high affiliative nonverbal behaviors might be considered inappropriate (e.g., smiling while breaking bad news). IMGs should also be advised that the sample in the current study was comprised of White men born in the U.S., but the patient population in the United States is culturally diverse. IMGs should consider whether their high affiliative nonverbal behaviors will be perceived as offensive because people from certain cultural groups feel uncomfortable about direct eye contact and close proximity (Sirois et al., 2013). Thus, designers of communication training programs should teach IMGs ways to be culturally sensitive (e.g., assess situations and patients' cultural backgrounds) instead of equipping them with a "one size fits all" strategy.

Finally, the current study may also hold implications for U.S. patients when interacting with IMGs. Albeit not the focus of the current study, results showed that U.S. patients' xenophobia towards physicians from India, which was used as a control variable, was negatively associated with patient inferences of IMGs' prosocial goals and patient evaluation of IMGs. In other words, U.S. patients' pre-existing attitude towards foreigners may bias their evaluation of IMGs. Although it is difficult to reduce individuals' bias towards certain groups and train patients, the communication between IMGs and patients might be more coherent and satisfying if patients are aware of their bias towards foreign physicians. Physician-patient communication is a mutually influential and collaborative process (Street, 1992). If U.S. patients are aware of their roles in healthcare encounters, are able to identify biases they may have, and accommodate IMGs, the communicative challenge can be more easily resolved.

## **Limitations**

The methodologies applied to this dissertation led to several limitations. First, the current study intentionally recruited White adult men born and residing in the United States as participants. The study recruited this homogeneous sample to ensure that participants were self-identified with the patient shown in the message stimuli, because participants were asked to imagine that they were the patients in the videos. In addition, the homogeneous sample can also eliminate the potential effect of gender discordance, as gender discordance between physicians and patients could potentially influence the results (Thornton et al., 2011). If the sample is heterogeneous, it is possible that participants from different demographic groups will have distinct perceived similarity with the patient in the videos, which is likely to impact patient perceptions and evaluation. Given the already complicated design and limited budget for the current dissertation, it is also challenging to create videos of patients from all demographic backgrounds and control their performance consistent (e.g., tone, speech rate). Thus, the study recruited this homogeneous sample. This decision inevitably created a limitation that the results regarding patient inferred goals and patient evaluation might not be generalized to other demographic groups (e.g., women, and other racial groups). However, studies in health communication, especially those focused on racial bias (e.g., implicit bias), tend to oversample White participants as the first step to exploring the phenomena (e.g., Devine et al., 2012).

Second, a South Asian American man was hired to play the role of IMG in the message stimuli, and therefore the study results may not be applied to IMGs from other cultural backgrounds, such as East Asia and Middle East. The study recruited an actor whose ethnicity is South Asian because IMGs from this ethnic background make up the largest portion in the whole IMG population (Murphy, 2018). Practically, having one actor performing the IMG for all the



experimental conditions ruled out the effect of many confounds, such as physician attractiveness. The downside of using one actor of the South Asian ethnicity to perform the IMG was that the results might only be used to explain interactions between U.S. patients and IMGs from South Asian countries. Politically, India is considered an ally country to the United States (Shahin & Huang, 2019). In the current sample, the average level of participants' xenophobia towards Asian Indians was low ( $M = 1.85$ ,  $SD = .98$ ), and participants' xenophobia was negatively associated with all patient evaluation outcomes. Study results might be different if the IMG in the message stimuli is from a country that is considered a rival country to the U.S. politically. In addition, the actor of the South Asian ethnicity was born and grew up in the U.S. and was trained to speak a South Asian accent, which might create a slightly different impression on participants than a South Asian IMG who grew up in a South Asian country. The intersectionality of the IMG's gender, race, and nationality might also impact patient perceptions and evaluation.

