ATTRIBUTION THEORY AND APOLOGY DISCOURSE IN THE CONTEXT OF
MEDICAL ERRORS

by

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A thesis submitted to the faculty of
The University of North Carolina at Charlotte
in partial fulfillment of the requirements
for the degree of Master of Arts in
Communication Studies

Charlotte

2020

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ABSTRACT

HALEY E. HARTSELL. Attribution theory and apology discourse in the context of medical errors. (Under the direction of DR. MARGARET M. QUINLAN)

Communication scholars have investigated medical error and apology discourse over the last 20 years. However, despite the previous research on this topic, little is known about what factors (i.e., controllability, emotional response, and error severity) motivate a patient's desire for an apology after a medical error has occurred. A series of quantitative analyses were conducted, and attribution theory was employed to uncover a unique perspective on this topic. In general, survey data from 429 participants revealed that controllability and emotional response were related to a patient's desire for an apology, whereas the severity of the error was not. The results of this study not only advocate for more research on this topic but also have several implications for attribution theory, for researchers and healthcare practitioners.

DEDICATION

This thesis is dedicated to my grandmother, Claudette Hartsell. Your personal experience with medical error opened my eyes on the importance and necessity of more research in this area. This thesis is dedicated to advocating for the apology that you so desired, but never received.

ACKNOWLEDGEMENTS

Thank you to Dr. Margaret M. Quinlan for your support not only on this project but over the many years I have spent at UNC Charlotte. During this time, you have inspired my love for all "things" health communication, and I feel fortunate to have had you advise this thesis. Your work continues to motivate me, serving as an inspiration for not only myself but many others. I hope to one day become half the scholar that you are.

Thank you to Dr. Erin Basinger for serving as my cheerleader, a mentor, and the reason I decided to pursue this degree. Your encouragement and friendship have pushed my potential far beyond what I ever dreamed possible. I feel fortunate to have met you during my time as an undergraduate student, and I am even more lucky to have worked closely with you in my graduate endeavors. I cannot thank you enough for everything you have done for me over the years; I will be forever indebted to you.

Thank you to Dr. Christine Davis for helping me develop as both a scholar and a student. I feel fortunate to have had a class with you, as it was, without a doubt, one of the most challenging but rewarding experiences of my academic career. Your work is meaningful, thought-provoking, and I am grateful to have had you serve on my committee. Your advice has been momentously helpful, and it was an honor to have worked alongside you.

Thank you to Dr. Heather Carmack for your groundbreaking research on medical mistakes and my grandmother, Claudette Hartsell, for sharing your medical mistake and inspiring this research project.

Lastly, thank you to my cohort for your unwavering support and friendship throughout this wild journey we call graduate school. We made it.

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CHAPTER 1: INTRODUCTION

Mistakes are an inevitable part of what makes us all human, and health care providers are no exception to this rule (Carmack, 2010a). Medical mistakes are a part of medical practice and can happen to even the most qualified physicians (Carmack, 2014; Makary & Daniel, 2016). Each year in the United States alone, roughly 15 million patients experience a medical error, and approximately 250,000 patients die as a consequence (Carmack, 2010a, 2014; Makary & Daniel, 2016). To date, medical errors remain the third leading cause of death, claiming more lives than car accidents, breast cancer, and HIV/AIDS combined (Makary & Daniel, 2016). Although these statistics are frightening, some scholars estimate that medical errors remain vastly underestimated and affect an even higher number of patients than these studies imply.

Medical errors continue to transpire, but conversations to address these errors have gained little traction. Although the medical community generally agrees that an apology following a medical error is an ethical responsibility, tensions between providers' desires to apologize for (and therefore disclose) their wrong-doings, and potential resulting legal repercussions, may prevent them from doing so (Carmack, 2014). It is this omission of apology after a medical mistake that can have potentially harmful effects for both patients and providers. Given the prevalence of medical errors and lack of patients' perspective surrounding this topic, a deeper dive into what factors motivate a patient's desire for an apology after a medical error has occurred is warranted. Therefore, the goal of this thesis is to explore the role of controllability, emotional response, and error severity as potential motivating factors behind a patient's inclination toward an apology. In the chapters that follow, I overview previous research on medical error and

apology discourse, as well as explore attribution theory as the theoretical framework for this study. Then, I describe a quantitative study that I implemented to investigate the medical error and the factors that influence one's desire for an apology after it has transpired.

CHAPTER TWO: LITERATURE REVIEW

2.1 Defining Medical Error

Medical error is a concept that has been studied by communication scholars over the last 20 years, and definitions of what constitutes a medical error have fluctuated over time (Carmack & King, under review). Today, Leape's (1994) definition of medical error as an "unintended act (either of omission or commission) or one that does not achieve its intended outcome" is the generally accepted medical definition (p. 1851). This definition encompasses two primary types of medical errors: omission and commission. *Omission* errors are caused by not doing a procedure or treatment. In contrast, errors that are a result of performing an incorrect procedure or prescribing the incorrect medication are considered *commission* errors (Carmack & King, under review). Errors, in either case, are considered the consequences of making wrong choices often due to a lack of training, experience, or insufficient knowledge or information (Barry et al., 2002).

