Linking Communication Competency To Health Care Professionals’ Attitudes and Behaviors: Examining Direct Effects and the Moderating Role of Organizational Culture and Role Identity

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Linking Communication Competency To Health Care Professionals’ Attitudes and Behaviors: Examining Direct Effects and the Moderating Role of Organizational Culture and Role Identity

by

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A Master’s Thesis Submitted to the Faculty of Montclair State University

In Partial Fulfillment of the Requirements For the Degree of Master of Arts

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Abstract

Communication plays an integral role in the functioning of health care organizations. More specifically, health care professionals' communication competency may significantly influence work-related outcomes. This study examines the impact of competency on health care professionals' job satisfaction and tendency to report on-the-job errors. In addition, this study examines whether more collaborative organizational cultures, as well as the extent health care professionals identify with their organizational role, moderates the relationship between communication competency and work-related outcomes.

A cross-sectional online survey addressing these concepts was administered to 145 health care professionals. Results showed that competency was a significant positive predictor of job satisfaction, even after controlling for the culture of the facility and one's level of professional role identity. In addition, results also showed that higher levels of a collaborative organizational culture perceived by health care professionals predicted increased job satisfaction and a greater likelihood to report on-the-job errors. Role identity was found to moderate the relationship between communication competency and job satisfaction, such that only at high levels of role identity did competency significantly predict greater job satisfaction. A similar relationship emerged when examining the link between competency and error reporting, although this outcome only approached conventional levels of significance. Finally, while not a central focus of this study, a significant relationship was found between the years of experience as a health care professional and the reporting of error. The greater the number of years of health care experience was negatively associated with error reporting. This unexpected finding is
concerning because it suggests that the longer a health care worker has been in her profession, the less likely she is to report on-the-job errors.

Overall, the findings from this study underscore the importance of communication skills within the medical environment. This study provides an understanding of how the relationship between communication competency and other organizational factors such as collaborative culture and role identity may significantly affect health care professionals' attitudes and behaviors. By continuing to explore such relationships, researchers and practitioners may gain knowledge about the factors that contribute to a more positive work environment for health care professionals, as well as to a safer and more effective health care organization as a whole. These discoveries can hopefully be used to improve the organizational structure within health care institutions and thus, positively influence the experiences of employees within hospitals and other health care facilities as well as those being treated by these individuals.
LINKING COMMUNICATION COMPETENCY TO HEALTH CARE PROFESSIONALS’ ATTITUDES AND BEHAVIORS: EXAMINING DIRECT EFFECTS AND THE MODERATING ROLE OF ORGANIZATIONAL CULTURE AND ROLE IDENTITY

A THESIS

Submitted in partial fulfillment of the requirements
For the degree of Master of Arts

by

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Montclair State University

Montclair, NJ

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Linking Communication Competency To Health Care Professionals’ Attitudes and Behaviors: Examining Direct Effects and the Moderating Role of Organizational Culture and Role Identity

Introduction

Communication is an integral part of how an organization functions. Members use communication interactions to determine how to appropriately act within an organization. More importantly, one’s level of communication competency within an organizational context influences the overall effectiveness of the organization. Overall, prior research indicates that communication competency is a vital aspect of organizational culture and effectiveness (Likert, 1967; Grunig, 1992; Kwantes & Boglarsky, 2007). An individual’s ability to adapt his/her communication style to the professional environment can significantly affect her success within that space.

Communication competency is particularly important within health care settings. Health care professionals’ ability to communicate effectively interpersonally, within a group, and in public settings affects many different factors within their professional environments. Unfortunately, health care professionals often lack these skills, leading to negative consequences both for patients and other employees (Schulz, 2006). Thus, the first goal of this study is to examine the relationship between competence and two important outcomes – job satisfaction and reporting of errors. The level of job satisfaction that exists in health care settings, as well as the willingness of health care professionals to report errors, influences the effectiveness of the health care organization as a whole. It is important to understand the connection between these two factors and communication competency in order to improve the hospital environment.
Importantly, competency may not always be associated with organizational effectiveness or job performance. Rather, environmental factors may limit or regulate the impact of competency on individual's success within an organization. Overall, there are outside factors that may regulate the role of communication competence in affecting certain organizational outcomes. One of these factors is role identity; role identity is related to how a person defines himself within a specific context and in relation to others in that context. Giddens (1984) suggested that a "duality" exists in which "agents draw on rules and resources to reproduce a pattern of social relations" (Callero, Howard, & Pillivan, 1987, p. 249). The interactions that take place within a specific context help individuals form their role identities, and these identities are contributed to by others involved in the interaction (Callero, Howard, & Pillivan, 1987; Giddens, 1991). As a role becomes internalized, it has the power to influence behavior (Grube et. al., 2010). Role identity is significant within an organizational context because the identities that health care professionals assume affect their communication competency within that setting.

