

2013-05-23

A Just and Trusting Culture: Identification of Enhancers and Hindrances via a Policy-Capturing Study

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Pattison, J. (2013). A Just and Trusting Culture: Identification of Enhancers and Hindrances via a Policy-Capturing Study (Master's thesis, University of Calgary, Calgary, Canada). Retrieved from <https://prism.ucalgary.ca>. doi:10.11575/PRISM/24764

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A Just and Trusting Culture:

Identification of Enhancers and Hindrances via a Policy-Capturing Study

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE

DEGREE OF MASTER OF SCIENCE

DEPARTMENT OF PSYCHOLOGY

CALGARY, ALBERTA

May, 2013

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Abstract

Recognition of the importance of a just and trusting culture has been a focal point in enhancing patient safety; as it stands however, healthcare organizations are impeded by a culture of blame. In the present study, 12 subject matter experts were interviewed regarding behaviors that would create or hinder the development of a just and trusting culture. An additional 29 participants took part in a policy-capturing study that allowed for the direct assessment of identified factors that were seen as important to the development of a just and trusting culture. Violation type, explanation, blame by manager, and blame by organization were all significant predictors of perceptions of trust. The present findings can be useful in terms of developing training systems for managers and organizational executive teams for managing medical error events and ultimately improving patient safety. Research implications and directions for future research are also presented.

Acknowledgments

First and foremost, I would like to thank my supervisor Dr. Theresa Kline. Throughout my thesis process, when I needed guidance and direction, Theresa always made herself available. I am sincerely and forever grateful for the patience and time she has invested in me as a graduate student. Theresa has been a role model for me in my academic career, her support and dedication is beyond words and I simply cannot thank her enough.

I would also like to thank the members of my research committee for your invested time, encouragement, insight, input and your direction in developing and fine-tuning my thesis research. Your commitment throughout my Master's degree is more than appreciated.

My sincere thanks also go out to my fellow I/O graduate peers. Over the past two years we have become a close knit group and have shared many laughs and many smiles. However, there are many ups and downs in grad school; but even in the toughest times, I could always turn to my peers for comfort, support, and encouragement. Even when I felt I could not do it anymore, and a few tears were shed, I always knew I had a welcoming shoulder to cry on. I will cherish the memories we made for the rest of my life: Peers by chance, friends by choice.

Finally, I would like to thank my parents for their unconditional love and encouragement throughout my academic career. My parents have always been there to support me in my academic achievements and have taught me to always follow my dreams. I cannot thank them enough for everything they have done for me – I love you both!

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CHAPTER ONE: INTRODUCTION

Research within the industrial and organizational psychology literature focuses on several constructs that are vital to the functioning of organizations; one in particular is the dynamic construct of trust. There has been much recent discussion of the role of trust in organizations in general (e.g., Kramer & Tyler, 1996), especially within the context of team performance (e.g., Dirks & Ferrin, 2001).

Trust is commonly understood as “the optimistic acceptance of a vulnerable situation in which the trustor believes the trustee will care for the trustor’s interests” (Hall, Dugan, Zheng, & Mishra, 2001, p. 615). Embedded within this definition are four key features of trust: a) it is a relational notion b) it is a voluntary response to a set of expectations about how the trustee will behave in relation to the trustor in the future, c) it involves a degree of vulnerability and risk, and d) it is rooted in the expectation that the trustee will have concern for the trustor’s interests (Gilson, 2006). Note that the conceptual definition suggests that trust is distinct from other relational variables such as cohesion, the attractiveness of a group to its members (Goodman, Ravlin, & Schminke, 1987), friendship, the close preexisting ties between individuals (e.g., Jehn & Shah, 1997), and familiarity, specifically knowledge about another (e.g., Goodman & Leyden, 1991). This is especially important in research designs as the construct of trust must be operationally differentiated from other possibly correlated constructs.

Trust is important in several environments and the work environment is no exception. Previous research suggests that trust is known to facilitate effective and productive work relationships across a variety of contexts. Furthermore, scholars from various time periods and a diversity of disciplines seem to agree that trust is highly beneficial to the functioning of organizations (Dirks & Ferrin, 2001). Trust can have an impact on several workplace behaviors

and outcomes such as: communication, organizational citizenship behavior, negotiation processes and conflict. Additionally, the presence of trust has been found to facilitate cooperation between interdependent employees, improve job attitudes, increase organizational commitment and job performance, and enable the emergence of new organizational forms (Dirks & Ferrin, 2002; Kramer, 1999).

Another interesting notion arises when the trend toward participative management and use of teams within the workplace is examined (Lawler, 1992). The need for trust within such participative organizations is obvious as it often involves interdependence between parties (Mayer, Davis, & Schoorman, 1995). The emergence and trend towards self-directed teams and a reliance on empowered workers greatly increases the importance of trust (Golembiewski & McConkie, 1975; Larson & LaFasto, 1989), because control mechanisms are reduced or removed and interaction increases. As organizations transition to work environments that rely on teams, the concept of trust becomes increasingly important. Taken as a whole, it is clear that increased trust within an organization can result in numerous benefits. Thus, the trust that individuals have in each other is often cited as fundamental for organizational effectiveness.

Since the mid-1990s, the construct of trust has been posited as being the basis of quality interpersonal relationships and a source of competitive advantage for organizations (Tan & Lim, 2009). Most of the work on trust has focused on trust in a direct leader, such as supervisor, manager, or work-group leader (e.g., Aryee, Budhwar, & Chen, 2002; Butler & Cantrell, 1984; Deluga, 1994; Tan & Tan, 2000), while more broadly-based organizational trust research (Aryee et al.; Tan & Tan) has been limited. In attempt to extend and contribute to the extant literature on trust in a direct leader and to fill the research gap regarding trust in organizations, this study examined the construct of trust at both an interpersonal level (trust in a direct manager) and at an

organizational level. Specifically, this study examined interpersonal and organizational trust within healthcare settings.

Trust in Health Care Settings

The present study examines the role of trust in health care settings, specifically within the Alberta Health Services (AHS) organization around the reporting of and actions taken after a medical error has occurred. Compared to other high-risk industries, hospitals and health-care industries in general score poorly on safety issues (Force et al., 2006). Greene (1999) reported that patients have a 1 in 200 chance of dying from medical errors occurring during their hospital stay. Additionally, the committee on Quality of Health in America, Institute of Medicine reported that an estimated 98,000 persons die each year due to medical errors (Kohn, Corrigan, & Donaldson, 1999). Examples of medical errors include, but are not limited to: failure to diagnose/treat, communication errors, system delays, and medication errors (Henneman, Blank, Bawliniski, & Henneman, 2006). The number of errors that are not reported is alarming. In a study conducted by Taylor and colleagues (2004), it was found that 34.8% of nurses and physicians indicated that they had reported less than 20% of their perceived medical errors in the previous 12 months.

Medical errors have negative effects on patient safety. A medical error, as defined by the Institute of Medicine (1999), is the failure of a planned action to be carried as is intended (i.e., an error of execution) or the use of a wrong plan to achieve the aim (i.e. an error of planning), and is based on Reason's (1990) work on human error. Medical errors that do not result in a negative outcome for the patient are defined as "near misses." If medical errors, close calls, near misses, or hazards are not reported and acted on, then patients are at risk because these errors are likely

to reoccur. Ultimately, medical-error reporting is an essential component for patient safety enhancement.

Baker and colleagues (2004) provided a seminal study of adverse events (AE) within Canadian hospitals. AEs are defined as unintended injuries or complications that are caused by health care management, rather than by the patients' underlying disease, and that lead to death, disability at the time of discharge, or prolonged hospital stays (e.g., Brennan et al., 1991). As such AEs are defined differently from medical errors because the medical error definition focuses on actions and the AE definition focuses on outcomes. According to the study conducted by Baker and colleagues, of the almost 2.5 million annual hospital admissions in Canada, about 185 000 are associated with an AE and close to 70 000 of these are potentially preventable. Further, it was reported that 9,250 - 23,750 deaths from AEs could have been prevented.

Back in 2001 Baker and Norton reviewed the leading practices in Canada, the United Kingdom, Australia and the United States in terms of their key initiatives. As part of that review they reported that terms associated with patient safety were not standardized. In fact they put together a glossary of terms such as accident, adverse drug event, adverse event, critical incident, error, incident, lapse, near miss, normal accident, slip and system error: all of which refer to some aspect of errors. However, although the patient safety literature is rife with definitions including "medical error," "healthcare error," "patient safety incident," "harmful incident," and "adverse event," there is an underlying similarity and overarching focus between these definitions – this focus is on patient safety. It becomes evident that there is a complex interplay of factors contributing to and accounting for a significant number of deaths – deaths that are essentially preventable.

One goal of this study is to provide evidence that trust between employees and managers and between employees and the organization can be enhanced so that reporting of errors and near misses will be acted on, and consequently, patient safety is enhanced.

Employee-Manager Trust

In the examination of the trust literature, two important interpersonal relationships emerge: trust between co-workers and trust between employees and supervisors. The relationship between coworkers depicts horizontal dynamics that are absent in vertical supervisor-subordinate relationships. Examination of trust in coworkers is important and can add another perspective to the trust literature (Tan & Lim, 2009); however, this study will focus more narrowly on the vertical dyadic relationship between employee and manager. By doing so, it is possible to observe the influence of trust through a hierarchical lens, and examine trust between a proximal dyadic relationship (employee-manager) and the more distal dyadic relationship (employee-organization). Furthermore, investigating the employee-manager relationship will take more of an organizational direction, and make a more substantive contribution to the extant literature.

Trust between an employee and his/her manager is vital for the functioning of an organization and is manifested in the abundance of trust literature between individuals and leaders. This trust relationship has been studied in such areas as applied psychology (Dirks & Ferrin, 2002), communication (Giffin, 1967), leadership (Atwater, 1988), management by objectives (Scott, 1980), negotiation (Bazerman, 1994), game theory (Milgrom & Roberts, 1992), performance appraisal (Cummings, 1983), labor-management relations (Taylor, 1989), and implementation of self-managed work teams (Lawler, 1992).

Trust in managers affects employees' performance and the effectiveness with which they complete their job responsibilities (Williams & Anderson, 1991). One way in which an

employee's performance is affected can be explained using cognitive resource theory whereby individuals who trust their managers expend fewer cognitive resources "covering their backsides" and can focus their attention on performance (Kanfer & Ackerman, 1989). A second theory that helps explain this relationship involves social exchange theory. Using this approach, individuals engage in exchange relationships with one another because they expect that over time they can derive benefits from doing so; perceiving other organizational members to be trustworthy increases the likelihood that the trustor will engage in exchange relations which ultimately allow him or her to perform better (Blau, 1964). Further, one of the most well-known of the exchange rules is reciprocity or repayment in kind. However, individuals differ in the degree to which they value reciprocity. This individual difference is called exchange orientation and those with a high level of this characteristic are more likely to return a good deed than those with low levels of the characteristic (Cropanzano & Mitchell, 2005).

Studies that examine job performance in relation to trust have found support for these theories. For example, Oldham (1975) found that trust in one's organizational leader has a positive effect on task performance, and improving performance within an organization is key to an organization's success. Additionally, previous research supports the fact that performance can be enhanced if trust exists between organizational members - particularly between an employee and his/her manager (Rich, 1997). It has been suggested that interactions between managers and employees demonstrate the values and norms of behavior that are the essence of the organization. Through the implementation of key decisions such as those around promotion, reward, and discipline, the manager provides guidance to the employee about the organization and its values (Gilson, 2006). This provides a rationale for the focus of this research study on the employee-manager interpersonal relationship.

Employee-Organization Trust

Most studies examining trust in leadership have focused on one of two referents: the direct leader (e.g. supervisor, manager, work group leader) or the organizational leadership as a whole (e.g. executive leadership team, collective set of leaders). Dirks and Ferrin (2002) note that in contrast to direct leaders, organizational leaders perform more strategic functions, such as the allocation of resources to departments, human resource practices of the firm, and the communication goals of the organization. Organizational trust is defined by Gilbert and Tang (1998) as the belief that an employer will be straightforward and follow through on its commitments. Furthermore, organizational trust refers to employees' faith in organizational leaders and the belief that ultimately organizational actions will benefit employees (Laschinger, Finegan, Shamian, & Casier, 2000). There are several organizational benefits that result from organizational trust. For example, it has been found to be significantly related to job satisfaction, organizational commitment, role clarity, and role performance (Dirks & Ferrin, 2002; Podsakoff, MacKenzie, & Bommer, 1996). Mishra and Morrissey (1990) found that 90% of managers believed that trust starts at the top of an organization and trickles down. Laschinger et al., note that there is little empirical research in the nursing literature relating to organizational trust; however, anecdotal accounts from nurses reflecting distrust of current management systems are prevalent in today's turbulent nursing work environment.

The distinction between interpersonal and organizational trust in the workplace is important and needs to be addressed in research, as political and organizational psychology studies suggest that individuals do distinguish between individual and collectives or systems of authority in making assessments (e.g. Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Lind & Tyler, 1988). As this distinction is evident in the literature and is relevant to employees within

organizational settings, the current study examines the dependent variable of interest at the employee-manager and the employee-organization level.

The Dependent Variable: A Just and Trusting Culture

When a strong sense of justice and a strong sense of trust are incorporated within an organization, the result is a just and trusting culture. Within the health care setting a just and trusting culture is defined as an environment supportive of open dialogue to facilitate continual improvement and safer practices for patients, staff and physicians (Frankel, Leonard, & Denham, 2006). These authors go on to explicate this description in detail. This culture is characterized by an atmosphere of trust and psychological safety whereby one can voice a concern or ask for help and know that the response will always be respectful; it contains a supportive work unit in which members believe that they can question existing practices, express concerns and admit mistakes without suffering ridicule or punishment. In a just and trusting culture, there is an acknowledgement of human fallibility. When adverse events occur, those involved are supported, and treated with fairness, dignity and respect. Staff, physicians and volunteers are expected to be appropriately accountable for their actions and open and honest about communicating this event. The organization also holds itself accountable for the system it designs. This culture contributes to organizational learning and improvements in quality of care and patient safety. Furthermore, within a just and trusting environment, it is essential that every individual involved in the organization, from employees and managers to patients and their families, should feel safe to voice their concerns, know how to do so, and be able to do so easily. In a just and trusting culture, a sense of shared accountability holds health care organizations accountable for the systems they have designed and responds to the behavioral choices for reporting errors and system vulnerabilities. In terms of blame, a just culture sits in contrast to

both a highly punitive culture and a blame-free culture; it maintains a balance between open reporting and individual accountability to maximize safety (Marx, 2011). A just and trusting culture anticipates human error, intercepts errors before they become critical, and permits recovery when error's consequences cause patient harm (Miller, Griffith, & Vogelsmeier, 2010). Given its importance, a just and trusting culture will be the dependent variable in this study.

Current State of Health Care Culture

When the current state of the health care organizational cultures is examined, a just and trusting culture does not appear to be prevalent; instead these organizations are permeated by a culture of blame. This type of culture of blame exists when a set of norms and attitudes within an organization is characterized by an unwillingness to take risks or accept responsibility for mistakes because of a fear of criticism or management admonishment (Khatri, Brown & Hicks, 2009). This culture cultivates distrust and fear, and people blame each other to avoid being reprimanded or put down, resulting in no new ideas or personal initiative because people do not want to risk being wrong. This becomes a concern because it puts patient safety at risk as healthcare professionals might not come forward or honestly report an incident for fear of punitive action and placed blame. A prevailing blame culture in health care has been suggested as the major factor for an unacceptably high number of medical errors (Cook, Guttmanova, & Joyner, 2004).

In the healthcare environment, organizational culture has been associated with elements of organizational performance that impact quality, such as nursing care, job satisfaction and patient safety (Boan & Funderburk, 2003). A purpose of culture is to integrate members of an organization so they know how to interact, communicate, relate and work together; culture builds employees' commitment to certain values and beliefs, and it helps an organization adapt to

demands and expectations of the external environment (Daft, 2004). Organizational culture is important for improving quality and crossing the quality chasm (Fernandopulle et al., 2003) and is a precursor to organizational support for quality improvement efforts (Bradley et al., 2005). Increasingly however, the culture of the healthcare industry is regarded as a potential risk factor threatening the patients for whom it provides for. Essentially, promoting a culture of safety has become one of the pillars of the patient safety movement (Nieva & Sorra, 2003).