Third, the lack of external validity of the current study should be acknowledged. The sample in the current study was recruited from an online research panel. On average, participants in online research pools often have higher socioeconomic status than the average socioeconomic status in the U.S. population (Sheehan, 2018). As noted in the method section, the sample in the current study had moderate to high educational level (i.e., more than 50% received at least a bachelor's degree) and slightly more liberal political orientation on average ( $M = 61.23$ ,  $SD = 29.48$ ). Thus, the results were limited in terms of the generalization to samples that have relatively lower socioeconomic status and more conservative political orientation. In addition, the study used the first 20 to 30 seconds of IMG-patient interactions as the message stimuli to enhance the saliency of manipulations. In fact, interactions between IMGs and patients in realistic situations are much longer than a 30-second episode, and the subsequent conversations

can also influence patient appraisals of IMGs and patient overall satisfaction. For example, it is possible that the IMG performs well in dealing with their lack of comprehension of patients' use of English idioms but fails other aspects of patient-centered care in the next few conversational turns. Patients may evaluate the IMG negatively despite the IMG's communication sophistication at the beginning of the conversation. Furthermore, the experimental design obviously limited the external validity of the study results because real IMG-patient interactions are different from showing patients video recordings of physician-patient interactions. However, as compared to most message effect studies on physician-patient communication that used texts or physicians' pictures as messages (e.g., Perrault et al., 2022), the video recordings of IMG-patient interactions may be higher in external validity. Despite the lack of external validity, the online experiment had the merit of high internal validity because it manipulated IMGs' verbal and nonverbal strategies, allowed for different combinations of these strategies, and ruled out potential confounds.

Finally, the way in which the current study manipulated the patient's behaviors might also impact the study results. In the study, the actor who played the patient role pointed out the IMG's lack of comprehension bluntly (i.e., "You don't understand the phrase out of sorts/frog in my throat?") in every condition. The purpose of including this blunt question was to ensure that participants perceived that the IMG did not fully understand the idioms, especially for the feigning comprehension conditions. In the open-ended responses, however, some participants reported that the patient was impolite and disrespectful to the IMG by questioning the IMG's lack of linguistic knowledge bluntly. This perception might slightly impact those participants' evaluation of the IMG as they might compare the patient and the IMG's communicative behaviors. However, if the patient in the video does not point out the IMG's lack of

comprehension, the manipulation of feigning comprehension might fail because many participants will perceive the IMG who feigns comprehension as actually grasping the meaning of the idioms.

### **Future Directions**

The limitations of the current dissertation can be addressed through future research. Future studies may consider recruiting a more heterogeneous sample or samples from other demographic backgrounds. For instance, scholars can recruit both men and women to evaluate IMGs' verbal and nonverbal communicative behaviors and investigate whether the patients' gender will yield different results and conclusions. Future research could also replicate the study by recruiting samples from other racial groups. The patient population in the U.S. is racially and culturally diverse. Thus, IMGs are likely to encounter patients from different racial and cultural backgrounds and encounter different communication challenges. Future studies, for example, can recruit an African American actor to play the patient role and instruct the actor to speak African-American Vernacular English (AAVE). Examining the research topic within a wide range of samples could offer more generalized findings and practical recommendations for IMGs to improve their cultural competency in healthcare settings.

As noted previously, the current dissertation hired a South Asian actor to play the role of IMG, and patient evaluation of IMGs might be impacted by IMGs' cultural backgrounds. Instead of holding IMGs' social identity constant across experimental conditions, future studies can manipulate multiple aspects of IMGs' social identity and examine how IMGs' social identity (e.g., ethnicity, gender, accent) impacts patient inferred goals and patient evaluation of IMGs' verbal and nonverbal strategies to deal with their lack of comprehension. Communication accommodation theory (CAT) posits that speakers' group identity is likely to shape their

conversational partners' perception of accommodative and non-accommodative behaviors (Gallois et al., 2005). Thus, it is likely that IMGs' group identity will moderate the association between IMGs' communication strategies and patient inferred goals. As the current study only focuses on the effect of IMGs' communication on patient inferred goals, and previous studies mainly concentrated on the effect of IMGs' social identity on patient evaluation (e.g., Rubin et al., 1997), a promising direction is to investigate how IMGs' group identity and communication strategies interact to impact patient inferred goals and patient evaluation of IMGs.