Leape's (1994) definition of medical error also recognizes error as "one that does not achieve its intended outcome," meaning known complications are also included in the definition (p. 1851). Known complications are the bad or undesired outcomes of a procedure that were known to possibly take place (Carmack & King, under review). Lastly, the *near miss* is also included in discussions of medical error. A near miss can be defined as a medical error that was corrected or prevented error before it caused harm to the patient (Aspden et al., 2004). The near miss is an integral part of medical error conversations because when reported, near misses account for between two and six percent of all medical mistakes and, therefore, should not be discounted (Noland & Carmack, 2015b).

It is estimated that roughly 80% of medical errors are the result of a miscommunication (The Joint Commission, 2012). Additionally, not all mistakes that result from communication errors are not to be treated the same, as they can range in severity and occur in variety of high-stakes settings like the emergency room (Eisenberg et al., 2005). However, many of these errors, and the miscommunications that lead to them, have become the storyline of several television medical dramas (Foss, 2011). Medical mistakes have been portrayed in medical television dramas as a controversial storyline for several decades, but often falsely represent the frequency in which these mistakes occur (Foss, 2011). Several of these dramas, including *ER*, *Grey's Anatomy*, and *House MD,* portray highly competent providers who act professionally and rarely commit errors. These false representations not only foster inaccurate and conflicting messages about the prevalence of errors, but also potentially misconstrue the circumstances in which mistakes occur (Carmack, 2014; Eisenberg et al., 2005; Foss, 2011). It is because these errors are challenging to study in real-time that communication scholars have begun to explore the disclosure of errors (Allman, 1998; Carmack, 2010a; Eisenberg et al., 2005) and the apology process that proceeds them (Carmack, 2010b, 2014, 2017; Nazione & Pace, 2015). Although statistics on the prevalence of these errors imply these instances are all too common, research on disclosure and apology in health contexts remain underdeveloped in comparison.

2.2 Disclosure and Apology in Health Contexts

Communication is an essential part of all patient-provider relationships, and the disclosure of errors and the apology that follows should be no exception (Nazione & Pace, 2015). Disclosure becomes an important component in the apology process, as it is

much more than just admitting that an error transpired (Carmack & King, under review). The process of disclosure becomes complicated as doctors engage in boundary management and weigh the potential legal and professional repercussions of disclosing an error (Allman, 1998). However, due to the emotional burden these errors place on the provider, many physicians disclose errors to someone, whether it be another provider or a member of their own family (Petronio, 2006).

Although the majority of apology research focuses on disclosure, limited research exists that examines the apology component in medical contexts (Carmack, 2010b, 2014, 2017; Nazione & Pace, 2015). As a result of the guilt and shame many physicians experience after an error happens, an apology is seen as one way to confess and seek forgiveness (Allman, 1998; Carmack, 2014). After all, apology is a process that allows individuals to address wrong-doings and express remorse, which can ultimately help patients and providers heal and find closure after an error occurs. However, apology discourse in the field of communication has traditionally been used in the context of image repair strategies, in which organizations attempt to regain good standing with their constituents after reputational damage has occurred (Brinson & Benoit, 1996; Carmack, 2019). Additionally, the act of apology surfaces in research that focuses on conflict resolution, as well as in conversations of forgiveness following transgressions between relational partners (Pederson, 2014; Knight, 2018).

Unfortunately, apologies in the health context remain largely underexplored at the interpersonal level. Therefore, researchers have emphasized two different components that complicate the act of apology: the type of error and how the accused responds (Carmack, 2014). First, although individuals may deliver the apology, the apology may

be co-opted as an organizational wrong-doing where the blame falls on the hospital rather than the physician that committed the error (Carmack, 2014). The co-opting of an apology becomes problematic because researchers have argued that the apology process is directly related to the cycle of redemption (Carmack, 2014), in which an individual must go through the entire redemption process to reach forgiveness (Burke, 1954). Burke's cycle of redemption explains that when individuals commit a wrongful act, they may feel guilty as a result and either decide to own the mistake (mortification) or blame a third party (scapegoating). Afterward, the individual may accept fault and apologize to express remorse, or they may apologize only to redeem their image or reputation. Therefore, when organizations are blamed and ultimately apologize for the medical error, physicians never get the chance to complete the redemption cycle and, therefore, do not receive closure from the error. Due to this, state laws and hospital policies continue to advocate for better communication about medical error and apology discourse (Nazione & Pace, 2015). However, there are several structures in place that prevent the delivery of these apologizes, often resulting in adverse effects for both patients and providers.

2.3 Structures that Prevent Apology

Although both patients and doctors may desire disclosure of a medical mistake, legal obstacles may prevent providers from doing so (Hannawa, 2009). Benevolence laws are an unusually large hurdle for physicians considering apology after a medical mistake (Carmack, 2010b; Petronio, 2006). The presence of benevolence laws in individual states makes apology nearly impossible for providers (Carmack 2010b; Nazione & Pace, 2015). Benevolence laws include rules about *admission against interest,* which is a term used to indicate fault admitting statements such as apology, expressions of remorse, and

benevolence (Carmack, 2010b). Furthermore, benevolence laws have dictated what is deemed a proper emotional response for healthcare practitioners, determined who is the appropriate agent to offer an apology, and outlined the communication format for physicians' medical error apologies (Carmack & King, under review). These laws and existing hospital policies that advocate against error have made the disclosure and apology process difficult, and further, prevent true mortification and redemption for providers who wish to apologize.