According to Nieva and Sorra (2003), a fundamental culture change is necessary to ensure that innovations introduced to improve patient safety (via a just and trusting culture) actually achieve their potential; for example, adverse event reporting systems will not overcome chronic underreporting problems within a punitive culture where acknowledgement of error is not acceptable (Leape, 1994). Additionally, organizational leaders may try to shape culture to support patient safety and help reduce medical errors. For example, Ginsberg and colleagues (2005) reported efforts to create a culture of patient safety among clinical nursing leaders to reduce adverse events in patient care.

According to Leape (1994), “the single greatest impediment of error prevention in the medical industry is “that we punish people for making mistakes.” In recognition that safety cannot be achieved in a culture that blames individuals for mistakes, health care organizations have more recently begun to move toward a non-punitive process when analyzing medical errors and near misses (Connor, et al., 2007); contrary to what many believe, removing blame from the workplace does not eliminate individual or organizational responsibility. As previously noted a just and trusting culture holds everyone, including employees and organizational systems, accountable for their actions. One important notion that is highlighted by Khatri and his colleagues (2009) is that an organization does not purposefully choose a blame culture, but

rather, such a culture evolves out of a bureaucratic management style that is compliance driven, and focuses on assigning blame or accountability to individuals even for system-level failures.

According to the Institute of Medicine (2001), “the biggest challenge to moving toward a safer health system is changing the culture from one of blaming individuals for errors to one in which errors are treated not as personal failures, but as opportunities to improve the system and prevent harm.”

A just culture has emerged as an imperative for improving the quality and safety of patient care (Pronovost et al., 2003; Sorra & Nieva, 2004). In turn, the question becomes: “How do we make the transition from a blame culture to a just and trusting culture within the health care organization?” In attempt to answer this question, this study will use a policy-capturing approach in order to investigate how to enhance the development of a just and trusting culture. Several variables are expected to be related to a just and trusting culture, and will be elaborated on in the next sections.

Current Context

Some changes regarding the implementation of a just and trusting culture within AHS have recently taken place. The Calgary Zone of AHS used to be called the Calgary Health Region (the Region). In a 2005 publication the Region outlined an organizational just and trusting culture policy and a reporting policy in attempt to increase patient safety (Flemons, Eagle, & Davis, 2005). In terms of a just and trusting culture policy, this policy described the Region’s response at the time to its healthcare providers who are involved in an adverse event. The Region defined three types of adverse events and the ensuing response. First are ‘Errors’ – situations where patients have been harmed in the course of receiving health care or services from the Region, or in situations where patients have been nearly harmed and where healthcare

providers did not deviate from established policies, procedures, standards or guidelines. In such instances, healthcare providers will *not* be disciplined by the Region. Second are ‘Non-Compliance’ – situations where patients have been harmed in the course of receiving health care or services from the Region, or in situations where patients have been nearly harmed and where healthcare providers have deviated from established policies, procedures, standards, or guidelines. In these cases the Region will commit to evaluate as part of an administration review a) the appropriateness of its policies, procedures, standards or guidelines and b) the circumstances that led to the non-compliant action, before determining an appropriate course of action. Finally there is ‘Intention to Harm’ – situations where patients have been intentionally harmed or where there is intent to cause harm to a patient by any of the Region’s healthcare providers. Here the Region will seek disciplinary action and criminal investigations may result (Flemons et al., 2005).

Along with a just and trusting culture policy, the Region has also developed reporting policies within their culture to promote: 1) voluntary safety learning reports of hazards (including hazards that are recognized as having the potential to cause or contribute to harm but have not yet done so, situations in which patients are nearly harmed – close calls – and situations where patients are harmed but not severely and 2) mandatory reporting when patients have suffered severe or fatal harm (Flemons et al., 2005). In a more recent policy directive (Alberta Health Services, 2012) the link between reporting and learning and fostering a just and trusting culture is made explicit. Reporting adverse events (an event that could or does result in unintended injury or complications arising from health care management), close calls (an event in which a patient is exposed to or involved in a situation with the potential for harm), and

hazards (some thing or set of circumstances that if left unchanged could harm a patient or contribute to harm) are seen as key drivers to improve patient safety.

It is evident that within AHS some steps have been made in the direction towards a just and trusting culture and in promotion of medical reporting. Seven years later Flemons and McRae (2012) report that incident reporting increased over 200% and perceptions of reporter safety and ease of reporting had significantly improved. The current study extends their findings by identifying potential enhancers and barriers to promotion of a just and trusting culture.

Pilot Study

AHS contacted the researchers indicating that they were interested in examining the factors that would enhance and build a just and trusting culture. In response to this request, the first phase of this study, a qualitative pilot study, was designed to assess the variables of importance to AHS employees regarding the creation of a just and trusting culture around reporting medical errors. In addition, the contextual language regarding medical error reporting unique to this workplace setting was discerned.

Members of the Employee Advisory group and the Leadership Advisory Group of the Just and Trusting Culture team at Alberta Health Services were contacted and asked to be interviewed for this study. Their work emails were obtained from the leader in charge of Quality and Safety Culture at Alberta Health Services. Ethics approval was sought and obtained for this study from the Conjoint Health Research Ethics Board.

Individuals who expressed interest in this research project engaged in phone interviews that were set up at their convenience. The interview questions are shown in Appendix A. The interviews lasted, on average, 30 minutes. A total of 12 individuals participated in this phase of the research. The male to female ratio was 4:8 respectively; six participants held leadership

positions and six participants were front line employees. The sample size of 12 was deemed sufficient, as answers to the provided questions quickly became saturated. The data gathered from these interviews, along with extant literature on organizational trust were used in the second phase of this research, the policy-capturing study. A summary of the common responses from the pilot study are shown in Appendix B.

One of the most common responses to the questions included some mention of fear of being blamed. More specifically, being blamed or punished by the direct supervisor as well as the organization was a concern expressed by respondents that would hinder a just and trusting culture. This topic also included fear of retribution. Another subject that arose frequently concerned how well it was communicated to the employee the steps to be taken next. Finally, rather than an individual being held solely accountable, problems with ‘the system’ and the entire context of the error was important to creating a just and trusting culture. These ideas were incorporated into the policy-capturing study and will be discussed at greater length in its description. Next a series of variables that have been shown to be important to organizational trust from more of an industrial-organizational perspective is presented. The use of both ‘bottom up’ and ‘top down’ approaches to identification of the cues to use in the policy-capturing study should strengthen the design.

The Role of Policy in Trust

One reason for not reporting errors may stem from the fact that either no formal policy is in place to do so, or the employee is unaware of the reporting policy. Creed and Miles (1996) suggest that the design of human resource (HR) policies and procedures affect perceptions of trust. Furthermore, research indicates that the extent to which such procedures follow principles of procedural justice has a positive impact on employees’ trust in their supervisor (Folger &

Konovsky, 1989; Korsgaard & Roberson, 1995). Research on reporting systems has been conducted in many industries including aviation and nuclear power. They are thought to have contributed importantly to low accident rates in these industries that have catastrophic potential by enabling managers to take a proactive preventative approach (e.g. Van der Schaff, 1998; Tamuz, 1994). In contrast, health care has lagged behind other industries in implementing reporting systems and other initiatives related to safety (e.g. Reason, 1997). More efforts are now being made to create incident reporting systems for medical “near misses” (e.g. Kaplan, Battles, Van der Schaff, Shea, & Mercer, 1998).

This lack of employee reporting in health care is primarily attributed to the blame laid on them. As a result, silence is the predominant response to performance problems, near misses, or other deviations from desired practices. The response of silence is of particular concern when the actor responsible for the error is from a high status professional group (Detert & Edmondson, 2007; Nembhard & Edmondson, 2006; Ramanujam & Rousseau, 2006; Tangirala & Ramanujam, 2008). Individuals who are responsible for an error in the health care organization typically do not report these errors because of fear. They fear being blamed by their managers and are afraid of potential punitive consequences that may prevail. However, if trust within the health care system is maximized, this can reduce the fear employee’s face in bringing forward medical errors. This leads to the first set of hypotheses:

Trust between managers and employees and between the organization and employees will be higher when organizations have a known policy for handling medical errors than when the policy is not known.

The Role of Violation Type in Trust

When examining the role of trust on an interpersonal level (employee-manager), it is clear that violations of trust do occur (Kim, Ferrin, Cooper, & Dirks, 2004). While a significant amount of previous research has focused on the positive qualities of trust, in many cases, an individual's positive expectations may be violated resulting in reduced trust. In order to examine how trust can be repaired, it is important to consider the type of trust violation that has occurred.

Embedded in the aforementioned definition of trust was the key feature of the expectation that the trustee will have concern for the trustor's interests (Gilson, 2006). This explains why trust definitions generally combine expectations about the ability or competence of the trustee with expectations about the trustor's value orientation, including ethics, integrity and motives (Ammeter, Douglas, Ferris, & Goka, 2004).

In their review of trust-based violations, Kim and colleagues (2004) examined two dimensions of trust violation: ability (also referred to as competence) and integrity. Mayer and his colleagues (1995) defined ability as the perceived level of relevant skills, competencies, and characteristics that enable a person to have influence in a specific domain. In turn, ability-based trust is defined as the trustor's perception that the trustee possesses the technical and interpersonal skills required to be trustworthy (Butler & Cantrell, 1984). In contrast, integrity is defined as the degree to which one adheres to a set of principles that is considered acceptable; in turn, integrity-based trust is defined as the trustor's perception that the trustee adheres to a set of principles that the trustor finds acceptable (Mayer et al., 1995).

Ability- versus integrity-based violations have been found to represent two of the most important factors of trustworthiness (e.g. Barber, 1983; Butler & Cantrell, 1984; Cook & Wall, 1980; Mayer, Davis, & Schoorman, 1995; Schindler & Thomas, 1993). Kim et al. (2004) based

their inquiry of trustworthy factors (ability vs. integrity) on a schematic model of dispositional attribution, suggesting that there may be inherent differences in the way people assess positive vs. negative information about competence/ability vs. integrity (Reeder & Brewer, 1979). According to several researchers, this schematic model, and supportive evidence from lab and field research, indicates that although individuals tend to weigh positive information about competence/ability more heavily than negative information about competence, they tend to weigh negative information about integrity more heavily than positive information about integrity (e.g., Kim, Diekmann, & Tenbrunsel, 2003; Madon, Jussim, & Eccles, 1997; Martijn, Spears, Van der Plight, & Jakobs, 1992; Reeder, Hesson-McInnis, Krohse, & Scialabba, 2001). This suggests that trust may be harder to repair in an integrity-based vs. ability-based violation scenario. Thus, this will be considered in this research study in the following manner:

Trust between managers and employees and between the organization and employees will be higher when managers violate policy due to lack of ability rather than lack of integrity.

The Role of Interactional Justice through Explanations in Trust

When examining the construct of trust within an organizational setting, justice also needs to be considered. Justice is defined as the fairness of the procedures enacted during decision making (Cropanzano & Greenberg, 1997; Lind & Tyler, 1988, Tyler & Smith, 1998), and sustains or promotes employees' commitment to the organization. Organizational justice theory and research recognizes four dimensions of justice (Colquitt, 2001): distributive justice refers to the perceived fairness of the distribution of resources, rewards, penalties, and other outcomes; procedural justice refers to the perceptions of fairness in how these allocations are made; interpersonal justice refers to the perceived fairness of the interpersonal treatment that people

receive in the enactment of organizational procedures; and informational justice refers to the perceived fairness of the amount, accuracy, and timeliness of information provided about the procedures used and the outcomes received. As with organizational trust, employee perceptions of organizational justice are significantly related to important organizational outcomes, such as job satisfaction, commitment, withdrawal behavior, or quit intentions (e.g., Barling & Phillips, 1993; Masterson, 2001; Moorman, 1991).

Interpersonal justice hinges on communication and communication plays a significant role in the trust literature. Boss (1978) found that trust within groups and between employees and their managers has a positive effect on openness in communication. Similarly, Smith and Barclay (1997) found that trust has a positive effect on openness in communication in interpersonal and inter-organizational relationships. Whitener, Brodt, Korsgaard, and Werner (1998) identified three factors that affect perceptions of trustworthiness: accurate information, explanations, and openness. Employees see managers as trustworthy when their communication is accurate and forthcoming. Moreover, adequate explanations and timely feedback on decisions lead to higher levels of trust (Folger & Konovsky, 1989; Konovsky & Cropanzano, 1991; Sapienza & Korsgaard, 1996). According to Whitener and his colleagues, leaders who take the time to explain their decision thoroughly are likely to be perceived as more trustworthy. Thus, managers should pay extra attention to timely, candid, and specific internal communication with thorough and reasonable explanations of decisions (Klendaueer & Deller, 2008) as explanations provide valuable information about the fairness of procedures (Greenberg, 1994).

While the role of communication in a just and trusting culture is extremely prevalent in the literature, providing explanations was a common topic that arose from the pilot study when individuals were asked about behaviors that promoted a just and trusting culture. For example:

one respondent indicated that managers/supervisors need to “follow up with people who report incidents and explain the process that will accompany the error,” and another respondent indicated that managers need to be “clear about the next steps that will take place to address and resolve the issue at hand.” Ultimately, if a manager explains the steps that will be taken to deal with the medical error, trust between both parties should improve.

Trust between managers and employees and between the organization and employees will be higher when managers explain the procedures to be followed after an error than when no explanation of process is provided.

The Role of Procedural Justice

Previous research has indicated that procedural justice more strongly influences organizational commitment than other types of justice (Masterson, Lewis, Goldman and Taylor, 2000; McFarlin & Sweeney, 1992), supporting the contention that procedural justice is one of the strongest predictors of employee’s support for and pro-social reactions toward the organization and institution (Tyler, 1990). Silence is often a common response to medical errors within the healthcare system. However, employees are less silent when they identified with their workgroup, felt attached to their profession, and perceived a high level of organizational (procedural) justice (Tangirala & Ramanujam, 2008). People are reluctant to report safety incidents or other organizational problems if they perceive that doing so exposes them to retaliation, ostracism, or other unjustified negative consequences (Edmondson, 2002; Elder, Graham, Brandt, & Hickner, 2007; Jeffe et al., 2004; Milliken, Morrison, & Hewlin, 2003). These results suggest that overall communication, and decreased silent reactions among employees may occur when perceptions of procedural justice are high. Alternatively, organizational members are more likely to report information about problems, issues, and

concerns if they feel they will be supported and protected from unfair treatment by managers, peers, and subordinates (Ashford, Rothbard, Piderit, & Dutton, 1998; Dutton, Ashford, Lawrence, & Miner-Rubino, 2002; Dutton, Ashford, O'Neill, Hayes, & Wierba, 1997). Furthermore, organizational justice theory and research suggests that health professionals judge the fairness of incident reporting based not just on the outcomes that they receive (distributive justice), but also on the procedures used to decide the outcomes (procedural justice) (Weiner, Hobgood, & Lewis, 2008). Based on the previous research presented, it becomes apparent that justice, procedural justice in particular, plays an important role in overall patient safety; both in terms of increased communication and increased reporting of incidents.

In sum, according to the literature, individuals within the healthcare industry are often reluctant and/or hesitant to report medical errors or adverse events because they fear unfair consequences and blame. This perception (or reality) that individuals will be punished and blamed for medical errors was a subject that arose in our pilot study. Behaviors associated with managers and organizations not acting in a just and trusting manner included terminology such as: “blaming,” “shaming,” “responding in discipline or punitive action,” and “non-supportive responses.” This convergence between the extant literature and the pilot study findings leads to the following hypotheses:

Trust between managers and employees and between the organization and employees will be higher when managers collect data about the medical error system-wide than when blaming the employee for the error.

Trust between managers and employees and between the organization and employees will be higher when organizational leaders assume a system-wide approach to dealing with medical errors rather than laying blame on a specific employee.

Potential Moderators: Dispositional Trust and Anxiety

Two sets of Research Questions will also be examined. These have to do with possible individual difference variables that may moderate the expected main effect relationships proposed. There has been little research into this area of trust, but two that make most sense to investigate are dispositional trust and anxiety. The rationales for including these are provided below.