To address the methodological limitations in the current study, future research should examine the hypotheses and research questions in more naturalistic settings. The dissertation selected the first 20 to 30 seconds of IMG-patient interactions to enhance internal validity but inevitably compromised the study's external validity. Scholars could embed the manipulated conversational episodes in longer conversations and assess patient inferred goals and evaluation of IMGs. Researchers would then be able to examine whether the effects found in the current study would be reduced or wiped out in longer IMG-patient conversations. In longer conversations, patient perceptions of IMGs' interaction goals may also change (Worley & Samp, 2018). Investigating patient-perceived goal trajectory and its association with patient evaluation outcomes by pausing the videos and asking patients to report their goal inferences at different time points would also extend the multiple goals perspective (see suggestions from Worley et al., 2020). Moreover, future research could manipulate IMGs' verbal and nonverbal strategies to manage their lack of comprehension in simulated interactions and ask standardized patients to report their inferred goals and evaluation of IMGs. Although simulated interactions are not the same as real physician-patient interactions, manipulating physicians' communication strategies in real physician-patient interactions may potentially lead to ethical dilemmas. Examining the

research topic in simulated interactions is probably an effective and ethical way to balance the study's internal and external validity.

Theoretically, the study results did not fully support DVNP. One possibility was that when operationalizing discrepant verbal-nonverbal communication, the current study did not select verbal and nonverbal messages that are antithetical to each other. As a result, it is difficult to make comparisons between the multiple goals perspective and the DVNP. Future studies can examine these two theoretical perspectives in other research contexts, such as social support provision. For example, social support researchers can compare two types of discrepant verbal-nonverbal profiles: (a) inconsistency between low verbal person-centeredness and high affiliative nonverbal behaviors and (b) inconsistency between high verbal person-centeredness and low affiliative nonverbal behaviors. This context allows researchers to study affect communication, which is more aligned with DVNP, and test the effect of inconsistent verbal and nonverbal messages on patient evaluation. The current study did not test the responsiveness part of DVNP, which concerns how conversational partners verbally and nonverbally respond to communicators' verbal-nonverbal discrepancy. Future studies can test communicators' response to verbal-nonverbal discrepancy in the contexts of social support and physician-patient interactions.

Finally, researchers can consider testing the hypotheses in other types of NNSs-NSs interactions. For instance, in the instructional communication context, teachers who were born or trained in other countries may also encounter situations in which students use colloquial language to communicate. The hypotheses proposed in the current study can be tested in this context to examine whether the study results can be generalized across different contexts. Further, the research topic of evaluating strategies for managing the lack of comprehension can be

examined in contexts in which the relationships between communicators are more equal, such as intercultural friendships or romantic relationships

## **Conclusion**

In conclusion, the current dissertation advances research on IMG-patient communication by investigating how U.S. patients evaluate IMGs' communicative strategies to deal with their lack of comprehension. Drawing on the multiple goals perspective, the study results revealed that, compared to when IMGs were blunt and provided rationale, U.S. patients inferred less of the prosocial goals and more of the self-focused goals when IMGs feigned comprehension, which also was negatively associated with patient evaluation of IMGs and patient satisfaction. The indirect effect of IMGs' nonverbal behaviors on patient assessment was conditioned by the verbal strategies in which they adopted, such that high affiliative nonverbal behaviors could complement goals that were not accomplished through the verbal communication channel. The findings highlight the importance of being upfront and warm in the physician-patient relationship and advance the multiple goals perspective by examining how multiple communication channels can work collectively in impacting communicators' perceptions.

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## APPENDIX A: MESSAGE STIMULI

### Message Stimuli Scenario 1: “Out of Sorts”

#### Scenario A: “Out of Sorts”

#### Instructions

Imagine you are experiencing the following health issue:

Five days ago, you started feeling a bit sick. You have had some symptoms such as sore throat and runny nose, and they are getting worse, which is annoying. Today, you decide to visit your typical doctor’s office, but your doctor is on vacation so you are seeing someone else. This is your first visit with this doctor. Please watch the video below that depicts the first few seconds of your interaction with the doctor, and imagine that you are the patient in the video.