Deciding to disclose an error can be challenging for providers as they must consider the advantages and disadvantages of a disclosure. The medical profession has historically treated medical mistakes as atypical and uncommon (Allman, 1998), and admitting to medical error may foster a view of a physician as less than competent (Allman, 1998; Hannawa, 2009). Moreover, physicians must weigh several factors, such as the severity of the error, the potential for a lawsuit, and possible damage to their reputation and image (Hannawa, 2009; Noland & Carol, 2006). A primary reason providers are skeptical about offering an apology after a medical mistake is out of fear that the apology will be viewed as claiming responsibility, which could be used against them, and increases the likelihood of medical malpractice in the future (Nazione & Pace, 2015).

A lack of formal training on how to communicate about errors also prevents the proper disclosure of medical errors from providers to patients. Noland and Rickles (2009) found that medical students received several conflicting messages about how to communicate about errors while in school properly. Additionally, researchers have found that the pressure to be perfect and the tensions of disclosing an error are further

complicated by not knowing how to go about communicating error (Carmack, 2010). In a

study conducted by Noland and Carmack (2015a), nursing students discerned medical

errors as a learning experience. Still, due to potentially adverse outcomes, they remained

quiet about the errors that transpired. These findings are echoed in the limited quantity of

existing studies that emphasize the need for more formal communication-based training

of error disclosure.

2.4 Apology Benefits for Patients and Providers

Although there are several reasons providers may feel discouraged from

disclosing an error, apologies could have potential benefits for patients and providers.

Many scholars and medical ethicists have argued that accepting responsibility and

apologizing for an error is extremely important for the healing process for both patients

and providers (Koesten & Rowland, 2004). Despite that, the ambiguity of the apology

process has created emotional stress for doctors and patients. More specifically, providers

often report experiencing shame and humiliation, a lack of sympathy and judgment from

their peers, guilt, anger, and even apprehension about the loss of their jobs, when

admitting making medical errors (Hannawa, 2009; Petronio, 2006). When apologizing for

medical errors is not handled effectively, physicians may suffer from long-term

consequences such as mental distress, burnout, and drug addiction, which only further

perpetuates medical errors in the future. Similarly, patients and providers may struggle

with how to cope after the error has taken place, forcing them to seek support from their

families and significant others (Petronio, 2006).

However, Mazor et al. (2009) found that the disclosure of medical errors was

well-received by patients when the physician disclosed the error, provided an explanation

and offered an apology. Research has shown that the disclosure of medical errors may result in immediate forgiveness and improved long-term mental health outcomes for patients and physicians (Hannawa, 2009). These findings have supported advocating for an increase in apology delivery and an emphasis on nonverbal involvement as a vital element to error disclosure. According to a study done by Hannawa (2017), patients desired providers who showed interest in establishing and maintaining a close and trusting relationship. Findings from studies like this one imply that patients may experience better outcomes after receiving an apology from a physician they perceive as being deeply invested in their care.

Communication scholars have studied medical error and apology discourse for many decades. However, researchers privilege the voices of providers, and the patient perspective on these issues remains vastly underdeveloped. Although research has identified that apology is a necessary process, there is still much to explore when determining patient attitudes toward medical errors and apology, especially as it relates to the factors that influence a patient's desire for an apology after the error has occurred. To better understand the factors that influence a patient's desire for an apology, I will explore attribution theory as the guiding theoretical framework for this study.

CHAPTER THREE: THEORETICAL FRAMEWORK

3.1 Attribution Theory

Attribution theory is derived from the field of social psychology but has been used to analyze and explain several phenomena across an array of disciplines. Attribution theory has evolved from its roots to further explain interactions and discourses in the communication field, especially as they relate to instances of organizational crisis, forgiveness, and research in the area of public relations (Moon & Rhee, 2012). However, attribution theory shows promise of application in other areas of the communication discipline such as interpersonal conflict, mental health, and in intimate interpersonal relationships (Davis & Gold, 2011; Manusov & Harvey, 2001). Additionally, previous research has shown that attribution is an essential antecedent variable in the forgiveness process (Davis & Gold, 2011). In this regard, medical error disclosure and apology could potentially benefit from the application of attribution theory, especially as it relates to providing explanations as to why victims of medical error may or may not desire an apology.

In the 1970s, attribution theory was proposed by Fritz Heider but was later elaborated upon by Harold Kelley and Bernard Weiner. Years later, the theory ultimately replaced cognitive dissonance as the dominant paradigm within the field of social psychology (Graham & Folkes, 1990; Harvey & Weary, 1984). Heider, Kelly, and other scholars presumed that individuals search for understanding by asking why events took place and questioning the intentions of others (Graham & Folkes, 1990). Attribution theory today, as adapted by Weiner, suggests that three mitigating factors may come into play when an individual attributes meaning to events: (a) an individual's ability, (b)

external constraints (in the environment), and (c) the effort expended by individuals in the interaction (Griffin et al., 2015). Additionally, attribution theory helped to explain how or why individuals react in or to certain social situations through a three-step process: (a) an individual must observe or perceive a behavior, (b) the person must believe the behavior was deliberately performed, and (c) the individual must determine whether or not the person was forced to perform the behavior (the cause is attributed to the situation) or the opposite (the cause is attributed to the other individual in the interaction; Manusov & Harvey, 2001; Weiner, 1990; 2000) For this study, the interpersonal attribution process begins with observing that a medical error has taken place. The attribution process then shifts to determine the causes of the behavior. For this study, I focus on *controllability* and *stability* as the possible core attribution dimensions that are relevant to explaining a patient's desire for an apology after an error has occurred.