Trust in one's employer has been shown to be an individual difference that has implications for organizational commitment (Gellatly & Withey, 2012). In meta-analyses Colquitt, Scott and LePine (2007) and Dirks and Ferrin (2002) demonstrated that individuals' propensity to trust was an important variable to include when examining relationships between trust variables. Thus, dispositional trust will be measured and assessed as to whether it moderates the main effect relationships hypothesized.

Dispositional levels of anxiety have also been shown to be related to organizational outcomes. Previous research suggests that organizational commitment and trust are negatively correlated with levels of anxiety; such that anxiety decreases with increases in trust, and, to a lesser extent, increases in organizational commitment (Cook & Wall, 1980). Anxiety has also been shown to be negatively related to the degree to which procedures, policies and practices are formalized within an organization (Parker & DeCotiis, 1983). Furthermore, in direct relation to this study, Teng, Chang and Hsu (2009) suggest that emotional stability (factor level of anxiety) enhances patient safety. Thus, dispositional anxiety will be measured and assessed as to whether it moderates the main effect relationships hypothesized.

Policy-Capturing Research Approach

The methodological approach that will be used for this study is policy capturing which is a within-subjects design. Policy-capturing is a method employed by researchers to assess how decision makers use available information when making evaluative judgments (Zedeck, 1977). The purpose of this methodology is to capture individual judges' decision-making policies; that is how they "weight, combine, or integrate information" (Zedeck). This approach has been used widely in organizational areas including personnel (e.g., Klaas & Wheeler, 1990), organizational behavior (e.g., Martocchio & Judge, 1994), job analysis (Sanchez & Levine, 1989), employment interviews (Dougherty, Ebert, & Callender, 1986), and strategic decision making (Hitt & Tyler, 1991). Thus, this method determines the importance of various decision variables to employees' choices (Zedeck).

In this approach, respondents are presented with multiple scenarios that vary numerous factors (cues) that are of interest to the researcher. When presented with such scenarios, the participants are asked to make choices related to the dependent variables of interest at the end of each scenario. Previous studies that have incorporated this methodological approach have suggested that the number of scenarios needed within the design is directly related to how many cues as well as the number of levels within the cues that the researcher manipulates. In the current study, there are five cues, with two levels in each. Thus, a total of 32 scenarios (2^5) will be presented to the participants.

One major advantage of using a policy-capturing approach is that it allows the researcher to experimentally manipulate cued variables. The cues that are manipulated within these scenarios are typically based upon previous research regarding the topic of interest. By using a policy capturing design, researchers minimize variable intercorrelations and, for the most part,

avoid the problems of multicollinearity often found with field data and enhance the capacity to assess the independent effects of cues (e.g., Feldman & Arnold, 1978). Another advantage stems from the fact that asking individuals to make overall judgments about multi-attribute scenarios is more similar to actual decision problems, and hence, more realistic, than in a self-report attribute design (Rynes & Lawler, 1983). Another strength of the policy capturing approach is that it reduces the probability of social desirability bias (Rynes & Barber, 1990) and only asks decision-makers to provide their actual judgments, not requiring that they have an awareness of how they combined the factors (Mumford, 2012).

One issue that can be a concern when using policy-capturing is the realism of the decision problems presented to participants and in turn, the external validity of the results (Karren, & Barringer, 2002). In order to overcome this potential barrier of realism, previous research pertaining to medical errors was reviewed and through this the example scenario on which to base our cues was obtained. The presented scenario is in fact a medical error, and the results of the particular study from which the scenario was derived indicated that 55.5% of the participants indicated that was an error (Mayo & Duncan, 2004). These results suggest that there was lack of consensus as to whether or not this was in fact an error. In real life situations, health service employees may commit medical errors; however, whether or not they realize that an error was made is questionable. Ultimately, individuals who commit errors, may not actually be aware, or perceive their action to be an error; in turn, this particular scenario provided the required ambiguity regarding the severity of the error and the realism directly associated with the uncertainty of whether this situation was, in fact, an error. Thus, it was anticipated that the use of this particular medical scenario would allow for variation in how respondents would expect the nurse depicted in the situation to be treated.

Using the policy-capturing approach, an examination of what health service employees and their supervisors pay attention to in promoting a just and trusting culture will be conducted. The methodology used in the current study will vary levels of interpersonal (employee-manager) as well as contextual (employee-organizational) responses to medical errors. Although not all aspects of this important question can be answered in a single study, the following hypotheses are proposed for this particular piece of research.

Summary of Hypotheses

Based on the reviewed literature, it is expected that several variables will be predictive of perceptions of trust of managers as well as the organization more broadly. The specific hypotheses are stated below.

Hypothesis 1a-1e: Ratings of fostering a trusting culture between Manager and Nurse will be higher when:

- (a) organizations have a known policy for handling medical errors than when the policy is not known.
- (b) patient care managers violate policy due to lack of ability rather than lack of integrity.
- (c) patient care managers explain the procedure to be followed than when no explanation of process is provided.
- (d) patient care managers collect data about the medical error system-wide than when blaming the employee for the error.
- (e) organizational leaders assume a system-wide approach to dealing with medical errors rather than laying blame on a specific employee.

Research Questions 1a – 1e: Will the individual difference variable of trusting disposition moderate the relationships between (a) Policy, (b) Violation Type, (c) Explanation, (d) Blame by

Supervisor, and (e) Blame by Organization on ratings of fostering a trusting culture between Manager and Nurse? Research Questions 2a – 2e: Will the individual difference variable of anxiety moderate the relationships between (a) Policy, (b) Violation Type, (c) Explanation, (d) Blame by Supervisor, and (e) Blame by Organization on ratings of fostering a trusting culture between Manager and Nurse?

Hypothesis 2a -2e: Ratings of fostering a trusting culture at the organizational level will be higher when:

- (a) organizations have a known policy for handling medical errors than when the policy is not known.
- (b) patient care managers violate policy due to lack of ability rather than lack of integrity.
- (c) patient care managers explain the procedure to be followed than when no explanation of process is provided.
- (d) patient care managers collect data about the medical error system-wide than when blaming the employee for the error.
- (e) organizational leaders assume a system-wide approach to dealing with medical errors rather than laying blame on a specific employee.

Research Questions 3a – 3e: Will the individual difference variable of trusting disposition moderate the relationships between (a) Policy, (b) Violation Type, (c) Explanation, (d) Blame by Supervisor, and (e) Blame by Organization on ratings of fostering a trusting culture within the organization? Research Questions 4a – 4e: Will the individual difference variable of anxiety moderate the relationships between (a) Policy, (b) Violation Type, (c) Explanation, (d) Blame by Supervisor, and (e) Blame by Organization on ratings of fostering a trusting culture within the organization?

Because it is posited that employees can make the distinction between employee-manager relationships and employee-organization relationships the following hypotheses are also offered:

Hypothesis 3a - 3c: Ratings of trust of the patient care manager will be more highly related to the variables of patient care manager response (a) - adherence to policy as a violation type, (b) - providing explanation, and (c)- assignment of blame by the patient care manager) than will the variable of organizational trust.

Hypothesis 4a – 4b: Ratings of trust of the organization will be more highly related to the variables of (a) knowledge of an organizational policy and (b) organizational response than will the variable of patient care manager trust.

CHAPTER TWO: METHOD

Sample

The sample of participants consisted of nine male (31%) and 20 female (69%) individuals who were employed with Alberta Health Services. In terms of participants' primary role within Alberta Health Services: three participants were healthcare providers, three were involved in frontline management, four were involved in operations leadership, sixteen were AHS Operations staff, and three individuals were involved in "other" primary roles: member of the health advisory council, evaluator for patient safety, and analyst. In terms of job description: three individuals were currently in front-line health care delivery (10%) roles, while the majority of participants (90%) were in administrative/support/managerial roles. Participants had worked for the organization an average of 10 years and were on average 45 years old. Note that age was reported on a scale ranging from 20-24 years to 70+; however, as none of the participants were under the age of 24, this choice was eliminated from the analyses. As a result, age was coded as: 1 (25-29), 2 (30-34), 3 (35-39), 4 (40-44), 5 (45-49), 6 (50-54), 7 (55-59), 8 (60-64), 9 (65-69) and 10 (70+).

Materials

Scenarios. A total of 36 scenarios were created for this study; 32 of which were used in the final analysis (four scenarios were replicated to examine the similarity between individual responses). Within these scenarios, the following five cues were manipulated: employee policy awareness, manager violation type, manager explanation or not, blame (manager) and blame (organization). All cues had two levels of manipulation and were chosen for this particular study based on responses derived from the pilot study and the extant literature. The manipulated cues

are presented in Appendix C, and two example scenarios are presented in Appendix D. Six different orders for the scenarios were created to avoid order effects of responses.

After reading through each scenario, participants were asked to respond to two questions: (1) How likely would this scenario help create a just and trusting culture between nurse and manager? (using a Likert-type scale from 0 – 10), and (2) How likely would this scenario help create a just and trusting culture within organization as a whole? (using a Likert-type scale from 0 – 10).

A just and trusting culture was defined for participants as: an environment supportive of open dialogue to facilitate continual improvement and safer practices for patients, staff and physicians; when errors or adverse events occur, those involved are supported, and treated with fairness, dignity and respect. Staff, physicians and volunteers are expected to be appropriately accountable for their actions and open and honest about communicating the event. The organization also holds itself accountable for the system it designs.

Demographic information. A short demographic survey also accompanied the scenarios for completion. Individuals were asked to indicate the age range, gender, length of service at Alberta Health Services, and their position (see Appendix E).

Dispositional trust and dispositional anxiety. The individual differences of dispositional trust and dispositional anxiety were also assessed. The specific items to examine these dispositions were derived from the International Personality Item Pool (IPIP: Goldberg, 1999a). As discussed recently by Goldberg et al. (2006), the IPIP website allows any researcher to have immediate access, free of charge, to personality scales assessing the wide array of constructs included in many published personality inventories.

Although the IPIP Big-Five factor markers consist of a 50 or 100-item inventory, the current study made use of a 20 items that was derived from the facet level of the agreeableness factor (trust facet) and the neuroticism factor (anxiety facet). Internal consistency reliability estimate of the 10-item dispositional trust scale as reported in the literature, based on a sample size of 774, is .87 and in the current study was .891. Furthermore, the internal consistency reliability estimate for the 10-item dispositional anxiety scale as reported in the literature, based on a same sample of 774, was .86 whereas in the current study it was .790.

Participants were asked to read each of the 10 items and then rate how much they agreed that it described them on a 5-point scale (strongly agree – strongly disagree). Example items from the trust facet include: “trust what other people say” and “distrust others,” and example items from the anxiety facet include: “worry about others” and “fear for the worst.” A copy of these scales is presented in Appendix F (Note: items coded (R) are reverse coded).

Procedure

Individuals who held front-line or administrative/support/managerial roles and were employed by Alberta Health Services were eligible to participate in this study. Over 2000 individuals were contacted via email through the Just and Trusting Culture Groups’ network by the administrator in charge of Quality and Safety Culture at Alberta Health Services. A summary of the purpose of the study, a description of the task and length of time expected for its completion was sent to eligible participants.

Individuals who wanted to participate were asked to express their interest by contacting the researcher. Of the initial 2000+ individuals who were contacted, 57 indicated that they were interested in participating. A survey was sent out to each of them; 33 surveys were returned. However, four of the surveys had to be removed from further analyses: one survey was

incomplete, and in three cases, individuals responded with the same numerical response to all 72 questions in the survey. This resulted in a final sample for the policy-capturing study to be 29. Data collection spanned over a time period of five months (July – December, 2012).

Participants completed the demographic questions, all 32 scenarios (36 including replicated scenarios), and the individual differences scale. The package was made available to participants either electronically or in hard copy format. Hard copies were mailed to the address most appropriate for the participant. Self-addressed, return envelopes were included in the hard copy versions. The scenarios, demographic sheet and individual differences scale combined, took approximately 30-45 minutes to complete.

CHAPTER THREE: RESULTS

Pre-Analyses

The reliability of the participants' responses was assessed by evaluating the similarity of participants' responses to four identical scenarios that were placed randomly within the 32 created scenarios. The average correlation between their ratings of the likelihood of helping create a just and trusting culture between the nurse and manager for the four repeated scenarios was $r = .66$. The average correlation between their ratings of the likelihood of helping create a just and trusting culture within the organization for the four repeated scenarios was $r = .90$. These are both statistically significant, but indicate that the respondents were more consistent in their ratings of the effects of the variables on organizational culture than between the nurse and manager. The demographic variables of age, gender and number of years working for the Alberta Health Services were unrelated to the average ratings provided or to the individual difference measures.

Descriptive information

Table 1 shows the means and standard deviations for the variables in the study. Also, the correlations between them are shown in Table 2.

Table 1: Means and Standard Deviations (SD) for Study Variables

	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std. Deviation (SD)</i>
Age	1.00	9.00	4.828	2.237
Years with AHS	.50	40.00	10.197	10.168
Trust	2.50	4.90	3.879	.494
Anxiety	1.40	3.60	2.528	.563
Manager_Ratings* (ratings of promoting a just and trusting culture between manager/nurse)	.41	4.97	2.782	1.197
Organization_Ratings* (ratings of promoting a just and trusting culture between organization/nurse)	1.22	8.50	3.652	1.395

*Note. Reported descriptives are collapsed across all 32 scenarios

Table 2: Correlation Matrix for Study Variables

	1	2	3	4	5	6
1. Age	1					
2. Years with AHS	.438*	1				
3. Trust	.120	-.023	1			
4. Anxiety	.109	-.173	-.318	1		
5. Manager_Ratings	-.201	-.131	-.046	-.117	1	
6. Organization_Ratings	-.285	-.233	-.061	-.130	.470*	1

Note. $N = 29$. * $p < .05$ (2-tailed).

Analysis for Hypotheses

Multi-level Modeling (MLM). To assess the formal hypothesized relationships, a multi-level modeling approach was taken. This analytical protocol is appropriate when data are ‘nested’ within broader categories. Policy-capturing is a methodological design that allows the researcher to present cues to participants and assess the decision-making ‘policy’ they use (i.e., use and weighting of information) when making a decision.

A policy-capturing methodology nests responses to the various experimentally manipulated scenario contents within the individual respondent. That is, the 29 respondents were subjected to 32 different experimental design situations, rendering a total of 928 (29 X 32) individual-level responses. However, some of the variability of the 928 responses can be attributed to specific participants. For example, one participant may have been systematically lenient in their responses, while another may have been systematically harsh. This systematic within-person variance needs to be taken into account prior to the assessment of the effects of the variables of interest. This is accomplished through the use of MLM. Hofmann (1997), Kreft and DeLeeuw (1998), and Heck and Thomas (2000) have indicated that MLM is the best way to deal with the non-independence of observations that occur because data reside at different analytical levels. Aiman-Smith, Scullen, and Barr (2002) suggest that multi-level modeling is a useful approach to analyze policy-capturing data to deal with the non-independence of the residuals (autocorrelation).

The HLM 6 (Hierarchical Linear and Nonlinear Modeling) program (Raudenbush, Bryk, & Congdon, 2000) was used to analyze the data. HLM 6 uses a maximum likelihood approach to estimating the parameters in the models. Because of the relative newness of this analytical approach as well as the somewhat unusual denotations in the program output itself, detailed

information regarding the output will accompany the results. The data for this program are labeled as belonging to levels. Level 1 data is the lowest level and in the case of this study is associated with the 928 different responses to the scenarios as well as the different experimental conditions manipulated through the use of the different scenarios (i.e., policy present/absent, type of violation, whether or not an explanation was provided, whether the supervisor blamed or did not blame the nurse, and whether the organization took a blame or no-blame approach). The Level 2 variable was the measure of dispositional trust and dispositional anxiety; there were 29 measures of each variable. The data were imported from the SPSS 19 program into (IBM Corporation, 2012) HLM 6 indicating that the data followed the format of being ‘measures nested within persons’.