Conditions	Being Blunt (Condition I)	Feigning Comprehension (Condition II)	Providing Rationale (Condition III)
Scenario A	<p>H: Mr. White?  P: Yes.  H: Hi, I’m Dr. Patel. Nice to meet you.  How are you doing today?  P: I don’t feel good and am out of sorts.  <b>H: What do you mean by “out of sorts”?</b>  P: You don’t understand the phrase “out of sorts”? Well, it means I’m not feeling like normal. This sore throat is annoying.  H: Oh, okay.</p>	<p>H: Mr. White?  P: Yes.  H: Hi, I’m Dr. Patel. Nice to meet you.  How are you doing today?  P: I don’t feel good and am out of sorts.  <b>H: (Pause) yeah, yeah. Well...(Pause)</b>  P: You don’t understand the phrase “out of sorts”? Well, it means I’m not feeling like normal. This sore throat is annoying.  H: Oh, okay.</p>	<p>H: Mr. White?  P: Yes.  H: Hi, I’m Dr. Patel. Nice to meet you.  How are you doing today?  P: I don’t feel good and am out of sorts.  <b>H: I grew up in India, and I do not speak English as my first language, so I’m not familiar with some American phrases. What do you mean by “out of sorts”?</b>  P: You don’t understand the phrase “out of sorts”? Well, it means I’m not feeling like normal. This sore throat is annoying.  H: Oh, okay.</p>

**Message Stimuli Scenario B:**

**“Frog in My Throat”**

**Instructions**

Imagine you are experiencing the following health issue:

Five days ago, you started feeling a bit sick. You have had some symptoms such as sore throat and runny nose, and they are getting worse, which is annoying. Today, you decide to visit your typical doctor’s office, but your doctor is on vacation so you are seeing someone else. This is your first visit with this doctor. Please watch the video below that depicts the first few seconds of your interaction with the doctor, and imagine that you are the patient in the video.

Conditions	Being Blunt (Condition I)	Feigning Comprehension (Condition II)	Providing Rationale (Condition III)
Scenario B	<p>H: Good morning, Mr. White.  P: Morning.  H: I’m Dr. Patel. What can I do for you?  P: I don’t feel good. (Cough), sorry, I just can’t get rid of this frog in my throat.  <b>H: Could you explain what you mean by “frog in your throat”?</b>  P: You are not familiar with the phrase “frog in the throat”? It means I’m having trouble talking. This sore throat is annoying.  H: Oh, okay.</p>	<p>H: Good morning, Mr. White.  P: Morning.  H: I’m Dr. Patel. What can I do for you?  P: I don’t feel good. (Cough), sorry, I just can’t get rid of this frog in my throat.  <b>H: (Pause) Uh-huh... Uh-huh. Okay...(Pause)</b>  P: You are not familiar with the phrase “frog in the throat”? It means I’m having trouble talking. This sore throat is annoying.  H: Oh, okay.</p>	<p>H: Good morning, Mr. White.  P: Morning.  H: I’m Dr. Patel. What can I do for you?  P: I don’t feel good. (Cough), sorry, I just can’t get rid of this frog in my throat.  <b>H: I grew up in India, and I am a non-native speaker, so some American phrases are new to me. Could you explain what you mean by “frog in your throat”?</b>  P: You are not familiar with the phrase “frog in the throat”? It means I’m having trouble talking. This sore throat is annoying.  H: Oh, okay.</p>

## APPENDIX B: PILOT TEST QUESTIONNAIRE

Imagine that you were the patient in message you just read and answer the following questions. There is no right or wrong answer to each question. Please choose the one that best represents your perceptions.

*The following questions ask about what you think Dr. Patel wanted to accomplish during the interaction you just read (1 = Strongly Disagree; 7 = Strongly Agree).*

### Understanding Patients' Language Use Goal (Self-Created Measure)

1. Dr. Patel was trying to understand what I meant by "out of sorts"/ "frog in my throat".
2. Dr. Patel was trying to have a better understanding of the idiom I used.
3. Dr. Patel's goal was to fully understand what I meant by "out of sorts"/ "frog in my throat".
4. Dr. Patel wanted to understand my language use.
5. Understanding the phrase I used was Dr. Patel's purpose.
6. Dr. Patel wanted to know what I meant by "out of sorts"/ "frog in my throat".

### Understanding Patients' Overall Condition Goal (Self-Created Measure)

1. Dr. Patel was trying to understand my health condition.
2. Dr. Patel was trying to have a comprehensive understanding of my situation.
3. Dr. Patel's goal was to know what bothered me.
4. Understanding my health condition was Dr. Patel's goal.
5. Dr. Patel wanted to know more about my symptoms.
6. Dr. Patel was trying to understand my situation.