First, controllability refers to the extent that an individual in a given interaction has control over his or her behavior (Weiner, 1990, 2001). Generally, causal controllability is conceptualized in one of two ways. Either a cause could be internal and controllable (e.g., effort) or internal and uncontrollable (e.g., ability; Graham & Folkes, 1990). For this study, controllability refers to whether the cause of the error is under the control of the physician (e.g., the error could have been prevented) or not under the physician's control (e.g., a lack in ability). Dependent on a patient's perceptions of the physician's effort to prevent the error from taking place, an emotional reaction may be elicited. According to theory, given a cause of failure, or in this case, a medical mistake, anger may be directed at others in the interaction (Graham & Folkes, 1990; Manusov &

Harvey, 2001). In contrast, if the event is perceived as beyond the individual's control, pity may be elicited as a result. Lastly, a positive emotional response or gratitude may be elicited if patients perceive that the physician prevented the error from happening (a controllable cause for success; Becker et al., 2018; Graham & Folkes, 1990; Manusov & Harvey, 2001).

Second, stability refers to whether an attribution is perceived as unstable (susceptible to change) or it is perceived as relatively permanent (unchangeable; Weiner, 1990; 2001). Unfortunately, given the nature of work in the healthcare field, medical mistakes are a common occurrence in medical practice, and can range in severity (Eisenberg et al., 2005; Foss, 2011; Noland, 2014; Noland & Carmack, 2015b). For this study, medical error severity is measured by its relative permanence or the effect it has on an individual's everyday life. According to attribution theorist, "stability has been shown to be clearly linked to behavior change, or, in clinical terms, prognosis" (Manusov & Harvey, p.108). Provided that severity is the variable subject to variability among medical mistake experiences, patients' feelings and attitudes toward their prognosis and well-being may be dependent on how severe they perceive the error to be. Given this body of work, I predict both a provider's effort to prevent an error and the error's severity will influence the patient's desire for an apology, as well as prompt an emotional reaction in response to the error that has taken place.

H1: Severity and controllability predict an emotional response.

H2: Severity and controllability predict the desire for an apology.

Furthermore, psychology researchers suggest that a large number of antecedent factors may also influence a causal explanation that is reached (Graham & Folkes, 1990).

For example, past personal history, social norms, or one's self-esteem and pride may also affect an individual's perception of a given interaction, circumstance, or happening (Griffin et al., 2015). These internal and external antecedent factors in combination with perceived attributions to a behavior may illicit an emotional response to a stimulus event (Kelley & Michela, 1980; Weiner, 1990, 2001). By their nature, emotions can serve several social functions (Becker et al., 2018). Emotions not only influence the way people communicate but also guide social interactions. When individuals experience an emotion, they do so in part based on their perceptions of their social environment (Manusov & Harvey, 2001). Moreover, people attribute cause to their own and others' emotions. Unfortunately, many social situations are often ambiguous, and people enact a sense-making process to reduce their uncertainties (Berger, 2011; Van Doorn et al., 2015). In the context of medical error, people may use expressions of emotion to infer the level of risk present within the situation. From this perspective, an emotional response may be elicited when people perceive an error and assess its influence on their well- being (Manusov & Harvey, 2001) Thus, patients may covet an apology and make an assessment on the effect the apology has on their personal well-being. Given the premise that emotions influence our social behaviors, I predict a patient's emotional response to a medical error may influence their desire for an apology

H3: Emotional response predicts the desire for an apology.

CHAPTER FOUR: METHODS

For this study, quantitative data from a larger dataset were analyzed to test the study's hypotheses. To qualify for participation, individuals (a) had to have been to the doctor and/or had a procedure or operation performed on them within the past year, (b) had to be an English speaker, (c) had to be at least 18 years old, and (d) must not have (to their best knowledge) experienced a medical error in the past.

4.1 Participants

A total of 429 people completed an online survey assessing their attitudes toward hypothetical medical error scenarios of ranging severity. Most of the study participants were women ($n = 372$, 86.7%), and the rest were men ($n = 54$, 12.6%), reported their gender as other ($n = 2$, .5%), or preferred not to specify ($n = 1$, .2%). Their ages ranged from 18-84 years ($M = 36.33$, $SD = 14.66$). Participants reported a wide range of educational backgrounds including those who obtained a high school diploma or equivalent ($n = 48$, 11.2%), attended some college but did not earn a degree ($n = 62$, 14.5%), completed vocational school ($n = 3$, .7%), earned an Associate's degree ($n = 31$, 7.2%), Bachelor's degree ($n = 86$, 20.0%), professional degree ($n = 103$, 24.0%), or doctorate ($n = 91$, 21.2%), or preferred not to say ($n = 3$, .7%). The majority of participants identified as White ($n = 353$, 82.3%) and others reported their race as Black or African American ($n = 25$, 5.8%), American Indian or Alaskan Native ($n = 1$, .2%), Asian ($n = 15$, 3.5%), Native Hawaiian or Pacific Islander ($n = 1$, .2%), Hispanic or Latino ($n = 22$, 5.1%), or other ($n = 7$, 1.6%), and the remainder preferred not to specify ($n = 4$, .9%). Just over half of participants knew of a friend or family member that had

experienced a medical error in the past ($n = 216$, 50.3%), whereas the remainder of participants did not ($n = 213$, 49.7%).