For each of the two dependent variables, MLM will estimate four different models: (1) a one-way ANOVA or ‘null’ model with no predictors, (2) a random coefficients model, (3) an intercepts as outcomes model and (4) a slopes as outcomes model. The results of HLM allow for an assessment of significance using robust standard errors, and these are the values reported in this thesis. They are robust in that they are valid estimates even if the data have unequal variances between persons.

The null model apportions the within-person and between-person variance associated with the dependent variable. If there is significant between-person variance, then this indicates that higher level (Level 2) effects (e.g., dispositional trust and dispositional anxiety) may be able to account for this between-group variance. The null model also produces the intraclass correlation coefficient (ICC), which is a ratio of the between-person variance to total variance. The higher the ICC is, the greater the difference between the respondents on the dependent

variable. If there is significant variance between persons, then the researcher proceeds to conduct the random coefficients model.

The random coefficients model tests the relationships between the Level 1 predictors and the dependent variable. It is called a random coefficients model because the slopes and intercepts of the predictors on the criterion variable are allowed to vary across each person. In this policy-capturing method, it is akin to each person having their own regression equation. The pooled estimate of the regression coefficients is used to test whether or not any one predictor is significantly different from zero. One could stop at this point, but not if interested in higher order (Level 2) effects. One question of interest would be: Do the regression lines for each person cross the Y-axis (intercept) at different points? If they do, then it would be useful to have a Level 2 variable that could account for this intercept variance. This question is answered through the third model, intercepts as outcomes.

In the intercepts as outcomes model the individual differences variables (in this case dispositional trust and anxiety) are assessed as to whether they account for intercept differences between participants. This variance is associated directly with the dependent variable and thus it is the main effect of the individual difference variables on the ratings by the respondents.

Another question of interest would be: Do the slopes of the regression lines for each person vary? If they do, then it would be useful to have Level 2 variables that could account for this slope variance. This question is answered through the fourth model, slopes as outcomes. In the slopes as outcomes model the individual differences variables are assessed as to whether they account for slope differences between participants. These will test the interaction effects of dispositional trust and anxiety with each of the Level 1 predictors on the ratings by the respondents.

Manager-Nurse Trusting Culture. First the degree to which the variables in the scenario predicted the Manager-Nurse Trusting Culture was conducted. The results of the null model showed that there was a significant amount of between-person variance on the ratings of Manager-Nurse Trusting Culture ($\chi^2 (28) = 265.13, p < .001$). The ICC was .20, indicating that about 20% of the variance in the ratings are due to effects at Level 2 (including the within-person variance).

The next step tested Hypotheses 1a – 1e by specifying the random coefficients model. To reiterate, Hypotheses 1a-1e proposed that ratings of fostering a trusting culture between nurse and manager will be higher when: (a) organizations have a known policy for handling medical errors than when the policy is not known, (b) patient care managers violate policy due to lack of ability rather than lack of integrity, (c) patient care managers explain the procedure to be followed than when no explanation of process is provided, (d) patient care managers collect data about the medical error system-wide than when blaming the employee for the error, and (e) organizational leaders assume a system-wide approach to dealing with medical errors rather than laying blame on a specific employee.

All five of the predictors were entered simultaneously into the equation. The slopes were allowed to be random across participants. The predictors were not centered as they all took on only one of two values (0 or 1). Table 3 contains the results of the analysis. Hypotheses 1b – 1e were supported in that four of the five predictors significantly predicted ratings of Manager-Nurse Trusting Culture. Ratings of helping to create a just and trusting culture were higher when: (1) the violation was due to lack of knowing policy rather than disregarding it ($\gamma = .529; t (28) = 3.104, p = .003$); (2) an explanation was provided about how the error would be handled rather than providing no explanation ($\gamma = 1.705; t (28) = 8.480, p < .001$); (3) the supervisor makes

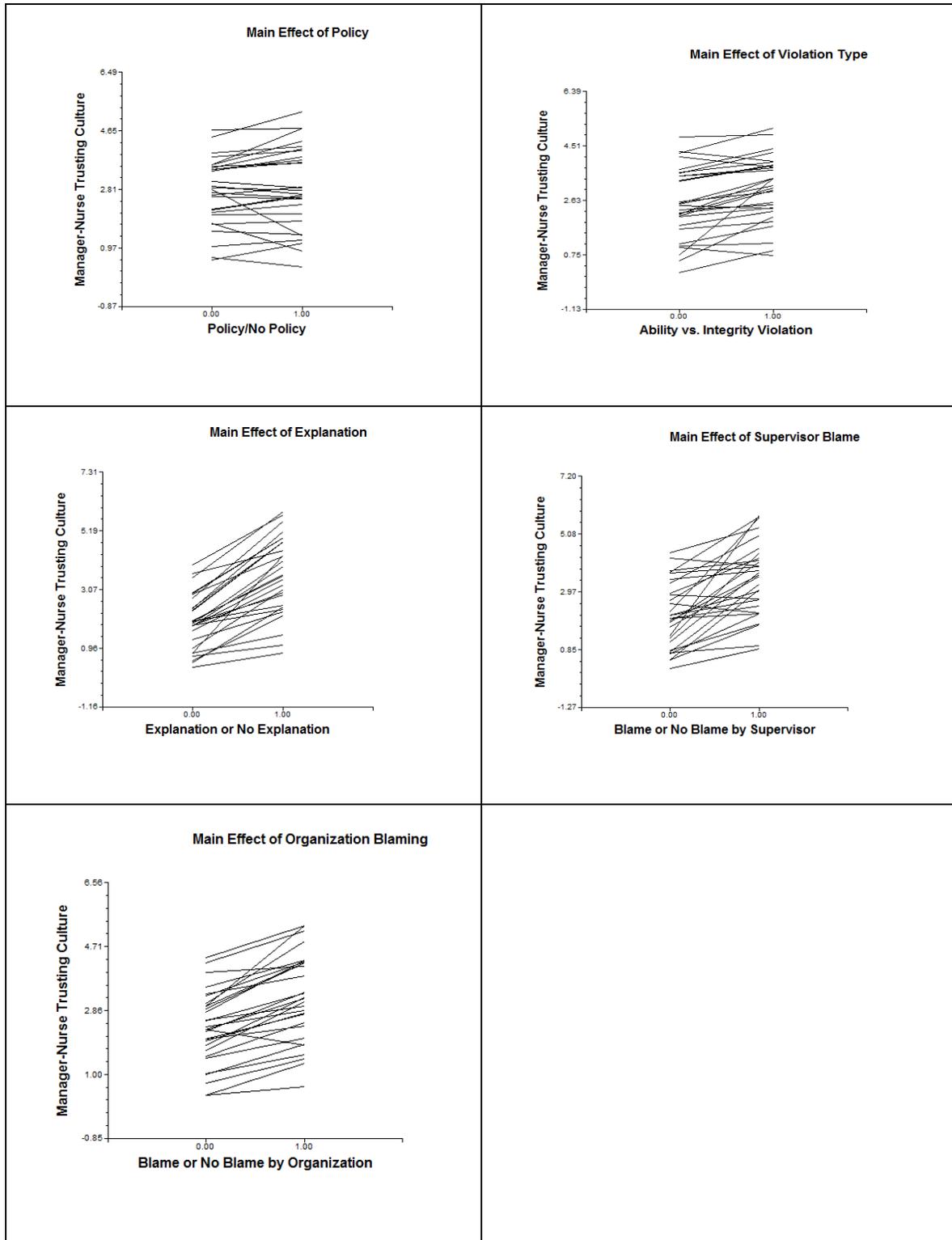
efforts to not blame the nurse rather than holding the nurse solely accountable ($\gamma = 1.357$; $t(28) = 5.254$, $p < .001$); and (4) the Executive Team at the organization plans to conduct a system review rather than holding accountable all individuals involved should legal action result ($\gamma = .879$; $t(28) = 5.415$, $p < .001$). Awareness of a formal policy did not predict the ratings ($p > .05$).

Figure 1 shows the resulting simple slopes of the five predictors for each of the 29 respondents. Note that the Policy variable slopes are quite flat, while the Explanation variable slopes are most consistently steepest across participants. This pattern is consistent with the values in Table 3.

Table 3. Random Coefficients Model for Predicting Manager-Nurse Trusting Culture

<i>Effect</i>	<i>γ Coefficient</i>	<i>Std. Error</i>	<i>t-value</i>	<i>df</i>	<i>p-value (1-tailed)</i>
Intercept	0.478	0.250	1.916	28	.033
Policy	0.138	0.155	0.887	28	.192
Violation	0.529	0.171	3.104	28	.003
Explanation	1.705	0.202	8.480	28	< .001
Blame-Supervisor	1.357	0.258	5.254	28	< .001
Blame-Organization	0.879	0.162	5.415	28	< .001

Figure 1. Random Coefficients Regression Lines Using the Five Manipulated Variables to Predict Manager-Nurse Trusting Culture

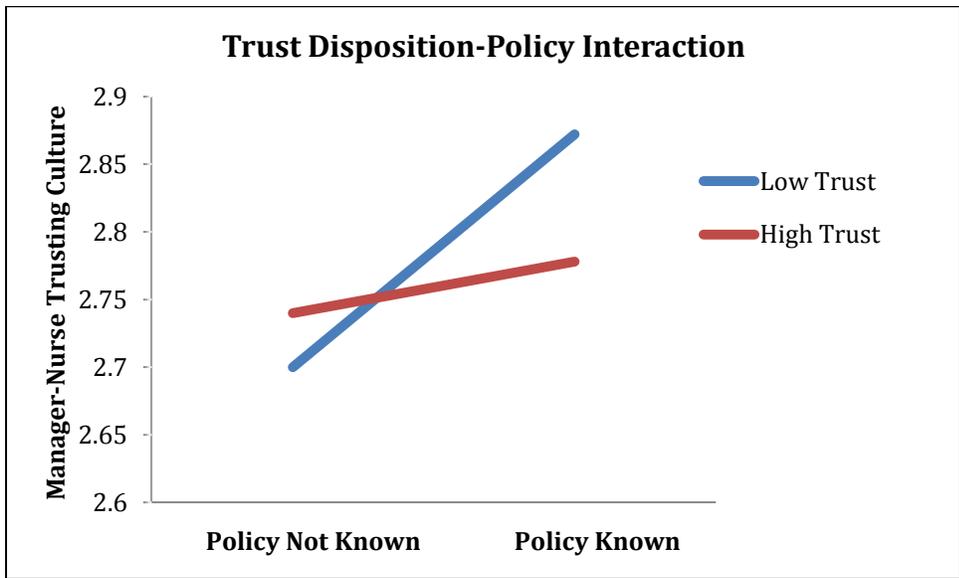


In addition to significance testing, the remaining variance left to be accounted for in the intercepts and slopes were assessed for significance using χ^2 tests, after the effects of the predictors were taken into account. The results indicated that the intercepts and all slopes had significant variance to be accounted for with other variables, leading the researcher to test for Level 2 effects.

Because an intercepts as outcomes analysis was warranted, the Level 2 predictors of dispositional trust and anxiety were added in to the equation for predicting the intercepts in addition to the Level 1 predictors. They were added and assessed individually. The measures were grand mean centered as suggested for ease of interpretation of coefficients (Kreft, DeLeeuw & Aiken, 1995). However, neither of the coefficients were significant. This indicated that there was no appreciable main effect on the outcome using dispositional trust or anxiety. Neither of these was hypothesized, but the main effects of moderators must be included in the model prior to analyzing any interactions effects (a similar requirement in other hierarchical approaches to testing interaction effects, such as multiple regression or factorial ANOVA).

The next step tested Research Questions 1a – 1e by specifying the slopes as outcomes model. Specifically, dispositional trust was added as a moderator of each of the Level 1 predictors and all were simultaneously entered into the equation. Only one of the moderated predictors was significant and that was for Policy ($\gamma = -0.410$; $t(27) = -2.229$, $p = .034$). Figure 2 shows the follow-up analysis of this effect. The lines show the respondents' simple slopes for high (upper 75th percentile) and low (lower 25th percentile) on dispositional trust. The interpretation is that those with lower levels of dispositional trust responded more positively to the nurse having knowledge that a policy was in place to deal with medical errors.

Figure 2. Slopes as Outcomes: Interaction Between Policy and Dispositional Trust on Manager-Nurse Trusting Culture



A similar approach was used to assess Research Questions 2a – 2e by adding anxiety as a moderator of each of the Level 1 predictors. Two of the moderated predictors were significant: Explanation ($\gamma = -0.583$; $t(27) = -2.174$, $p = .038$) and Manager Blame ($\gamma = -1.097$; $t(27) = -3.026$, $p = .006$). Figures 3 and 4 show the follow-up assessment of these effects. The lines show the respondents' simple slopes for high (upper 75th percentile) and low (lower 25th percentile) on anxiety. Those with lower levels of anxiety responded more positively to the nurse being provided an explanation of the procedures to be followed after the error, and when the manager did not specifically blame the nurse.

Figure 3. Slopes as Outcomes: Interaction Between Explanation and Anxiety on Manager-Nurse Trusting Culture

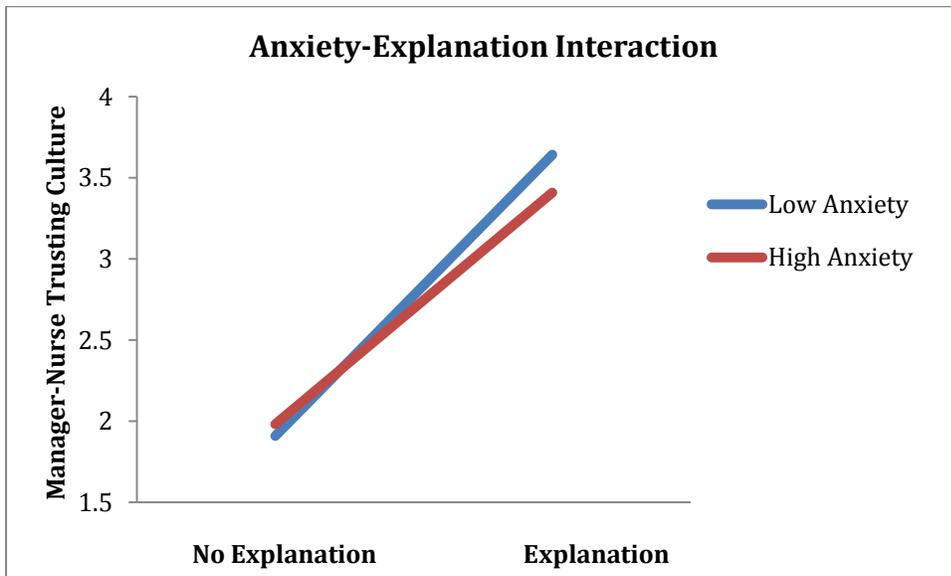
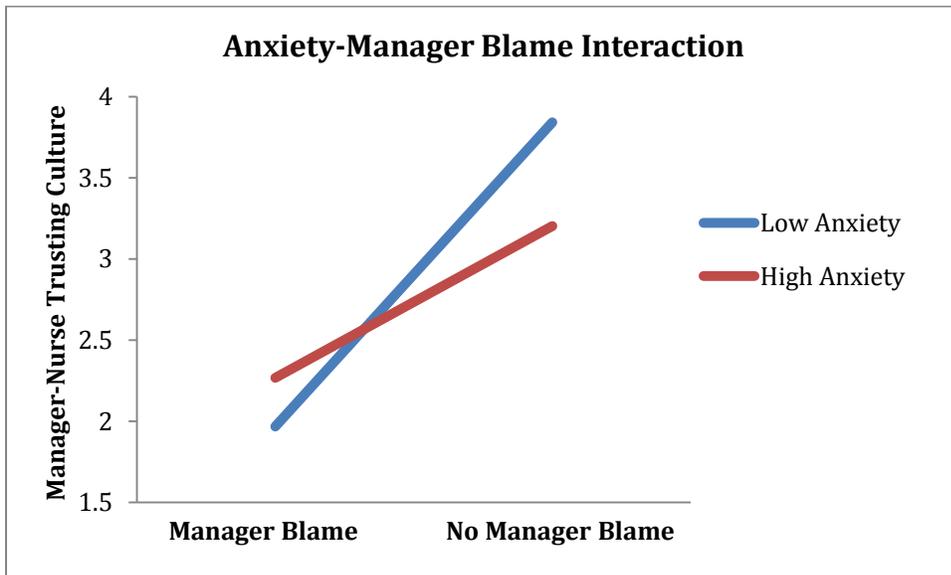


Figure 4. Slopes as Outcomes: Interaction Between Manager Blame and Anxiety on Manager-Nurse Trusting Culture



Finally some effect size estimates for the models are shown in Table 4. An estimate of the fit of the model to the data is contained in the deviance estimate. Because HLM uses a maximum likelihood approach to parameter estimation, a likelihood function is generated. The larger this value is the worse the fit of the model. This likelihood function value, when multiplied by -2, results in a deviance estimate. As with the likelihood function value, the larger it is the worse the fit of the model. Deviance estimates are distributed as a χ^2 . While deviance estimates on their own are not useful, they are helpful in determining if the model fit improves when models are nested. Thus, going from the null model to the random coefficients model, the improvement in fit is 579 ($4161.4 - 3582.4 = 579$). This difference is distributed as a χ^2 . The degrees of freedom used to test the χ^2 is the difference in the number of parameters estimated ($28-3 = 25$). This reduction is highly significant. However the improvement in fit of the models for the intercepts as outcomes and slopes as outcomes are not significant.