### Hiding Linguistic Incompetence (Self-Created Measure)

1. Dr. Patel was trying to hide his lack of understanding of phrases in English.
2. Dr. Patel wanted to cover his lack of understanding of my language use.
3. Dr. Patel was trying to appear as if he understood what I meant.
4. Dr. Patel pretended that he understood the phrase I used even if he didn't.
5. Dr. Patel's goal was to pretend to understand phrases in English.
6. Hiding the lack of understanding of English phrases was Dr. Patel's goal for this interaction.

### Establishing a Trusting Relationship Goal (Self-Created Measure)

1. Dr. Patel was trying to establish a trusting relationship with me.
2. Dr. Patel wanted to have a relationship of mutual trust with me.
3. Dr. Patel's goal was to build a relationship in which we trust each other.
4. Obtaining my trust was Dr. Patel's goal for this interaction.

5. Dr. Patel wanted to establish a trusting relationship, so I can tell him everything.
6. Dr. Patel wanted me to trust him.

*The following questions ask about how you perceive the overall interaction and Dr. Patel's behaviors.*

Perceived Realism (Caughlin et al., 2009; Donovan-Kicken et al., 2013)

1. To what extent was the interaction presented in the message similar to a real doctor-patient interaction? (1 = *Very different*, 7 = *Very similar*)
2. How realistic was the scenario? (1 = *Very unrealistic*, 7 = *Very realistic*)

Perceived Clarity (Self-Created Measure; 1 = *Strongly Disagree*; 7 = *Strongly Agree*)

1. The message I just read was clear.
2. I understand the meaning of the message I just read.

Participants' Understanding (Self-Created Measure; 1 = *Strongly Disagree*; 7 = *Strongly Agree*)

1. Dr. Patel did not understand the phrase "out of sorts"/ "frog in my throat".
2. Dr. Patel was unsure about the meaning of the phrase "out of sorts"/ "frog in my throat".
3. Dr. Patel did not know how to interpret the phrase "out of sorts"/ "frog in my throat".
4. Dr. Patel was confused about the phrase "out of sorts"/ "frog in my throat".
5. Dr. Patel was unable to understand what "out of sorts"/ "frog in my throat" means.

Meaning of the Idiom (Open-Ended)

1. Please explain the meaning of "out of sorts"/ "frog in my throat" using your own words.

Suggestions

1. What suggestions do you have to make the dialogue between Dr. Patel and the patient more realistic?
2. What suggestions do you have to improve the clarity of the dialogue?



## APPENDIX C: PRE-SCREENING QUESTIONNAIRE

1. What is your age? \_\_\_\_\_
2. What is your sex?
  - a. Male
  - b. Female
  - c. Other
3. Are you self-identified as Hispanic/Latino?
  - a. Yes
  - b. No
4. How would you describe your ethnicity/race? (Select all that apply)
  - a. White
  - b. Black or African American
  - c. American Indian and Alaska Native
  - d. Asian
  - e. Native Hawaiian and Other Pacific Islander
  - f. Some Other Race (Please specify\_\_\_\_\_)
5. Do you speak English as your first language?
  - a. Yes
  - b. No
6. Were you born in the United States?
  - a. Yes
  - b. No
7. Did you grow up in the United States?
  - a. Yes
  - b. No

## APPENDIX D: MAIN STUDY QUESTIONNAIRE

Imagine that you were the patient in the video you just watched and answer the following questions. There is no right or wrong answer to each question. Please choose the one that best represents your perceptions.

*The following questions ask about what you think Dr. Patel wanted to accomplish during the interaction you just watched (1 = Strongly Disagree; 7 = Strongly Agree).*

### Understanding Patients' Language Use Goal (Self-Created Measure)

1. Dr. Patel was trying to understand what I meant by "out of sorts"/ "frog in my throat".
2. Dr. Patel was trying to have a better understanding of the phrase I used.
3. Dr. Patel's goal was to fully understand what I meant by "out of sorts"/ "frog in my throat".
4. Dr. Patel wanted to understand my language use.
5. Understanding the phrase I used was Dr. Patel's goal.
6. Dr. Patel wanted to know what I meant by "out of sorts"/ "frog in my throat".

### Understanding Patients' Overall Condition Goal (Self-Created Measure)

1. Dr. Patel was trying to understand my health condition.
2. Dr. Patel was trying to have a comprehensive understanding of my situation.
3. Dr. Patel's goal was to know what bothered me.
4. Understanding my health condition was Dr. Patel's goal.
5. Dr. Patel wanted to know more about my symptoms.
6. Dr. Patel was trying to understand my situation.