The second goal of this study is to examine whether role identity has the potential to strengthen or weaken the impact of communication competency on both job satisfaction and reporting of errors among health care professionals.

A second factor that may moderate the impact of communication competency on job satisfaction and reporting of errors is organizational culture. While we often think about communication as verbal actions that take place between people or groups, communication is a much more complex function that is influenced by the context in which it takes place. Specifically, organizational culture directly impacts the communication channels that exist within that organization. Consequently, then, to infer
that because communication is such an influential aspect of our existence, it is vital to understand the communication structures that exist within organizations. Therefore, the final goal of this study is to examine how organizational culture has the potential to strengthen or weaken the impact of communication competency on both job satisfaction and reporting of errors among health care professionals.

**Communication Competency**

Communication competency is a field of research that has interested academics from a variety of disciplines. Many researchers have strived to explain what communication competency is, if it is an inherent trait, and if it can be developed (McCroskey, 1982). Communication competency is not an umbrella term that describes an individual’s ability to effectively communicate in general. Rather, an individual’s communication competency is contextually specific (Powell & Johnson, 1982). In other words, a person can be communicatively competent in one situation and not in another, and this has important implications for organizational functionality. The following section provides the theoretical background of communication competence.

**Modern Definitions**

Humans are inherently communicative beings, and our realities are shaped through our interactions with each other and with the social environments in which we exist. Four areas of research have served as guides for the exploration of communication competency: socio-linguistics, goals, skills, and social perspective taking (Powell & Johnson, 1982). Socio-linguists have suggested that the social situation is related to language development, while researchers interested in goals connect the social situation to goal attainment. The ability of an individual to differentiate between social cues is
vital to the social perspective taking orientation, and skills research focuses on an
individuals’ ability to use specific social skills in the appropriate context (Powell &
Johnson, 1982). In the past, much of the research compiled has focused on
communication competency as a trait that is present across all settings. Wiemann (1980)
defined communication competence as “the ability of an interactant to choose among
available communicative behaviors in order that he (she) may successfully accomplish
his (her) own interpersonal goals during an encounter while maintaining the face of his
(her) fellow interactants within the constraints of the situation” (p. 198).

The plethora of variables that influence communication competency create an
equal number of challenges. Socio-linguists suggest that cultural differences complicate
communication on a most basic level (Argyle & Little, 1972). Because societal
structures vary, the manner in which speech acts take place, and the meanings that they
convey, are dependent on the culture from which they were produced. Speech acts (e.g.
refusing, complimenting, complaining, thanking) occur using different linguistic tools
(e.g. hedging). Thus, it is possible for there to exist multiple meanings for similar speech
acts. This is a communicative challenge because in order to avoid misinterpretation,
cultural context must be taken into consideration, but this is not always available (Gass,
2006).

In addition, Powell & Johnson (1982) suggested that Wiemann’s (1980) definition
of communication is too simplistic; rather, Powell & Johnson proposed that the
communication situation, or context, is as influential a factor in an individual’s
communication competency as is the individual’s ability to communicate in the first
place. Socio-linguists also consider the social situation to be an influential factor in
HEALTH CARE COMMUNICATION COMPETENCY

language development. As people experience different social environments, they learn what language is appropriate for each context (Argyle & Little, 1972; Wiemann, 1980). Additionally, the ability to differentiate between social cues is central to social perspective taking. Individuals enter into communication situations with specific goals, and the skills perspective suggests that an individual’s success in a communication interaction is dependent on that individual’s ability to utilize certain communication skills within a specific context (Hale & Delia, 1976; Hymes, 1971; Powell & Johnson, 1982; Weinstein, 1969). While these initial explorations have contributed to a better understanding of communication competency, a more comprehensive definition is needed in order to fully understand how communication competency functions in different environments (McCroskey, 1982; Spitzberg, 1983).