4.2 Procedures

Institutional Review Board (IRB) approval was obtained before the beginning of all research activities. The study was advertised in two ways. First, I posted a link to my personal Facebook page where anyone could take it if they had a Facebook account and met the inclusion criteria. Advertising the study on Facebook allowed for responses to be obtained from a more diverse demographic. Secondly, I advertised the study to students in Communication Studies courses at the University of North Carolina at Charlotte. Students that chose to partake in the study were incentivized with extra credit for their participation at the discretion of their courses' instructor. The survey was advertised to both populations to encourage a sample that was most representative of the overall U.S. population. Study data were collected over two days and were analyzed using SPSS software.

4.3 Measures

Participants completed a survey containing both closed- and open-ended questions. In addition to demographic questions about gender, age, race, education level, and medical errors experienced by friends or family members, participants also answered questions about the extent to which they felt the physician had control over the error scenario they read about, their emotional response to the error, their opinions on whether or not an apology was warranted after the error had occurred, and through what medium that apology should be delivered.

Severity of medical error. Participants read one of three scenarios that described a hypothetical medical error that had taken place. These three scenarios ranged in the severity of the medical error (mild, moderate, or severe). Distinctions between the severity levels were made considering the impact of the error on the patient's everyday life. Each participant was randomly assigned a scenario with a different severity level. Additionally, each scenario was distributed evenly among participants so that each scenario received 143 responses. The scenarios are included in Appendix A.

Controllability. Study participants completed an adapted version of Anderson and Dedrick's (1990) measure of trust in physician scale, which consisted of three items. Items were revised to reflect controllability of the error, specifically, rather than trust in the physician more generally. The scale asked participants to indicate their agreement with a series of statements on a four-point scale (1 = *strongly agree*; 4 = *strongly disagree*). After reading the medical error scenario, participants reflected on their attitudes and perceptions on whether or not they felt that the error was due to the actions of the physician (e.g., "I believe what happened in this scenario was the doctor's fault," "My doctor could have prevented this scenario from happening"). Items were averaged for a composite score ($M = 9.70$, $SD = 1.71$, $\alpha = .72$).

Apology. After reading the medical error scenario, participants were asked to determine whether an apology was necessary after the error that had taken place. Participants answered one question (i.e., "The doctor owes the patient an apology after what has occurred.") and indicated their agreement on a 4-point scale (1 = *strongly agree*; 4 = *strongly disagree*). For participants that chose either *strongly agree* or *agree*, they were asked to complete a series of open-ended questions which asked them to describe

why they felt an apology was necessary, provide a script of the apology that they believed should be offered from provider to patient, and to indicate which medium they felt was most appropriate to deliver the apology and why. Participants that chose either *disagree* or *strongly disagree* were asked to justify why they believed the apology was not necessary. Though participants answered open-ended questions about the apology, for this study, only closed-ended items were analyzed.

Emotion. Participants completed an adapted version of Watson and Clark's (1994) Positive and Negative Affect Scale (PANAS-X) scale, which consisted of a list of 32 emotions drawn from two subscales (Basic Negative Emotion Scales and Basic Positive Emotion Scales). Sixteen items were chosen from each scale to indicate possible positive (e.g., happy, joyful, enthusiastic, cheerful, etc.) and negative (e.g., afraid, angry, nervous, hostile, etc.) emotional responses in reaction to the medical error scenario. Participants were asked to indicate which two emotional responses they felt the most in reaction to the scenario provided. The emotions proud, energetic, and delighted were removed from the analysis because participants did not select them. Therefore, the total number of emotions included for analysis was 28, with the most frequently endorsed emotions being angry ($n = 215$), nervous ($n = 119$), irritable ($n = 110$), scared ($n = 87$), frightened ($n = 67$), and afraid ($n = 67$).

CHAPTER FIVE: RESULTS

5.1 Preliminary Analyses

To begin, I conducted a variety of tests to explore associations among demographic characteristics, dependent variables, and independent variables. First, I ran a series of one-way ANOVAs to examine relationships between gender, race, and level of education and the independent and dependent variables (i.e., desire for apology, controllability, and medical error severity). Gender was not significantly related to medical error severity, $F(3, 425) = .51$, $p = .68$, controllability, $F(3,425) = -1.17$, $p = .32$, or desire for apology, $F(3,425) = .22$, $p = .88$, and race was also not significantly related to medical error severity, $F(7,420) = .93$, $p = .49$, controllability, $F(7,420) = -.98$, $p = .42$, or desire for apology, $F(7,420) = .91$, $p = .50$. Similarly, education was not significantly related to medical error severity, $F(7,419) = 1.02$, $p = .42$, controllability, $F(7,419) = -.97$, $p = .45$, or desire for apology, $F(7,419) = .58$, $p = .77$.