It is also possible to estimate the proportional reduction in error variance by calculating the R^2 . There is inconsistency in the literature regarding the calculation of R^2 . Luke (2004) presents a compelling approach that assesses the degree to which the error variances of the Level 1 dependent variable and the intercept variance are proportionally decreased by adding Level 1 predictors. Taken together the R^2 using the five predictors was .409, indicating that there is a 40.9% reduction in the error variance when the Level 1 predictors are added into the model. Kreft and DeLeeuw (1998) note that the R^2 should not be calculated for the slopes as outcomes model given the complexity in estimating simultaneously both within and between person variance as well as random slopes. Thus, there is no R^2 provided for the Level 2 models.

Table 4. Effect Size Measurements for Predicting Manager-Nurse Trusting Culture

<i>Models</i>	<i>Deviance (parameters estimated)</i>
Null	4161.4 (3)
Random Coefficients	3582.4 (28)
Intercepts as Outcomes (Dispositional Trust)	3582.3 (29)
Intercepts as Outcomes (Anxiety)	3582.3 (29)
Slopes as Outcomes (Dispositional Trust)	3578.2 (34)
Slopes as Outcomes (Anxiety)	3573.5 (34)

Organizational Trusting Culture. Next, the degree to which the variables in the scenario predicted in Organizational Trusting Culture was conducted. The results of the null model showed that there was a significant amount of between-person variance on the ratings of Manager-Nurse Trusting Culture ($\chi^2 (28) = 222.63, p < .001$). The ICC was .17, indicating that about 17% of the variance in the ratings are due to effects at Level 2.

The next step tested Hypotheses 2a – 2e by specifying the random coefficients model. Hypotheses 2a – 2e proposed that ratings of fostering a trusting culture at an organizational level will be higher when: (a) organizations have a known policy for handling medical errors than when the policy is not known, (b) patient care managers violate policy due to lack of ability rather than lack of integrity, (c) patient care managers explain the procedure to be followed than when no explanation of process is provided, (d) patient care managers collect data about the medical error system-wide than when blaming the employee for the error and when (e) organizational leaders assume a system-wide approach to dealing with medical errors rather than laying blame on a specific employee. All five of the predictors were entered simultaneously into

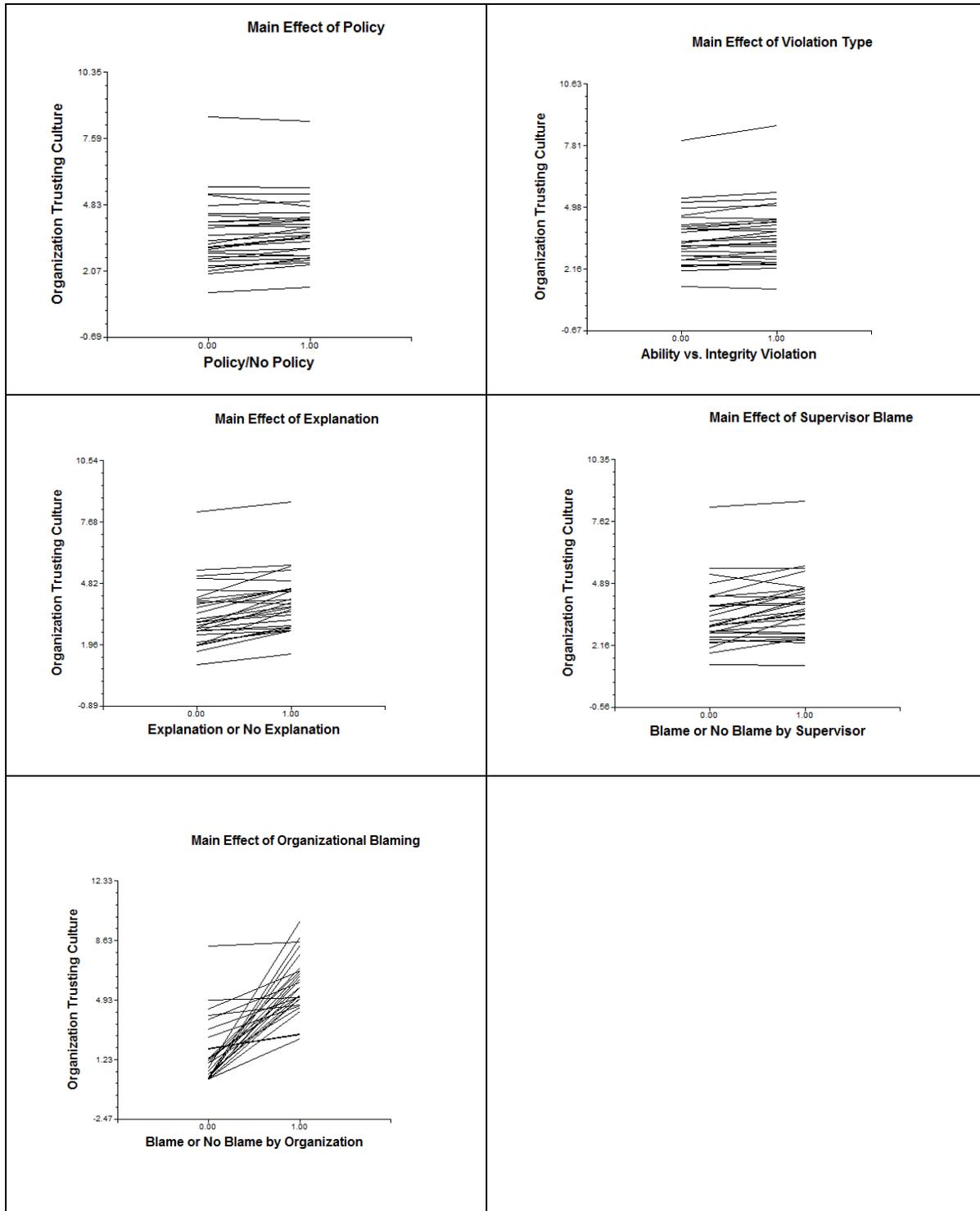
the equation and the slopes were allowed to be random across participants. The predictors were not centered as they all took on only one of two values (0 or 1).

Table 5 contains the results of the analysis. Like the prior set of analyses on Manager-Nurse Trusting Culture, Hypotheses 2b – 2e were supported in that four of the five predictors significantly predicted ratings of Organizational Trusting Culture. Ratings of helping to create a just and trusting culture were higher when: (1) the violation was due to lack of knowing policy rather than disregarding it ($\gamma = .156$; $t(28) = 1.949$ $p = .031$); (2) an explanation was provided about how the error would be handled rather than providing no explanation ($\gamma = .6244$; $t(28) = 4.729$, $p < .001$); (3) the supervisor makes efforts to no blame the nurse rather than holding the nurse solely accountable ($\gamma = .422$; $t(28) = 3.216$, $p = .002$); and (4) the Executive Team at the organization plans to conduct a system review rather than holding accountable all individuals involved should legal action result ($\gamma = 4.106$; $t(28) = 8.383$, $p < .001$). Again, awareness of a formal policy did not predict the ratings ($p > .05$). Further, Figure 5 shows the resulting simple slopes of the five predictors for each of the 29 respondents.

Table 5. Random Coefficients Model for Predicting Organizational Trusting Culture

<i>Effect</i>	γ Coefficient	Std. Error	t-value	df	p-value (1-tailed)
Intercept	0.914	0.395	2.313	28	.014
Policy	0.168	0.106	1.588	28	.062
Violation	0.156	0.080	1.949	28	.031
Explanation	0.624	0.132	4.729	28	< .001
Blame-Supervisor	0.422	0.131	3.216	28	.002
Blame-Organization	4.106	0.490	8.383	28	< .001

Figure 5. Random Coefficients Regression Lines Using the Five Manipulated Variables to Predict Organizational Trusting Culture

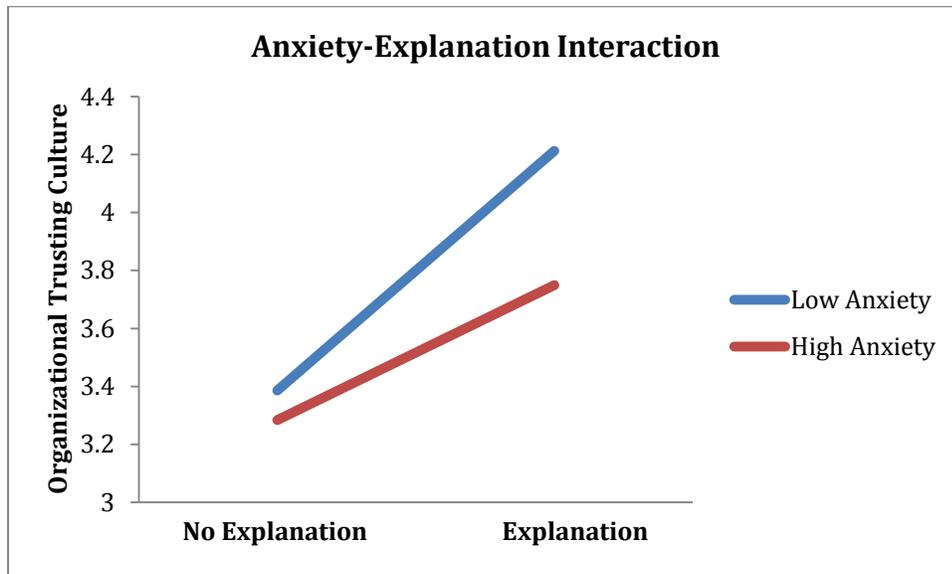


In addition to significance testing, the remaining variance left to be accounted for in the intercepts and slopes were assessed for significance using χ^2 tests, after the effects of the predictors were taken into account. The results indicated that the intercepts and the slopes for Policy, Explanation, Blame-Supervisor and Blame-Organization had significant variance to be accounted for with other variables, leading the researcher to test for Level 2 effects.

Because an intercepts as outcomes analysis was warranted, the Level 2 predictors of dispositional trust and anxiety (grand mean centered) were individually added in to the equation for predicting the intercepts in addition to the Level 1 predictors. However, as in the prior set of analyses, the main effects of the moderators were not significant.

The next step tested Research Questions 3a – 3e (adding dispositional trust a moderator of each of the Level 1 predictors), and then Research Questions 4a – 4e (adding anxiety a moderator of each of the Level 1 predictors) using slopes as outcomes models. Only one of the 10 analyses showed significance; Explanation was moderated by anxiety ($\gamma = -.467$; $t(27) = -2.317$, $p = .028$). Follow-up tests showed that those with lower levels of anxiety were more positively affected by the nurse receiving an explanation of the procedures to be followed after the error than those with high levels of anxiety (see Figure 6).

Figure 6. Slopes as Outcomes: Interaction Between Explanation and Anxiety on Organizational Trusting Culture



The effect size estimates for the models are shown in Table 6. Going from the null model to the random coefficients model, the improvement in fit was 1435.4. This reduction is highly significant with 25 degrees of freedom. However the improvement in fit of the models for the intercepts as outcomes and slopes as outcomes were not significant. The R^2 using the five predictors for the random coefficients model was .408, indicating a substantial reduction in the error variance components using the five Level 1 predictors relative to the null model.

Table 6. Effect Size Measurements for Predicting Organizational Trusting Culture

<i>Models</i>	<i>Deviance (parameters estimated)</i>
Null	4603.1 (3)
Random Coefficients	3167.7 (28)
Intercepts as Outcomes (dispositional trust)	3167.3 (29)
Intercepts as Outcomes (anxiety)	3166.7 (29)
Slopes as Outcomes (dispositional trust)	3164.7 (34)
Slopes as Outcomes (anxiety)	3156.8 (34)

Hypotheses 3a – 3c that Violation Type, Explanation, and Manager Blame would be more predictive of Manager-Nurse Trusting Culture ratings than Organizational Trusting Culture ratings were assessed by comparing the relevant regression coefficients for the Random Coefficients Models. These comparisons resulted in z -statistics. All three hypotheses were supported ($z = 1.98, p < .05$; $z = 4.48, p < .01$; $z = 3.23, p < .01$) suggesting that ratings of trust of the patient care manager were more highly related to the variables of patient care manager response: type of violation by the manager, providing explanation, and assignment of blame by the patient care manager, than to the variables of organizational context.

Hypotheses 4a and 4b that Policy Awareness and Organizational Blame would be more predictive of Organizational Trusting Culture ratings than Manager-Nurse Culture ratings were assessed by comparing the relevant regression coefficients for the Random Coefficients Models. Neither hypothesis was supported, as the regression coefficients were not different.

CHAPTER FOUR: DISCUSSION

Recognition of the importance of a just and trusting culture within healthcare organizations has been a focal point in enhancing patient safety. As it stands however, healthcare organizations are impeded by a culture of blame whereby employees are afraid to report medical errors. According to Khatri, Brown and Hicks (2009), a blame culture cultivates distrust and fear, and people blame each other to avoid being reprimanded or put down. This becomes a concern because it puts patient safety at risk as unreported medical errors are likely to reoccur. The purpose of this study was to identify managerial and organizational responses to medical errors that would assist in building a just and trusting culture after a medical error has taken place.

The current study examines several factors of trust that were hypothesized to relate to aspects of a just and trusting culture at both interpersonal and organizational levels. Strong empirical evidence for almost all of the hypotheses of the cues important in creating a just and trusting culture was found (Hypotheses 1a – 1e and 2a – 2e). Specifically, when violations of trust are ascribed to lack of ability rather than lack of integrity on the part of the violator, trust is more likely to be enhanced. This is consistent with recent research that contends trust violations come in different types (Kim, Ferrin, Cooper & Dirks, 2004). Those due to a lack of ability on the trustor's part are viewed less negatively than those due to a lack of integrity. If a clear explanation of how the medical error will be handled is provided rather than no explanation, trust is enhanced. This finding is clearly in line with the interactional justice literature pointing to its critical role in organizational trust research and practice (Greenberg, 1994). Finally, when the response of the direct manager as well as the organization as a whole is to assess the system rather than to blame an individual, trust is enhanced. These findings echoed our pilot study work, as the most salient issue for the lack of trust was individual-level blame. We did not find support

that knowledge, or lack thereof, about there being a policy to handle medical errors enhanced trust. This does not mean that a medical error policy is not needed, just that knowledge of its existence seems less important than how it is enacted. Furthermore, it could be the case that reporting policies already exist within the Alberta Health Services organization as efforts are being made to create incident reporting systems for medical errors and near misses (e.g., Kaplan, Battles, Van der Schaff, Shea, & Mercer, 1998). Finally, whether or not the existence of reporting policies are significant to the development or promotion of a just and trusting culture may be irrelevant to the sample at hand.

In terms of the proposed research questions, the individual difference variables of dispositional trust and dispositional anxiety showed little empirical promise as moderators; only four of the 20 moderated predictors were significant. First, at the interpersonal level between nurse and manager, a trusting disposition moderated the relationship between policy (policy vs. no policy). This finding suggests that those with lower levels of dispositional trust responded more positively to the nurse having knowledge that a policy was in place to deal with medical errors. Previous research aligns with this notion regarding individual differences of trust as Colquitt and colleagues (2006) suggested that justice would have less value to individuals who trusted “by default,” instead taking on more importance to the dispositionally suspicious.