### Hiding Linguistic Incompetence (Self-Created Measure)

1. Dr. Patel was trying to hide his lack of understanding of phrases in English.
2. Dr. Patel wanted to cover his lack of understanding of my language use.
3. Dr. Patel was trying to appear as if he understood what I meant.
4. Dr. Patel pretended that he understood the phrase I used even if he didn't.
5. Dr. Patel's goal was to pretend to understand phrases in English.
6. Hiding the lack of understanding of English phrases was Dr. Patel's goal for this interaction.

### Establishing a Trusting Relationship Goal (Self-Created Measure)

1. Dr. Patel was trying to establish a trusting relationship with me.
2. Dr. Patel wanted to have a relationship of mutual trust with me.
3. Dr. Patel's goal was to build a relationship in which we trust each other.

4. Obtaining my trust was Dr. Patel’s goal for this interaction.
5. Dr. Patel wanted to establish a trusting relationship, so I can tell him everything.
6. Dr. Patel wanted me to trust him.

*The following questions ask you to evaluate Dr. Patel’s performance and your conversation with him.*

Communication Competence (Donovan-Kicken et al., 2013)

Dr. Patel was...

Rude	1	2	3	4	5	6	7	Polite
Ineffective								Effective
Unsophisticated								Sophisticated
Inappropriate								Appropriate
Insensitive								Sensitive

Linguistic Competence (Self-created Measure; 1 = *Strongly Disagree*; 7 = *Strongly Agree*)

1. Dr. Patel knew how to pronounce words in English.
2. Dr. Patel was knowledgeable about idioms and slang in English.
3. Dr. Patel had good English vocabulary.
4. Dr. Patel knew how to use English words in conversations with patients.
5. Dr. Patel’s English vocabulary was limited. [R]
6. Dr. Patel was a competent English speaker.
7. Dr. Patel spoke English very well.

Cultural Competency (Lucas et al., 2008)

1. How knowledgeable do you feel that Dr. Patel was about your culture? (1 = *Not at All*; 7 = *Very Knowledgeable*)
2. How well do you think Dr. Patel understood your culture’s specific characteristics? (1 = *Not at All*; 7 = *Very Well*).
3. How informed did Dr. Patel seem to be about your culture? (1 = *Not at All*; 7 = *Very Informed*)
4. Do you feel as though Dr. Patel was aware of the views he might have towards specific cultural groups? (1 = *Not at All*; 7 = *Very Aware*)
5. Do you feel as though Dr. Patel made an effort to understand cultural differences? (1 = *Not at All*; 7 = *A Lot of Effort*)
6. Did Dr. Patel seem to be aware of cultural differences? (1 = *Not at All*; 7 = *Very Aware*)
7. Do you think that Dr. Patel was well equipped to treat patients of the same ethnic or cultural background yours? (1 = *Not at All*; 7 = *Very Well Equipped*)
8. Did Dr. Patel possess the skills that were needed to treat a patient from the same cultural or ethnic background as yours? (1 = *Not at All*; 7 = *Very Much*)

9. Would you recommend Dr. Patel to someone who shares the same ethnic or cultural background as yours? (1 = *Not at All*; 7 = *Highly Recommended*)

Physician Expertise (Perrault et al., 2021)

Dr. Patel was...

Not an Expert	1	2	3	4	5	6	7	An Expert
Inexperienced								Experienced
Incompetent								Competent
Unqualified								Qualified
Unskilled								Skilled
<u>Stupid</u>								<u>Smart</u>

Physician Warmth (Cuddy et al., 2009; 1 = *Strongly Disagree*; 7 = *Strongly Agree*)

Dr. Patel was...

1. warm
2. good-natured
3. friendly
4. sincere

Patient Satisfaction (Richmond et al., 1998)

I feel...about the visit with Dr. Patel.

Displeased	1	2	3	4		5	6	7	Pleased
Dissatisfied									Satisfied
Uncomfortable									Comfortable
Unhappy									Happy

Would you be willing to see Dr. Patel again if your primary care physician was not available?  
Yes/No

How do you feel about this interaction with Dr. Patel? \_\_\_\_\_

What is your overall impression of Dr. Patel? \_\_\_\_\_

The following questions ask about how you perceive the overall interaction and Dr. Patel's behaviors.