Next, a bivariate correlation revealed that there were significant relationships between age and medical error severity, $r(419)= .56$, $p < .01$, controllability, $r(419)= -.63$, $p < .01$, or desire for apology, $r(419)= .49$, $p < .01$. Lastly, independent samples t-tests determined that participants who knew of a friend or family member that had experienced error reported higher levels, on average, of medical error severity ($M = 2.03$, $SD = .79$), controllability ($M = 3.21$, $SD = .59$), and desire for apology ($M = 1.66$, $SD = .67$) than those that did not (medical error severity $M = 1.93$, $SD = .82$; controllability $M = 3.25$, $SD = .55$; and desire for apology $M = 1.57$, $SD = .62$), medical error severity $t(427) = 1.26$, $p < .001$, controllability $t(427) = .75$, $p < .001$, and desire for apology $t(427) = 1.51$, $p < .001$.

5.2 Substantive Analyses

  H1: Severity, Controllability, and Emotional Response. The first hypothesis predicted that (a) medical error severity and (b) controllability would be related to emotional response. The results are presented in the first two columns of Table 1. In a bivariate correlation, severity was positively related to emotional responses frightened, anger, and disgust, and negatively related to emotional responses angry at self, nervous, and irritable. Controllability was positively related to emotional responses dissatisfied with self, determined, attentive, alert, confident, lively, enthusiastic, and nervous, and negatively related to emotional responses, anger, and hostility (Table 1). All other responses were non-significant. Thus, H1 was partially supported.

  H2: Severity, Controllability, and Desire for Apology. The second hypothesis predicted that (a) medical error severity and (b) controllability would be related to the desire for an apology. In a regression, severity was not significantly related to desire for apology, $F(1,427) = 3.02$, $p = .08$, $R^2 = .01$. As predicted, controllability was positively and significantly related to desire for an apology, $F(1,427) = 351.80$, $p < .01$, $R^2 = .45$. Thus, H2 was partially supported.

  H3: Emotional Response and Desire for Apology. The third hypothesis predicted that emotional response predicts the desire for an apology. The results are presented in the third column of Table 1. In a bivariate correlation, desire for an apology was positively related to emotional responses nervous, irritable, enthusiastic, and confident and negatively related to anger and hostility (Table 1). All other responses were non-significant. Thus, hypothesis 3 was partially supported.

CHAPTER SIX: DISCUSSION

The goal of this thesis was to explore the factors that influence a patient's desire for an apology after a medical error has occurred. Specifically, I hypothesized that controllability, emotional response, and error severity would influence a patient's inclination toward an apology. In the sections that follow, I will explain my findings and highlight some theoretical and practical explanations of this study for researchers and for healthcare practitioners.

My first hypothesis predicted that the severity of an error and controllability would be associated with emotional response. This hypothesis was partially supported. First, error severity was positively related to emotional responses frightened, angry, and disgusted, but negatively related to feeling angry at self, nervous, and irritable. According to attribution theory, the stability of attribution is related to its perceived permanency (Wiener, 1990). For this study, error severity was distinguished by the effect an error had on an individual's everyday life. As scenarios increased in severity, the relative permanence of the error also increased. According to attribution theory, stability of a cause is related to the expectancy of positive future outcomes (Graham & Folkes, 1990). Therefore, if patients viewed the severity of the error as having a long-term negative effect on their prognosis, they may have experienced an adverse emotional reaction as a result. In this instance, an increase in error severity (permanence) was related to feeling more angry, frightened, or disgusted. In contrast, participants may have felt less angry at themselves, nervous, or irritable if the error's severity had a less permanent influence on their everyday life.

Next, controllability was positively related to emotional responses dissatisfied with self, nervous, determined, attentive, alert, lively, enthusiastic, and confident, and negatively related to anger and hostility. Attribution theorists have suggested that controllability (one's control over a behavior) shares a direct relationship to social emotions (Weiner, 1990). Feeling angry often accompanies one's belief that the target of their anger is capable of changing his or her behavior (Van Doorn et al., 2015). Additionally, anger is prompted when another's failure is attributed to controllable factors, such as a lack of effort (Graham & Folkes, 1990). In this instance, positive emotional responses may have been reported by participants who felt that the provider tried to impede the error from happening. Whereas, participants may have felt either angry or hostile by attributing their physician's lack of effort to prevent the error as the reason the error transpired.

My second hypothesis predicted that the severity of an error and controllability would be related to the desire for an apology. This hypothesis was partially supported. First, the study results revealed that error severity was not significantly related to the desire for an apology. Previous research suggests that providers may weigh the severity of an error as a dictating factor when deciding whether or not to disclose an error and seek absolution (Carmack, 2010a; Hannawa, 2009). However, results from this study revealed that error severity is relatively insignificant to patients seeking an apology. These findings could be explained by the participant's perceptions of the *stability* of the error. Stability, as outlined by attribution theory, "refers to the perceived variability (unstable) or permanency (stable) of the causes of behavior" (Graham & Folkes, 1990, p.

107). Thus, findings from this study may suggest that despite the stability (severity) of a medical error, the fact that an error occurred at all is a paramount consideration.