Also at the interpersonal level, dispositional anxiety moderated manager blame relationships; those with lower levels of anxiety responded more positively when the manager did not specifically blame the nurse. Lastly, at both the interpersonal and organizational level, anxiety moderated the explanation variable; individuals with lower levels of anxiety were more positively affected by the nurse receiving an explanation of the procedures to be followed after the error than those with high levels of anxiety. Although there is limited research examining the

role of anxiety as a moderator in perceptions of trust, the moderation effects make logical sense if we examine directional correlations presented in previous research. As previously mentioned, Cook and Wall (1980) found that dispositional trust is negatively correlated with levels of anxiety; as levels of anxiety decrease, dispositional trust increases (or vice versa). In the current study, ratings of trust were higher at both interpersonal and organizational levels when an explanation was provided and when the manager did not specifically blame the nurse. The negative correlation, in terms of directionality, suggests that individuals with lower anxiety will have increased levels of trust; this relationship was found when anxiety was examined as a moderator in the hypothesized relationships regarding managerial blame and explanation (managerial and organizational). This may be counterintuitive, but suggests that anxiety may not be easily influenced by the specific situation.

In comparing the magnitude of coefficients (Hypotheses 3a – 3c, 4a, and 4b), the ratings of trust between manager and nurse were more highly related to the variables that were closely tied to the managers response: 1) type of violation by the manager, 2) providing explanation, and 3) assignment of blame by the patient care manager, than to the variables of organizational context. However, ratings of trust of the organization were not significantly related to the organizational cues of policy and organizational response. These findings partially support the fact that individuals distinguish between individual and collectives or systems of authority in making assessments (e.g., Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Lind & Tyler, 1988). However, more support for the emphasis on interpersonal trust when making assessments is evidenced. Ultimately, these findings reiterate the importance of interpersonal trust and emphasize the importance of interpersonal relationships when barriers of a just and trusting culture are examined.

Practical Implications

The findings from the current study offer some practical implications within healthcare organizations and, more specifically, implications to promoting a just and trusting culture. First of all, in our assessments of the ratings themselves, we found that participants provided lower ratings for the Manager-Nurse Trusting Culture vs. the Organizational Culture in response to the same scenarios. This suggests that raters were harsher in their response to the different scenarios on the more psychologically close relationship between manager and nurse than the more distant organizational culture. This points to the importance that building a just and trusting culture will be most effectively accomplished via employee interactions with the primary supervisor.

Previous research that aligns with the aforementioned finding is evidenced in the beneficial learning effect. In the learning effect commitment-based management increases learning from mistakes by inducing a “virtuous cycle” in which organizational members report all the medical errors and search extensively for their causes in an open and trusting environment, which is not dependent upon and operates without interference from management (Khatri, Brown & Hicks, 2009). In line with the learning effect, supervisors can demonstrate a just and trusting culture and lead by example. Subsequently, employees can learn from their supervisors and exercise their best effort to provide high-quality patient care and enhance patient safety.

However, previous research also suggests that managers believe that trust starts at the top of an organization and trickles down (Laschinger et al., 2000). Ultimately, in a hierarchical setting, someone needs to lead by example. If organizations and/or managers do not promote and role model a just and trusting culture, then the transition from a blame culture to a just and trusting culture will not ensue and patient safety will remain a concern within the healthcare

industry. The need for examples to be set within healthcare organizations is further evidenced by the responses to the interview questions provided in the pilot study as many individuals suggest that supervisors need to demonstrate a just and trusting culture and stand by what this culture represents. Findings from the current study also provide clear implications for how to build a just and trusting culture. Managers need to be trained about what the medical error policies are, enforce them properly, and take time to explain them to their subordinates. In addition, managers and organizations need to be diligent at assessing the entire system of events surrounding the error and avoid blaming individuals. It is important to note that such recommendations have previously been implemented within AHS (the Region) (Flemons et al. 2005). However, based on the current study, it is evident that even after several years, these policies and procedures have not had the positive effect on the organizational culture as they were intended. The development of a just and trusting culture clearly requires active participation by managers and organizations. As noted by Roberts (1989), management attitudes and institutional/organizational climate can greatly influence the success or failure of reporting errors.

Limitations

Although this study contributes to the literature and addresses some concerns from previous research, it is not without limitations. Perhaps the most obvious limitation that arises in this study is the small sample size. The final sample for the policy-capturing study had only 29 respondents. In turn, although we had 928 different responses in our Level 1 data, on which substantial support for the main effects of the cues was found, only 29 responses were available for the Level 2 interaction assessments of dispositional trust and dispositional anxiety. While a few effects were found, the non-significance of other effects might be easily rectified with a larger sample.

Nonetheless, as previously mentioned, over 2000 participants were initially contacted to participate in this study and data collection took place over a time period of five months, giving participants more than enough time to complete the scenarios. Furthermore, reminder emails were sent out to participants approximately one month after the initial surveys were sent out. In sum, ample effort was put forth in order to maximize the sample size. However, the resulting response rate of less than two percent may speak to the lack of concern regarding a just and trusting culture within healthcare organizations. Alternatively, AHS employees may be too busy to complete this study as the task may have simply been too taxing. Finally, it was pointed out that accessing front-line employees do not normally communicate via their work emails (D. White, personal communication, May 2, 2013) and thus may never have even seen the invitation to participate.

Although the sample size was limited and is not representative, it should be pointed out that the average length of tenure at AHS was 10 years, and the majority of participants were in administrative roles. As previously mentioned, many individuals feel that the transition from a blame culture to a just and trusting culture begins at the top (Mishra & Morrisey, 1990). Ultimately, if perceptions of a trusting culture actually do begin at the top, then the current sample in this study does consist of the people we want to assess (individuals in management/administrative roles). In turn, the limitation of non-front line employees in the sample is not as worrisome as one would expect. Nonetheless, future research using policy-capturing might be best conducted with some sets of participants completing some of the scenarios while other participants complete other scenarios. While this introduces a possible between-person effect, a larger sample size and random assignment of scenarios might offset this problem.

A second limitation has to do with the overall generalizability of the results. In examination of the distribution of participants involved in the current study, the majority of these individuals were female and in administrative roles within the health care system. As such, the results are limited in their generalizability to individuals employed in front-line positions (such as nurses) or males who are employed in the health care system. Given that these individuals would be of most interest to target regarding reporting of medical errors, this was a disappointing feature of the sample. Moreover, between-subject analyses regarding gender and role (front-line employee vs. manager/administrative) differences were not possible given the extremely small sample size.

A third limitation pertains to the fact that in the policy-capturing study we were only able to manipulate five possible trust-affecting cues. Although these cues were based on and derived from the pilot study and extant literature, there are other factors that could have been examined. However, even adding one more cue would have increased the number of scenarios to completely cross with each other to 64. So while, it would have been interesting to assess more trust-affecting cues the fatigue of our respondents had to be taken into account.

Despite these limitations, we did find support for several of the proposed hypotheses. Furthermore, based on the findings, it was evident that both the theoretically- and empirically-based factors selected were related to perceptions of building a just and trusting culture within the healthcare organization.

Research Implications and Future Directions

There are a number of interesting areas for future research in the identification of managerial and organizational responses to medical errors that would assist in building a just and trusting culture after a medical error has taken place.

As noted previously, we were only able to assess five possible trust-affecting cues; however future research could examine different cues, or varying levels of the same cues. For example, Kim and colleagues (2004) suggest that ability and integrity are the two most important dimensions of trust. However, there is some empirical evidence (e.g., Mayer & Davis, 1999) suggesting that benevolence is also related to trust. According to Mayer et al. (1995), benevolence is the extent to which the trustee is perceived to want to do good to the trustor. Ultimately, a third antecedent of trust (ability, integrity *and* benevolence) could be examined within a policy-capturing study. By incorporating the full model of trust proposed by Mayer and colleagues, future studies could examine benevolence, integrity and ability mediated by trust leads to outcomes directly related to increasing and improving patient safety.

Second, another area for future research arises when we examine the literature on trust reparations. Many studies that examine trust violations investigate the effects of apology vs. denial for repairing trust; specifically experimental studies of impression management reveal that the expression of remorse following a transgression can mitigate punishment (e.g., Schwartz, Kane, Joseph, & Tedeschi, 1978). In essence, future research could examine whether an apology on behalf of a supervisor and/or organization after one is blamed could mitigate the distrust between the two parties. Although research regarding apology and denial after a trust violation (blame) is very limited in the healthcare literature, results from our pilot study suggest that apologies are important for the building of a just and trusting culture.

The current study examined trust in a direct leader (interpersonal trust) and trust at the organizational level. The latter relationship significantly contributes to the trust literature as most of the work on trust in specific targets has focused on trust in a direct leader (e.g., Aryee, Budhwar, & Chen, 2002; Tan & Tan, 2000) whereas, research on trust in organizations (Aryee et

al; Tan & Tan) has been quite limited. The current study begins to address the gap in the organizational trust literature. However, there are other avenues of trust within organizational settings that could be examined. For example, it would be interesting to examine the role of coworker trust (another branch of interpersonal trust) in healthcare organizations. According to Tan and Lim (2009), coworkers are important because they form the emergent information network in organization, which is characterized by more horizontal flow of information as opposed to formal networks. Furthermore, previous studies have shown that employees tend to communicate work-related ideas and problems to coworkers, rather than formally designated parties (e.g., Stevenson & Gilly, 1991). In the current study we found that building a just and trusting culture would be most effectively accomplished via employee interactions with the primary supervisor. However, it could be the case that building a just and trusting culture would be most effective at the horizontal coworker level as employees are more likely to communicate at this hierarchical plane. This may be extremely beneficial to increased trust in organizations as a whole because previous research suggests that trust in coworkers is significantly related to trust in organizations (Tan & Lim).

Lastly, as dispositional trust and dispositional anxiety received only minimal empirical evidence as strong moderators, future research should examine other potential moderators that may have significant effects on the proposed relationships of this study. According to Jensen-Campbell and Graziano (2001), agreeableness is distinctive in its connection to motive for maintaining positive interpersonal relations; on a macro-level, agreeableness could also have an effect on organizational relations. In the present study, trust (facet level for agreeableness) was examined as a potential moderator, but other facets of the IPIP Big-Five agreeableness factor markers could be used in future research as they relate to interpersonal and, potentially,

organizational relations. One facet of relevance that is presented in the IPIP is the facet of cooperation (agreeableness factor). According to Bateson (1988), one conceptual difficulty with studying trust is that it has often been confused with cooperation. Although trust can frequently lead to cooperative behavior, trust is not a *necessary* condition for cooperation to occur (Mayer, Davis, & Schoorman, 1995) however; it is an “important” condition for cooperation (Hwang & Burgers, 1997). Although trust and cooperation have been previously used as synonymous terms, it is important to distinguish between them. As such, future studies should examine the cooperation facet of the agreeableness factor as a potential moderator.

Although other moderators of trust should be examined in future research, dispositional trust and dispositional anxiety should not be eliminated as potential moderators in future studies. Although these variables did not suggest strong empirical support for in the moderation of trust in the current study, it is possible that variance within these variables was limited due to the small sample size.

Contributions

The contributions of this study are three-fold. From a theoretical perspective, most of the extant literature on trust repair has been conducted with student samples in laboratory gaming situations. The present study extends the findings from these studies into the field. Secondly, this study extends the scant empirical research into contextual variables that should be of assistance to organizations in building and repairing trust in their organizations. Finally, the medical error literature is extensive and has documented that trust in reporting is an important piece of the puzzle in trying to prevent errors from occurring. This study speaks directly to this literature using information gained from health care providers and conducting an empirical, experimentally

designed study. As a result, findings will be of interest to researchers and practitioners in the field of healthcare and patient safety.

Conclusion

By implementing a pilot study and examining the extant literature on trust, the present study investigated a number of important variables in relation to enhancing a just and trusting culture within healthcare organizations. First, findings demonstrated that both the theoretically- and empirically-based factors selected were related to perceptions of building a just and trusting culture within the healthcare organization. These included type of trust violation, providing or not providing an explanation, and blame vs. non-blame by managers and the organization. Furthermore, the factors were significantly related to fostering a just and trusting culture at both the interpersonal and organizational level. Second, the present study demonstrated that individual differences of dispositional trust and dispositional anxiety moderated some of the predicted relationships. Third, inspection of trust ratings revealed that participants provided lower ratings for the Manager-Nurse Trusting Culture vs. the Organizational Culture in response to the same scenarios. The fact that different ratings were given in response to interpersonal vs. organizational trust for the same scenario demonstrates the importance that building a just and trusting culture will be most effective between an employee and his/her supervisor. Lastly, it was found that participants were able to distinguish between interpersonal and organizational levels of trust as interpersonal ratings of trust of the patient care manager were more highly related to the variables of patient care manager response. Overall, the findings of the present study can be useful in terms of developing training systems for managers and organizational executive teams for managing medical error events in a manner that will develop a just and trusting culture. This, in turn, should foster employees to be forthcoming about medical errors and near misses.

Ultimately, the development of a just and trusting culture should help increase incident reporting and thus improve patient safety and healthcare quality.

References

- Aiman-Smith, L., Scullen, S.E., & Barr, S.H. (2002). Conducting studies of decision-making in organizational contexts: A tutorial for policy-capturing and other regression-based techniques. *Organizational Research Methods*, 5, 388-414.
- Alberta Health Services (2012). *Reporting of Clinical Adverse Events, Close Calls and Hazards*. <http://www.albertahealthservices.ca/hp/if-hp-clp-policy-reporting-of-clinical-adverse-events.pdf>
- Ammeter, A. P., Douglas, C., Ferris, G. R., & Goka, H. (2004). A social relationship conceptualization of trust and accountability in organizations. *Human Resource Management Review*, 14, 47-65.
- Aryee, S., Budhwar, P. S., & Chen, Z. X. (2002). Trust as a mediator of the relationship between organizational justice and work outcomes: Test of a social exchange model. *Journal of Organizational Behavior*, 23,267-285.
- Ashford, S. J., Rothbard, N. P., Piderit, S. K., & Dutton, J. E. (1998). Out on a climb: The role of context and impression management in selling gender-equity issues. *Administrative Science Quarterly*, 43(1), 23-57.
- Atwater, L. E. (1988). The relative importance of situational and individual variables in predicting leader behavior. *Group and Organization Studies*, 13, 290-310.
- Baker, G.R., & Norton, P. (2001). *Patient Safety and Healthcare Error in the Canadian Healthcare System: A Systematic Review and Analysis of Leading Practices in Canada with Reference to Key Initiatives Elsewhere*. Health Canada. <http://www.hc-sc.gc.ca/hcs-sss/pubs/qual/2001-patient-securit-rev-exam/index-eng.php>

- Baker, G. R., Norton, P. G., Flintoft, V., Blais, R., Brown, A., Cox, J,...Tamblyn, R. (2004). The Canadian Adverse Events Study: the incidence of adverse events among hospital patients in Canada. *Canadian Medical Association Journal*, 170(11), 1678-1686.
- Barber, B. (1983). *The logic and limits of trust*. New Brunswick, NJ: Rutgers University Press.
- Barling, J., & Phillips, M. (1993). Interactional formal and distributive justice in the workplace: an exploratory study. *Journal of Psychology*, 127, 649-656.
- Bateson, P. (1988). The biological evolution of cooperation and trust. In D. G. Gambetta (Ed.), *Trust: Making and Breaking Cooperative Relations* (14-30). New York: Basil Blackwell.
- Bazerman, M. H. (1994). *Judgment in managerial decision making*. New York: Wiley.
- Blau, P. M. (1964). *Exchange and power in social life*. New York: Wiley.
- Boan, D., & Funderburk, F. (2003). Healthcare Quality Improvement and Organizational Culture. *Organizational Culture and Quality Improvement*, 1, 1-18.
- Boss, R. W. (1978). Trust and managerial problem solving revisited. *Group and Organization Studies*, 3, 331-342.
- Bradley, E. H., Herrin, J., Mattera, J. A., Holmboe, E., Wang, Y., Frederick, P., Roumanis, S. A., Radford, M. J., & Krumholz, H. M. (2005). Quality improvement efforts and hospital performance. *Medical Care*, 43(3), 282-291.
- Brennan, T. A., Leape, L. L., Laird, N. M., Hebert, L., Localio, A. R., Lawthers, A. G.,...Hiatt, H. H. (1991). Incidence of adverse events and negligence in hospitalized patients. Results of the Harvard Medical Practice Study I. *New England Journal of Medicine*, 324(6), 370-376.
- Butler, J. K., & Cantrell, R. S. (1984). A Behavioral Decision Theory Approach Modeling Dyadic Trust in Superiors and Subordinates. *Psychological Reports*, 55, 19-28.

- Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology, 86*, 386-400.
- Colquitt, J. A., Conlon, E., Wesson, M., Porter, C., & Ng, K. (2001). Justice at the millennium: A meta-analytic review of 25 years of organizational justice research. *Journal of Applied Psychology, 86*, 425-455.
- Colquitt, J. A., Scott, B. A., & LePine, J. A. (2007). Trust, Trustworthiness, and Trust Propensity: A Meta-Analytic Test of Their Unique Relationships with Risk Taking and Job Performance. *Journal of Applied Psychology, 92*(4), 909-927.
- Colquitt, J. A., Scott, B. A., Judge, T. A. & Shaw, J. C. (2006). Justice and personality: Using integrative theories to derive moderators of justice effects. *Organizational Behavior and human Decision Processes, 100*(1), 110-127.
- Connor, M., Duncombe, D., Barclay, E., Bartel, S., Borden, C., Gross, E., Miller, C., & Ponte, P. R. (2007). Creating a Fair and Just Culture: One Institution's Path Toward Organizational Change. *The Joint Commission Journal on Quality and Patient Safety, 33*(10), 617-624.
- Cook, H. H., Guttmanova, K., & Joyner, J. C. (2004). An error by any other name. *American Journal of Nursing, 104*, 32-43.
- Cook, J., & Wall, T. (1980). New work attitude measures of trust, organizational commitment and personal need non-fulfillment. *Journal of Occupational Psychology, 53*, 39-52.

- Creed, W. E. D., & Miles, R. E. (1996). Trust in organizations: A conceptual framework linking organizational forms, managerial philosophies, and the opportunity costs of controls. In R. M. Kramer & T. R. Tyler (Eds). *Trust in organizations: Frontiers of theory and research*, Thousand Oaks, CA: Sage, 16-38.
- Cropanzano, R. & Greenberg, J. (1997). Progress in organizational justice: tunneling through the maze. *International Review of Industrial and Organizational Psychology*, Wiley, New York, NY, 317-372.
- Cropanzano, R., & Mitchell, M.S. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management*, 31, 874-900.
- Cummings, L. L. (1983). Performance-evaluation systems in context of individual trust and commitment. In F. J. Landy, S. Zedrick, & J. Cleveland (Eds.), *Performance measurement and theory*. Hillsdale, N.J: Earlbaum.
- Daft, R. L. (2004). *Organizational theory and design*. 8th ed. Cincinnati, OH: South-Western College Publishing.
- Deluga, R. J. (1994). Supervisor trust building, leader-member exchange and organizational citizenship behavior. *Journal of Occupational and Organizational Psychology*, 67, 315-326.
- Detert, J. R., & Edmondson, A. C. (2007). Why employees are afraid to speak up. *Harvard Business Review*, 23-25.
- Dirks, K. T., & Ferrin, D. L. (2001). The Role of Trust in Organizational Settings. *Organizational Science*, 12(4), 450-467.
- Dirks, K. T., & Ferrin, D. L. (2002). Trust in Leadership: Meta- Analytic Findings and Implications for Research and Practice. *Journal of Applied Psychology*, 87(4), 611-628.

- Dougherty, T.W., Ebert, R.J., & Callender, J.C. (1986). Policy capturing in the employment interview. *Journal of Applied Psychology, 71*, 9-15.
- Dutton, J. E., Ashford, S. J., Lawrence, K. A., & Miner-Rubino, K. (2002). Red light, green light: Making sense of the organizational context for issue selling. *Organizational Science, 13*(4), 355-369.
- Dutton, J. E., Ashford, S. J., Oneill, R. M., Hayes, E., & Wierba, E. E. (1997). Reading the wind: How middle managers assess the context for selling issues to top managers. *Strategic Management Journal, 18*(5), 407-423.
- Edmondson, A. C. (2002). The local and variegated nature of learning in organizations: A group-level perspective. *Organizational Science, 13*(2), 128-146.
- Elder, N. C., Graham, D., Brandt, E., & Hickner, J. (2007). Barriers and motivators for making error reports from family medicine offices: A report from the American Academy of Family Physicians National Research Network (AAFP NRN). *Journal of the American Board of Family Medicine, 20*(2), 115-123.
- Feldman, D. C., & Arnold, H. J. (1978). Position choice: Comparing the importance of organizational and job factors. *Journal of Applied Psychology, 63*, 706-710.
- Fernandopulle, R., Ferris, T, Epstein, A., McNeil, B., Newhouse, J., Pisano, G., & Blumenthal, D. (2003). A research agenda for bridging the “quality chasm.” *Health Affairs, 22*(2), 178-190.
- Flemons, W. W., Eagle, C. J., & Davis, J. C. (2005). Developing a Comprehensive Patient Safety Strategy for an Integrated Canadian Healthcare Region. *Healthcare Quarterly, 8*, 122-127.

- Flemons, W.W., & McRae, G. (2012). Reporting, learning and the culture of safety. *Healthcare Quarterly, 15*, 12-17.
- Folger, R., & Konovsky, M. A. (1989). Effects of procedural and distributive justice on reactions to pay raise decisions. *Academy of Management Journal, 32*, 115-130.
- Force, M. V., Deering, L., Hubbe, J., Andersen, M., Hagemann, B., Cooper-Hahn, M., & Peters, W. (2006). Effective Strategies to Increase Reporting of Medication Errors in Hospitals. *Journal of Nursing Administration, 36*(1), 34-41.
- Frankel, A. S., Leonard, M. W., & Denham, C. R. (2006). Fair and Just Culture, Team Behavior, and Leadership Engagement: The tools to Achieve High Reliability. *Health Services Research, 41*(4, Part 2), 1690-1709. doi: 10.1111/j.1475-6773.2006.00572.x.
- Frankel, A. S., Leonard, M. W., & Denham, C. R. (2006). Fair and Just Culture, Team Behavior, and Leadership Engagement: The Tools to Achieve High Reliability. *Health Services Research, 41*(4), 1690-1709.
- Gellatly, I. R., & Withey, M. J. (2012). Organisational trust, affective commitment and bureaucratic control. *Journal of Trust Research, 2*(1), 31-52.
- Giffin, K. (1967). The contribution of studies of source credibility to a theory of interpersonal trust in the communication department. *Psychological Bulletin, 68*, 104-120.
- Gilbert, J. A., & Tang, L. P. T. (1998). An examination or organizational trust antecedents. *Public Personnel Management, 27*(3), 321-325.
- Gilson, L. (2006). Trust in health care: theoretical perspectives and research needs. *Journal of Health Organization and Management, 20*(5), 359-375.

- Ginsberg, L., Norton, P. G., Casebeer, A., & Lewis, S. (2005). An educational intervention to enhance nurse leaders' perceptions of patient safety culture. *Health Services Research, 40*, 997-1020.
- Goldberg, L. R. (1999a). A broad-bandwidth, public-domain, personality inventory measuring the lower-level facets of several Five-Factor models. *Personality psychology in Europe, 7*, 7-28.
- Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, m. C., Cloninger, R., & Gough, H. G. (2006). The international personality item pool and the future of public-domain personality measures. *Journal of Research in Personality, 40*(1), 84-96.
- Golembiewski, R. T. , & McConkie, M. L. (1975). *The centrality of interpersonal trust in group processes. In C. L. Cooper (Ed.), Theories of group processes.* New York: Wiley, 131-185.
- Goodman, P. S., & Leyden, D. P. (1991). Familiarity and group productivity. *Journal of Applied Psychology, 76*(4), 578-586.
- Goodman, P. S., Ravlin, E., & Schminke, M. (1987). Understanding groups in organizations. In L. Cummings & B. Staw (Eds.) *Research in organizational behavior*, (Vol. 9). Greenwich, CT: JAI.
- Greenberg, J. (1994). Using socially fair treatment to promote acceptance of a work site smoking ban. *Journal of Applied Psychology, 79*, 288-297.
- Greene, J. (1999). From whodunit to what happened. *Hospital Health Network, 73*(4), 50-54.

- Hall, M. A., Dugan, E., Zheng, B., & Mishra, A. (2001). Trust in physicians and medical institutions: What is it, can it be measured and does it matter? *Milbank Quarterly*, 79(4), 613-639.
- Heck, R. H., & Thomas, S. L. (2000). *An Introduction to Multilevel Modeling Techniques*. Mahwah, NJ: Lawrence Erlbaum.
- Henneman, E. A., Blank, F. S. J., Gawlinski, A., & Henneman, P. L. (2006). Strategies used by nurses to recover medical errors in an academic emergency department setting. *Applied Nursing Research*, 19, 70-77.
- Hitt, M.A. & Tyler, B.B. 1991. Strategic decision models: Integrating different perspectives. *Strategic Management Journal*, 12: 327-351.
- Hofmann, D. A. (1997). An overview of the logic and rationale of hierarchical linear models. *Journal of Management*, 23, 723-744.
- Hwang, P. & Burgers, W. P. (1997). Properties of Trust: An Analytical View. *Organizational Behavior and Human Decision Processes*, 69(1), 67-73.
- IBM Corporation (2012). *IBM SPSS Statistics 19*. Somers, NY: Author.
- Institute of Medicine. (1999). *To err is human: Building a safer health system*. Washington, DC: National Academy Press.
- Institute of Medicine. (2001). *Crossing the quality chasm: a new health system for the 21st Century*. Washington, DC: National Academy Press.
- Jeffre, D. B., Dunagan, W. C., Garbutt, J., Burroughs, T. E., Gallagher, T. H., Hill, P. R., et al. (2004). Using focus groups to understand physicians' and nurses' perspectives on error reporting in hospitals. *Joint Commission on Journal of Quality and Patient Safety*, 30(9), 471-479.

- Jehn, K., & Shah, P. (1997). Interpersonal relationships and task performance: An examination of mediating processes in friendship and acquaintance groups. *Journal of Personality and Social Psychology, 72*, 775-790.
- Jensen-Campbell, L. A. & Graziano, W. G. (2001). Agreeableness as a Moderator of Interpersonal Conflict. *Journal of Personality, 69*(2), 323-362.
- Kanfer, R. & Ackerman, P.L. (1989). Motivation and cognitive abilities: An integrative/aptitude-treatment interaction approach to skill acquisition. *Journal of Applied Psychology, 74*, 657-690.
- Kaplan, H. S., Battles, J. B., Van der Schaff, T. F., Shea, C. E., & Mercer, S. Q. (1998). Identification and classification of the causes of events in transfusion medicine. *Transfusion, 38*, 1071-1081.
- Karren, R. J., & Barringer, M. W. (2002). A Review and Analysis of the Policy-Capturing Methodology in Organizational Research: Guidelines for Research and Practice. *Organizational Research Methods, 3*, 337-361.
- Khatri, N., Brown, G. D., & Hicks, L. L. (2009). From a blame culture to a just culture in health care. *Health Care Management Review, 34*(4), 312-322.
- Kim, P. H., Diekmann, K. A., & Tenbrunsel, A. E. (2003). Flattery may get you somewhere: The strategic implications of providing positive vs. negative feedback about ability vs. ethicality in negotiation. *Organizational Behavior and Human Decision Processes, 90*(2), 225-243.
- Kim, P. H., Ferrin, D.L., Cooper, C.D., & Dirks, K. T. (2004). Removing the Shadow of Suspicion: The Effects of Apology Versus Denial for Repairing Competence- Versus Integrity-Based Trust Violations. *Journal of Applied Psychology, (89)*1, 104-118.

- Klass, B. S., & Wheeler, H. N. (1990). Managerial Decision Making About Employee Discipline: A Policy-Capturing Approach. *Personnel Psychology*, *43*(1), 117-134.
- Klendauer, R., & Deller, J. (2008). Organizational justice and managerial commitment in corporate mergers. *Journal of Managerial Psychology*, *24*(1), 29-45. doi 10.1108/02683940910922528
- Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (Eds.). (1999). *To err is human: Building a safer health system*. Washington, DC: National Academy Press.
- Konovsky, M. A., & Cropanzano, R. (1991). Perceived fairness of employee drug testing as a predictor of employee attitudes and job performance. *Journal of Applied Psychology*, *78*, 698-707.
- Korsgaard, M. A., & Roberson, L. (1995). Procedural justice in performance evaluation. *Journal of Management*, *21*, 657-699.
- Kramer, R. M. (1999). Trust and distrust in organizations: Emerging perspectives, enduring questions. *Annual Review of Psychology*, *50*, 569-598.
- Kramer, R. M., Tyler, T. R., eds. (1996). *Trust in Organizations: Frontiers of Theory and Research*. Sage Publications, Thousand Oaks, CA.
- Kreft, I. & DeLeeuw, J. (1998). *Introducing Multilevel Modeling*. Thousand Oaks, CA: Sage.
- Kreft, I., DeLeeuw, J., & Aiken, L. S. (1995). The effect of different forms of centering in hierarchical linear models. *Multivariate Behavioral Research*, *30*, 1-21.
- Larson, C., & LaFasto, F. (1989). *Teamwork*. Sage Publications, Newbury Park, CA.
- Laschinger, H. K., Finegan, J., Shamian, J., & Casier, S. (2000). Organizational trust and empowerment in restructured healthcare settings. Effects on staff nurse commitment. *Journal of Nursing Administration*, *30*(9), 413-425.

- Lawler, E. (1992) *The ultimate advantage: Creating the high-involvement organization*. SF: Jossey-Bass.
- Leape, L. L. (1994). Error in medicine. *Journal of the American Medical Association*, 272, 1851-1857.
- Lind, A., & Tyler, T. (1988). *The social psychology of procedural justice*. New York: Plenum Press.
- Luke, D. A. (2004). *Multi-level Modeling*. Thousand Oaks, CA: Sage.
- Madon, S., Jussim, L., & Eccles, J. (1997). In search of the powerful self-fulfilling prophecy. *Journal of Personality and Social Psychology*, 72, 791-809.
- Martijn, C., Spears, R., Van der Plight, J., & Jakobs, E. (1992). Negativity and positivity effects in person perception and inference: Ability versus morality. *European Journal of Social Psychology*, 22, 453-463.
- Martocchio, J.J., & Judge, T. A. (1994). A policy-capturing approach to individuals' decisions to be absent. *Organizational Behavior and Human Decision Processes*, 57, 358-386.
- Marx, D. (2011). Patient safety and the "Just Culture": A primer for health care executives. Medical Event Reporting System for Transfusion Medicine. Retrieved from http://www.mers-tm.org/support.Marx_Primer.pdf
- Masterson, S. S. (2001). A trickle-down model of organizational justice: relating employees' and customers' perceptions of and reactions to fairness. *Journal of Applied Psychology*, 86(4), 594-604.
- Masterson, S. S., Lewis, K., Goldman, B. M., & Taylor, M. S. (2000). Integrating justice and social exchange: the differing effects of fair procedures and treatment on work relationships. *Academy of Management Journal*, 43, 738-748.