Perceived Realism (Caughlin et al., 2009; Donovan-Kicken et al., 2013)

1. To what extent was the interaction presented in the message similar to a real doctor-patient interaction? (1 = *Very different*; 7 = *Very similar*)

2. How realistic was the scenario? (1 = Very Unrealistic; 7 = Very realistic)

Perceived Clarity (Self-Created Measure; 1 = *Strongly Disagree*; 7 = *Strongly Agree*)

1. The video I just watched was clear.
2. I understand the meaning of the video I just watched.

Participants' Understanding (Self-Created Measure; 1 = *Strongly Disagree*; 7 = *Strongly Agree*)

1. Dr. Patel did not understand the phrase “out of sorts”/ “frog in my throat”.
2. Dr. Patel was unsure about the meaning of the phrase “out of sorts”/ “frog in my throat”.
3. Dr. Patel did not know how to interpret the phrase “out of sorts”/ “frog in my throat”.
4. Dr. Patel was confused about the phrase “out of sorts”/ “frog in my throat”.
5. Dr. Patel was unable to understand what “out of sorts”/ “frog in my throat” means.

Perceived Similarity (Street et al., 2008; 1 = Very Different; 7 = Very Similar)

1. The patient and I have \_\_\_\_\_ ethnic backgrounds.
2. The patient and I are \_\_\_\_\_ in terms of race.
3. The patient and I are \_\_\_\_\_ in terms of skin color.
4. The patient and I have \_\_\_\_\_ gender backgrounds.
5. The patient and I are \_\_\_\_\_ in terms of gender.

Meaning of the Idiom (Open-Ended)

Please explain the meaning of “out of sorts”/ “frog in my throat” using your own words.

Perceived Nonverbal Affiliation (Kiesier & Auerbach, 2003)

Dr. Patel...

1. made eye contact when talking to me.
2. leant towards me during this conversation.
3. engaged in open posture when talking to me.
4. smiled during the conversation.
5. talked to me in a soft tone.
6. crossed his arms when talking to me. [R]
7. avoided eye contact with me. [R]

Demographic Information and Control Variables

1. Please move the bar to select a number from 0 to 100 to indicate where you lie on the political spectrum (*1 = Conservative, 100 = Liberal*)

2. What is the highest degree or level of school you have completed?
  - a. No schooling completed
  - b. 12th grade-no diploma
  - c. Regular high school diploma
  - d. GED or alternative credential
  - e. Some college credit, but less than 1 year of college
  - f. 1 or more years of college credit, no degree
  - g. Associate degree (for example: AA, AS)
  - h. Bachelor's degree (for example: BA, BS)
  - i. Master's degree (for example: MA, MS, MEng, MEd, MSW, MBA)
  - j. Professional degree beyond bachelor's degree (for example: MD, DDS, DVM, LLB, JD)
  - k. Doctorate degree (for example: PhD, EdD)
3. What is your *personal income* per year?
  - a. Less than \$10,000
  - b. \$10,000 - \$19,999
  - c. \$20,000 - \$29,999
  - d. \$30,000 - \$39,999
  - e. \$40,000 - \$49,999
  - f. \$50,000 - \$59,999
  - g. \$60,000 - \$69,999
  - h. \$70,000 - \$79,999
  - i. \$80,000 - \$89,999
  - j. \$90,000 - \$99,999
  - k. \$100,000 - \$149,999
  - l. More than \$150,000

Xenophobia towards immigrants from India (van der Veer et al., 2011)

*The following questions ask about your attitude towards immigrants from India (1 = Strongly Disagree; 7 = Strongly Agree)*

1. In this country, immigrants from India are out of control.
2. Immigrants from India cause increases in crimes.
3. Immigrants from India take jobs from people who are here already.
4. Interacting with immigrants from India makes me uneasy.
5. I worry that immigrants from India may spread unusual disease.
6. I am afraid that in case of war or political tension, immigrants from India will be loyal to their country of origin.
7. With increased immigrants from India, I fear that our way of life will change for the worse.
8. I doubt that immigrants from India will put the interest of this country first.
9. I am afraid that our own culture will be lost with increased number of immigrants from India.