Secondly, controllability was positively and significantly related to the desire for an apology. As previously mentioned, the term *controllability* refers to the degree to which an individual has control over a given behavior (Graham & Folkes, 1990). According to this study, the more participants felt the provider had control over the error, the more they desired an apology. More specifically, if participants believed the practitioner could have prevented the error from happening (i.e., they had more control), their desire for an apology also increased. These findings echo the suspicions of attribution theory scholars, who have suggested that perceived controllability rather than stability is the causal mediator of punishments and rewards (Graham & Folkes, 1990). Therefore, consistent with the theoretical underpinnings of this study, controllability had a substantial influence on a patient's disposition toward an apology. In contrast, the stability of external constraints, such as error severity, did not (Manusov & Harvey, 2001).

The third hypothesis predicted that emotional response predicts the desire for an apology. This hypothesis was partially supported. The desire for an apology was positively related to emotional responses nervous, irritable, enthusiastic, and confident, and negatively related to anger and hostility. A fundamental principle of attribution theory is that our thoughts influence the way we feel, and our emotions are often tied to social behaviors (Graham & Folkes,1990; Metts & Bowers, 1994). From this perspective, individuals may elicit an emotional reaction when they perceive a stimulus event and evaluate their influence on their well-being (Manusov & Harvey, 2001). Therefore, study

participants may have indicated more positive emotions if they felt confident or excited at the thought of receiving an apology. It is also possible participants felt either nervous or irritable if they were unsure that the apology would be beneficial to their well-being. In contrast, participants may have felt less angry or hostile after receiving an apology if they thought it would make them feel better.

6.2 Theoretical and Practical Implications

From a theoretical perspective, this study's findings have implications for extending attribution theory in medical practice. Attribution theory has predominantly appeared in the field of social psychology but has also expanded to explain communication processes in interpersonal relationships (Davis & Gold, 2011; Moon & Rhee, 2012). However, attribution theory in the health context remains relatively underexplored and findings from this study could provide a better understanding of communication strategies in interpersonal relationships like those held between patients and providers.

First, this study offers a unique insight into the role of controllability and desired behavioral responses for patients who have experienced a medical error. More specifically, this study found that patients are more inclined to want an apology from their provider if they perceived the error to be the provider's fault. Additionally, negative emotional responses were generally related to the belief that providers were at fault for the medical mistake. As it stands, there is no fixed order of subsequent causal attributions as they are all closely related (Weiner, 1990). However, these conclusions may suggest that an individual's emotional reaction may serve as a mediator between an event's cause and an individual's desired behavioral response (Kelley & Michela, 1980). Thus, more

research to discover concrete relationships between emotional and behavioral responses should be encouraged.

Second, this study offers a unique perspective on apologia discourse. As previously mentioned, apologies are often delivered by figureheads on behalf of the organizations they represent (Carmack, 2019). However, findings from this study highlight the perspectives of the apology recipients and offers insight into why apologies are coveted after an offender commits a wrongdoing. These findings may act as a springboard for more research on what motivates an audiences' desire for an apology in health and other contexts. Additionally, this body of research is unique to previous apologia discourse, in that the apology is being delivered by the person that committed the wrongful act rather than on the behalf of another individual or organization. By understanding these factors that motivate the desire for an apology, rhetorical scholars may gain a valuable standpoint on how to best apologize to their audiences.

For researchers, findings from this study highlight the importance of the patient perspective on medical error and apology discourse. As it stands, medical error is the third leading cause of death in the United States; however, little is known about patient's attitudes toward medical error experiences (Markary & Daniel, 2016). To date, there is only one other study that evaluates patient experiences with a medical error (Mazor et al., 2009). Mazor and colleagues found that several factors influence a patient's reaction to medical error disclosure; however, factors that influence their desire for an apology have not previously been examined. Findings from this study could suggest that factors that motivate an apology, such as a provider's effort to prevent the error from happening, may not have only a profound influence on their desire for apology, but also a patient's

willingness to accept that apology after it has been disclosed. Therefore, providers who claim responsibility for the error may enhance the error disclosure process and increase their chances for forgiveness (Carmack, 2014, 2017; Nazione & Pace, 2015). Additionally, findings from this study suggest that patients may covet an apology regardless of the error's severity. In the future, it would be fruitful for researchers to examine a patient's knowledge of the error as a contributing factor to their desire for an apology, rather than its severity.

For practitioners, findings from this study highlight the importance of consistent patient safety training and communication competence in health contexts. This study suggests that patients desired an apology more when they believed the error was the provider's fault. Today, physicians practice with the goal of healing patients and are exalted on the premise that they intend not to harm. Therefore, it is important to consider that errors may not necessarily be the result of a doctor's ill intentions, but rather, are attributed to miscommunications or a lack of training (Barry et al., 2002; Eisenberg et al., 2005). After all, roughly 80% of medical errors are the result of a miscommunication (The Joint Commission, 2012). Although some scholars have outlined models for proper error disclosure (Hawanna, 2017), there is no formal training on approaches to prevent errors or the miscommunications that lead to them. As medical errors continue to transpire, researchers should encourage the development of communication competence resources and provide healthcare practitioners with regular training aimed at error prevention.

6.3 Limitations and Directions for Future Research

The results of this thesis should be interpreted in light of several limitations. First, the study's sample consisted of mostly women ($n = 372$). Thus, this may have affected the relationships between gender and the study's other dependent and independent variables. Second, death was not included in the hypothetical error scenarios as a possible consequence of the error that transpired, so results may vary in future studies that include death as a degree of severity. Third, nearly half of the study participants ($n = 216$) reported that they knew of a friend or family member that had experienced a medical error. Due to this, their survey responses may have been swayed as a result.