- Mayer, R. C., & Davis, J. H. (1999). The effect of the performance appraisal system on trust for management: A field quasi-experiment. *Journal of Applied Psychology, 84*, 123-136.
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review, 20*, 709-734.
- Mayo, A.M., & Duncan, D. (2004). Nurse perceptions of medical errors: What we need to know for patient safety. *Journal of Nursing Care Quality, 19*, 209-217.
- McFarlin, D. B., & Sweeney, P. D. (1992). Distributive and procedural justice as predictors of satisfaction with personal and organizational outcomes. *Academy of Management Journal, 35*, 626-638.
- Milgrom, P., & Roberts, J. (1992). Economics, organization and management. Englewood Cliffs, NJ: Prentice Hall.
- Miller, R., Griffith, S., & Vogelsmeier, A. (2010). A Statewide Approach to a Just Culture for Patient Safety: The Missouri Story. *Journal of Nursing Regulation, 1*(1), 52-57.
- Milliken, F. J., Morrison, E. W., & Hewlin, P. F. (2003). An exploratory study of employee silence: Issues that employees don't communicate upward and why. *Journal of Management Studies, 40*(6), 1453-1476.
- Mishra, J., & Morrissey, M. A. (1990). Trust in employee/employer relationships: A survey of West Michigan managers. *Public Personnel Management, 19*(4), 443-461.
- Moorman, R. H. (1991). The relationship between organizational justice and organizational citizenship behaviors: do fairness perceptions influence employee citizenship? *Journal of Applied Psychology, 76*, 845-855.

- Mumford, T. (2012). Whom to Believe: Recruiting Information Source Credibility and Organizational Attractiveness. *Business and Management Review, 1*(4), 63-80. doi: 10.5430/bmr.v1n4p63
- Nembhard, I. M., & Edmondson, A.C. (2006). Making it safe: The effects of leader inclusiveness and professional status on psychological safety and improvement efforts in health care teams. *Journal of Organizational Behavior, 27*, 941-966.
- Nieva, V. F., & Sorra, J. (2003). Safety culture assessment: a tool for improving patient safety in healthcare organizations. *Quality Safety Health Care, 12*(2), 17-23.
- Oldham, G. R. (1975). The impact of supervisory characteristics on goal acceptance. *Academy of Management Journal, 18*(3), 461-475.
- Parker, D. F., & Decotiis, T. A. (1983). Organizational determinants of job stress. *Organizational Behavior and Human Performance, 32*(2), 160-177.
- Podsakoff, P. M., MacKenzie, S. B., & Bommer, W. H. (1996). Transformational leadership behaviors and substitutes for leadership as determinants of employee satisfaction, commitment, trust, and organizational citizenship behaviors. *Journal of Management, 22*(2), 259-298.
- Pronovost, P. J., Weast, B., Holzmueller, C. G., Rosenstein, B. J., Kidwell, R. P., Haller, K. B., et al. (2003). Evaluation of the culture of safety Survey of clinicians and managers in an academic medical center. *Quality and Safety in Health Care, 12*, 405-410.
- Psychology, 76*, 578-586.
- Ramanujam, R., & Rousseau, D. M. (2006). The challenges are organizational not just clinical. *Journal of Organizational Behavior, 27*, 811-827.

- Raudenbush, S., Bryk, T., & Congdon, R. (2000). *HLM 6 Hierarchical Linear and Nonlinear Modeling*. Skokie, IL: Scientific Software International, Inc.
- Reason, J. (1990). *Human Error*. Cambridge University Press, New York: NY.
- Reason, J. (1997). *Managing the risks of organizational accidents*. Aldershot: Ashgate.
- Reeder, G. D., & Brewer, M. B. (1979). A schematic model of dispositional attribution in interpersonal perception. *Psychological Review*, 86(1), 61-79.
- Reeder, G. D., Hesson-McInnis, M., Krohse, J. O., & Scialabba, E. A. (2001). Inferences about effort and ability. *Personality and Social Psychology Bulletin*, 27(9), 1225-1235.
- Rich, G. A. (1997). The sales manager as a Role model: Effects on trust, job satisfaction, and performance of sales people. *Journal of the Academy of Marketing Science*, 25(4), 319-328.
- Roberts, K. (1989). Research in nearly failure-free high reliability organizations: having the bubble. *IEEE Transactions on Engineering Management*, 36, 132-139
- Rynes, S. A. & Barber, A. E. (1990). Applicant attraction strategies: An organizational perspective. *Academy of Management Review*, 15, 286-310.
- Rynes, S., & Lawler, J. (1983). A policy-capturing investigation of the role of expectancies in decisions to pursue job alternatives. *Journal of Applied Psychology*, 68, 620-631.
- Sanchez, J. I., & Levine, E. L. (1989). Determining important tasks within jobs: A policy-capturing approach. *Journal of Applied Psychology*, 74(2), 336-342. doi: 10.1037/0021-9010.74.2.336
- Sapienza, H. J., & Korsgaard, M. A. (1996). Managing investor relations: The impact of procedural justice in establishing and sustaining investor support. *Academy of Management Journal*, 39, 544-574.

- Schindler, P. L., & Thomas, C. C. (1993). The structure of interpersonal trust in the workplace. *Psychological Reports, 73*, 563-573.
- Schwartz, G. S., Kane, T. R., Joseph, J. M., & Tedeschi, J. T. (1978). The effects of post-transgression remorse on perceived aggression, attributions of intent, and level of punishment. *British Journal of Social and Clinical Psychology, 17*, 293-297.
- Scott, D. (1980). The causal relationship between trust and the assessed value of management by objectives. *Journal of Management, 6*, 157-175.
- Smith, J., & Barclay, D. (1997). The effects of organizational differences and trust on the effectiveness of selling partner relationships. *Journal of Marketing, 61*, 3-21.
- Sorra, J., & Nieva, V. (2004). Hospital survey on patient safety culture (AHRQ Publication No. 04-0041). Rockville, Maryland: Agency for Healthcare Research and Quality.
- Stevenson, W. B., & Gilly, M. C. (1991). Information processing and problem solving: The migration of problems through formal positions and networks of ties. *Academy of Management Journal, 34*, 918-928.
- Tamuz, M. (1994). Developing organizational safety information systems for monitoring potential dangers. In: Apostolokis, G. E., & Wu, J. S. (1994). *Proceedings of physical sciences annual meeting II* (Eds). San Diego, CA: Galen Press.
- Tan, H. H., & Lim, A. K. H. (2009). Trust in Coworkers and Trust in Organizations. *Journal of Psychology, 143*(1), 45-66.
- Tan, H. H., & Tan, C. S. F. (2000). Towards the differentiation of trust in supervisor and trust in organization. *Genetic, Social and General Psychology Monographs, 126*, 241-260.
- Tangirala, S., & Ramanujam, R. (2008). Employee silence on critical work issues: The cross level effects of procedural justice climate. *Personnel Psychology, 61*(1), 37-68.

- Taylor, J. A., Brownstein, D., Christakis, D. A., Blackburn, S., Strandjord, T. P., Klein, E. J., & Shafii, J. (2004). Use of Incident Reports by Physicians and Nurses to Document Medical Errors in Pediatric Patients. *Pediatrics, 114*(3), 729-735.
- Taylor, R. G. (1989). The role of trust in labor-management relations. *Organization Development Journal, 7*, 85-89.
- Teng, C. I., Chang, S. S. & Hsu, K. H. (2009). Emotional stability of nurses: impact on patient safety. *Journal of Advanced Nursing, 65*(10), 2088-2096.
- Tyler, T. R. (1990). Justice, self –interest, and the legitimacy of legal and political authority. *Beyond Self-Interest*, University of Chicago Press, Chicago, IL, 171-179.
- Tyler, T. R., & Smith, H.J. (1998). Social justice and social movements. *Handbook of Social Psychology, 4th* ed., Vol. 2, McGraw-Hill, New York: NY, 595-629.
- Van der Schaff, T. W. (1998). Hospital-wide versus nationwide event reporting: an empirical framework based on single-department studies in hospitals. In: *Proceedings of enhancing patient safety and reducing errors in health care*. Rancho Mirage, CA: Annenberg Center, 190-192.
- Weiner, B. J., Hobgood, C, & Lewis, M. A. (2008). The meaning of justice in safety incident reporting. *Social Science and Medicine, 66*, 403-413.
- Whitener, E. M., Brodt, S. E., Korsgaard, M. A., & Werner, J. M. (1998). Managers as initiators of trust: An exchange relationship framework for understanding managerial trustworthy behavior. *Academy of Management Review, 23*(3), 513-530.
- Williams, L. J., & Anderson, S. E. (1991). Job Satisfaction and Organizational Commitment as Predictors of Organizational Citizenship and In-Role Behaviors. *Journal of Management, 17*(3), 601-617. doi: 10.1177/014920639101700305

Zedeck, S. (1977). An information processing model and approach to the study of motivation.
Organizational Behavior and Human Performance, 18, 47-77.

Appendix A – Interview Questions

1. If you tried to go to your manager and identified/reported an error, close call or hazard (or a potential error, close call or hazard), how specifically would you like them to respond to you? Or what specific actions/words would your manager use to indicate that they were responding in a just and trusting way?
2. If you went to your manager and identified/reported an error, close call or hazard (or a potential error, close call or hazard), expecting that they would treat you in a just and trusting way and they ended up not doing so, what would this look like, how would you feel and what would you do/want to do as a result?
3. If there could be a recommended ‘recovery process’ in place that would help you reconcile how you felt you were initially treated by your manager and how you would want to feel (that would align with a just and trusting culture), what would that recovery process be like?
4. What supports/tools do you feel would need to be in place for this recovery process to work effectively for both you and your manager?
5. What do you feel are the responsibilities of employees in helping to encourage a just and trusting culture?
6. What do you feel are the responsibilities of leaders/supervisors in helping to encourage a just and trusting culture?

Appendix B: Common Responses from the Pilot Study

Question 1:

- Let employee know the steps that will be taken to handle the issue at hand
- Thank the employee for coming forward with their concern
- The manager should evaluate all actions that were taken during the situation and look at what happened within the context of the situation
- Manager should be supportive, compassionate, empathetic and considerate
- Acknowledgment of the fact that it is difficult to come forth with concerns

Question 2:

- Blaming, shaming and non-supportive response
- Manager would respond with discipline and punitive action
- Employee would feel guilty, discouraged, frustrated and hopeless
- Employee would want to quit
- Employee would go elsewhere for help, (e.g. Human Resources)

Question 3:

- Apologies need to be voiced
- A system where individuals know and understand what exactly a just and trusting culture approach is and whereby communication is encouraged
- A process in which the relationship between the manager and employee would be withheld and not damaged
- A recovery process that enabled managers to have the proper knowledge and tools available to manage in a just and trusting way
- Training and employee engagement

Question 4:

- Everyone needs to have a similar frame work in mind when it comes to addressing a just and trusting culture
- Ongoing education
- Consistent messages in organization as a whole
- Advocacy
- Communication

Question 5:

- Employees are responsible to avoid using and taking advantage of a just and trusting culture – it is not a blame free culture
- Employees need to learn the skills required for a just and trusting culture to exist
- Employees needs to be accountable for their actions to ensure systems are safe
- Realize that it is not a manager vs. employee scenario; everyone must work together
- Must report all errors

Question 6:

- Make sure they are active in this process
- Clearly communicate with other member of the organization exactly what a just and trusting culture entails
- Need to be accountable for their own actions
- Must lead by example and stand beside what they say
- Recognize that we are all human and all make mistakes

Appendix C – Manipulated Cues and Levels

Cue 1 (Context): Policy Awareness

Level 0: No Policy: The nurse is unaware of any formal Reporting Policy for medical errors at the hospital.

Level 1: Policy: The nurse is aware of the formal Reporting Policy for medical errors at the hospital.

Cue 2 (Interpersonal): Policy Adherence Violation Type (Ability vs. Integrity)

Level 0: Integrity-based: Despite knowing the protocol of the Reporting Policy, the patient care manager does not follow the correct process.

Level 1: Ability-based: The patient care manager is new on the job and so is unaware of the protocol set out in the Reporting Policy.

Cue 3 (Interpersonal): Explanation

Level 0: No Explanation: The patient care manager provides no explanation regarding how or when the error will be dealt with.

Level 1: Explanation: The patient care manager explains to the nurse in detail the steps that will be taken to deal with the error.

Cue 4 (Interpersonal): Blame (Manager)

Level 0: Blame (Manager): The patient care manager interviews the nurse to determine what was occurring at the time of the error and indicates in the report that the nurse should be held accountable for the error.

Level 1: Non-Blame (Manager): The patient care manager interviews all staff on shift at the time to obtain a full picture of what was occurring at the time of the error and records this information in the report.

Cue 5 (Context): Blame (Organization)

Level 0: Blame (Organization): The Executive Leadership Team indicates that if any legal action on the part of the patient arises, the individuals involved will be held accountable.

Level 1: Non-Blame (Organization): The Executive Leadership Team reviews all the information, thanking everyone involved for bringing this incident forward for attention and system review.

Appendix D: Two Example Scenarios
(Italicized information is the SAME across all scenarios):

A patient admitted with status asthmaticus on 08/13 at 2 am is prescribed albuterol (ventolin) nebulizers every 4 hours. The nurse omits the 6 am dose on 08/13 as the patient is asleep. The nurse reports this at shift change to the patient care manager.

1. Policy awareness, ability-based violation, explanation, non-blame (supervisor), non-blame (organization)

The nurse is aware of the formal Reporting Policy for medical errors at the hospital. The patient care manager is new on the job and so is unaware of the protocol set out in the Reporting Policy. The patient care manager explains to the nurse in detail the steps that will be taken to deal with the error. The patient care manager interviews all staff on shift at the time to obtain a full picture of what was occurring at the time of the error and records this information in the report. *The nurse is brought before the Executive Team at the hospital to discuss the error.* The Executive Leadership Team reviews all the information, thanking everyone involved for bringing this incident forward for attention and system review.

2. Policy unawareness, integrity-based violation, no explanation, blame (supervisor), blame (organization)

The nurse is unaware of any formal Reporting Policy for medical errors at the hospital. Despite knowing the protocol of the Reporting Policy, the patient care manager does not follow the correct process. The patient care manager provides no explanation regarding how or when the error will be dealt with. The patient care manager interviews the nurse to determine what was occurring at the time of the error and indicates in the report that the nurse should be held accountable for the error. *The nurse is brought before the Executive Team at the hospital to discuss the error.* The

Executive Leadership Team indicates that if any legal action on the part of the patient arises, the individuals involved will be held accountable.

Questions Following Each Scenario:

On a scale of 0 – 10: How likely would this scenario help create a just and trusting culture* in reporting errors between nurse and manager?

On a scale of 0 – 10: How likely would this scenario help create a just and trusting culture* within organization as a whole?

**Just and Trusting Culture: an environment supportive of open dialogue to facilitate continual improvement and safer practices for patients, staff and physicians; when errors or adverse events occur, those involved are supported, and treated with fairness, dignity and respect. Staff, physicians and volunteers are expected to be appropriately accountable for their actions and open and honest about communicating the event. The organization also holds itself accountable for the system it designs.*

Appendix E: Demographic Information Form

Demographic Information

1. Age group (please check one)

20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+

2. Gender (please check one)

Male	Female

3. Approximately how many years have you been employed with Alberta Health Services?

4. Your PRIMARY ROLE in delivering care and/or service (please check one, or specify)

Healthcare provider (physician or non-physician)	Frontline Management (e.g. patient care manager, unit manager)	Operations Leadership (e.g. Director, Executive Director, VP)	AHS Operations Staff (e.g. consultant, Project Manager, Administration Assistant)	Other, please specify:

5. Which BEST describes your job: (please check one)

Front-line service provider	Manager/Administrative

Appendix F: Individual Differences Scale (Trust and Anxiety)

Please check the extent to which you agree that the following descriptors apply to you:

Descriptor	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
Trust others (Trust)					
Worry about things (Anxiety)					
Believe that others have good intentions (Trust)					
Am afraid of many things (Anxiety)					
Trust what people say (Trust)					
Fear for the worst (Anxiety)					
Believe that people are basically moral (Trust)					
Get stressed out easily (Anxiety)					
Believe in human goodness (Trust)					
Get caught up in my problems (Anxiety)					
Think that all will be well (Trust)					
Am not easily bothered by things (Anxiety) (R)					
Distrust people (Trust) (R)					
Am relaxed most of the time (Anxiety) (R)					
Suspect hidden motives in others (Trust) (R)					
Am not easily disturbed by events (Anxiety) (R)					
Am wary of others (Trust) (R)					
Don't worry about things that have already happened (Anxiety) (R)					
Believe that people are essentially evil (Trust) (R)					
Adapt easily to new situations (Anxiety) (R)					