Additionally, results from this study may have been influenced by flaws in the study's design. First, participants were not able to indicate more than one race on the survey. Second, the 'master's' level of education option was omitted from the survey. Third, the study design did not allow for further probing about the participant's emotional responses. As a consequence, emotional responses were possibly influenced by external factors that were not assessed in this study. Fourth, this study was designed to gauge a patient's perspectives on apology and the factors that motivate them. Therefore, the physician's perspective was not considered during the analysis of the study's data. Lastly, the apology measure for this study only included one item. In the future, researchers could consist of additional items to assess this variable.

Findings from this study spark several avenues for future research. Researchers need to consider other antecedent factors that influence a patient's opinions on medical error and apology, such as (a) the pre-existing relationship between patient and provider and (b) a patient's knowledge that an error has occurred. Secondly, results from this research suggest that victims of medical error generally desire an apology after an error

has occurred. Therefore, a more in-depth investigation of what components constitute a proper apology from provider to patient should be explored.

6.4 Conclusion

The goal of this study was to investigate the factors that influence a patient's desire for an apology after a medical mistake has occurred. Attribution theory guided this study in order to uncover possible explanations behind this desire for an apology. Findings suggest that patients are strongly influenced by a provider's ability to prevent an error from happening. In contrast, error severity was not significantly related to a patient's yearning for an apology. Furthermore, this study provides unique insight into the role of emotions on expected behavioral responses in the medical mistake context. Overall, these findings have implications for theory, researchers, and healthcare practitioners, and may provide valuable revelations for future research on medical error and apology.

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Table 1

Bivariate Correlations among Dependent Variables and Independent Variables

	Severity	Controllability	Desire for Apology
Severity			
Controllability	.05		
Desire for Apology	-.08	-.60**	
Emotional Responses			
Afraid	.03	.02	-.02
Scared	.05	-.00	-.01
Frightened	.15**	.04	-.05
Nervous	-.14**	.17**	.14**
Angry	.19**	-.36**	-.30**
Hostile	.04	-.17**	-.13**
Irritable	-.17**	.11*	.12*
Scornful	-.02	.01	.01
Disgusted	.09*	-.09	-.07
Guilty	-.03	-.01	.02
Ashamed	.02	-.01	.03
Blameworthy	-.04	.05	.07
Angry at Self	-.12*	.02	.09
Dissatisfied with Self	-.06	.10*	.01
Sad	.02	.03	.03
Alone	-.03	.08	.06
Happy	-.05	.01	-.02
Joyful	.00	-.06	-.05
Cheerful	.00	-.01	.03
Excited	-.03	.08	.09
Enthusiastic	-.07	.15**	.14**
Lively	-.03	.10*	.06
Strong	.00	.02	.03
Confident	-.06	.16**	.18**
Daring	.00	.05	.03
Alert	-.01	.12**	-.02
Attentive	-.09	.06*	.02
Concentrating	.00	.03	.04
Determined	-.05	.14**	.00

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

Table 2

Results for Hypothesis 2 with Desire for Apology as the Dependent Variable

	B	SE	β	*t*	*p*
Independent variables					
Error Severity	-.07	.04	-.08	-1.74	.083
Controllability	-82.	.05	-.60	-15.32	.000

APPENDIX: MEDICAL ERROR SCENARIOS

Medical Error Scenarios:

1. Mild
   a. You decide this year you are going to obtain a flu vaccine in hopes of avoiding coming down with this year's strain. You schedule a visit with your physician and the following day you attend your appointment as planned. Your doctor runs through an exhaustive list of potential side effects but neglects to mention that people with an egg allergy (like yourself) should not receive a flu vaccine due to possible allergic reactions. The doctor proceeds to give you the vaccine, and moments later you begin to break out in hives as a result of your egg allergy. The hives cause you some mild discomfort, but ultimately clear up in a few hours.

2. Moderate
   a. You decide this year you are going to obtain a flu vaccine in hopes of avoiding coming down with this year's strain. You schedule a visit with your physician and the following day you attend your appointment as planned. Your doctor runs through an exhaustive list of potential side effects but neglects to mention that people with an egg allergy (like yourself) should not receive a flu vaccine due to possible allergic reactions. The doctor proceeds to give you the vaccine, and while things seem fine at first, hours later you begin to vomit. It is several days before the vomiting subsides, causing you to feel incredibly ill, which results in you having to miss class/work for the entire week.

3. Severe
   a. You decide this year you are going to obtain a flu shot in hopes of avoiding coming down with this year's strain. You schedule a visit with your physician and the following day you attend your appointment as planned. Your doctor runs through an exhaustive list of potential side effects but neglects to mention that people with an egg allergy (like yourself) should not receive a flu vaccine due to possible allergic reactions. The doctor proceeds to give you the vaccine and your body immediately begins to go into anaphylactic shock. Your face begins to swell, your chest tightens, and your pulse weakens. Luckily, a nurse is able to quickly obtain a shot of epinephrine, which is administered immediately. In the meantime, you are rushed to the hospital where you must stay there for 48 hours to ensure you do not have a second anaphylactic reaction. You are emotionally upset about the financial inconvenience this has caused you and that you had to miss school/work for 2 days.