**Communication Competence, Skills, and Performance**

Much of communication competency theory tends to focus on the *manner* in which an individual performs within a communication interaction. Wiemann’s (1980) definition, too, is distinctly behaviorally focused, and suggests that in order to be considered competent, an individual must perform competently. McCroskey (1982) succinctly noted the issue with this narrow definition: it equates competence with effectiveness and performance (p. 3). First, it has been demonstrated countless times that competence and performance are mutually exclusive. Individuals can be competent communicators but terrible public speakers. Conversely, an individual can have excellent oratory skills but have no understanding of the content of his/her performance (McCroskey, 1982; Spitzberg, 1983). The assumption that communication competence equals communication performance is dangerous because an individual’s ability to
perform appropriately in a given context does not mean they understand why it is necessary to act in that manner.

In addition, equating communication competence with communication effectiveness suggests an if-then relationship: if an individual’s goals are accomplished in a communication interaction, then they are competent communicators. This, however, is very often not the case, as individuals’ objectives may be in competition causing one (or both) to not achieve his/her goals in the interaction. This does not mean that the interactants are incompetent communicators; it merely means that the context made it difficult for all goals to be achieved simultaneously (McCroskey, 1982).

Scholars have suggested that it is possible for people to be competent in one situation and incompetent in another (Larson, Backlund, Remond, & Barbour, 1978; McCroskey, 1982; Powell & Johnson, 1982). Larson, Backlund, Remond, & Barbour (1978) defined modern communication competency as “the ability of an individual to demonstrate the appropriate communicative behavior in a given situation” (p. 16) however no communication trait ensures communicative effectiveness in every situation (Powell & Johnson, 1982). Most communication interactions have prescribed expectations as to how people should behave, and that individuals have to play varying roles, which in turn affects his/her performance in any given situation. In addition, even in the same situation, a person’s performance will depend on the behavior of the other people involved (Argyle & Little, 1972). In order to fully understand how communication competency affects other outcomes specifically related to health, the context, the interactions between those involved, as well as each individual’s levels of competence must be taken into consideration.
Communication Competency in Health Care Settings

Although doctor-patient communication competency is a topic that has received much attention in the past decade, only a small amount of research has addressed the communication interactions that take place between health care professionals (Grunig, 1966; Vanderford, Stein, Sheeler, & Skochelak, 2001; Wanzer, Wojtaszczyk, & Kelly, 2009; Wright, Banas, Bessarabova & Bernard, 2010). Spitzberg (Hardy, 1988) said that “communication competence is the ability to interact well with others. The term ‘well’ refers to a positively valenced judgment of quality . . . Competent communication is interaction that is perceived as effective in fulfilling certain rewarding objectives in a way that is also appropriate to the context in which the interaction occurs” (p. 68). This definition of communication competency is most comprehensive because it places equal importance on an individual’s personal communication skills and the context in which they interact. Based on Spitzberg’s description of communication competency, it is important to consider the health care context when examining health care professionals’ communication competency. It is this definition that is used as the foundation for the exploration of communication competency in this study.

Health care professionals’ communication competency. Several researchers have examined health care professionals within the context of their organization, focusing on communication among each other, rather than with patients and the public. Their results suggest that communication competency is a valuable skill to possess, specifically in the health care context (Kim & Grunig, 2011; Morse & Piland, 1981; Sugimoto, 2008). Morse & Piland (1981) examined the communication channels that exist between three different health relationships: nurse-patient, nurse-nurse, and nurse-doctor. Specifically,
they analyzed the importance of nine communication skills, (advising, persuading, instructing, listening, routine information exchange, public speaking, small group communication, giving orders, and management of conflict), within each of these three relationships.

Across all three relationships, statistically significant differences were found regarding the importance of persuading, advising, routine information exchange, public speaking, instructing, listening, small group communication, giving orders, and management of conflict. Results suggested that nurse-nurse and nurse-patient relationships were much more open than nurse-doctor relationships. This, in turn implies that nurse-doctor relationships are viewed more as a subordinate-superior dynamic, where areas such as advising and instructing were of least importance. Furthermore, results based on the mean showed that the areas of listening, instruction, management of conflict, routine information exchange, and small group communication were considered the most important in nurse-nurse and nurse-patient relationships (Morse & Piland, 1981).

The perceptions that hospital employees have about different communication situations is also an important area to analyze. Sugimoto (2008) examined the relationship between health care professionals’ job category and their perceived communication difficulty with respect to several factors (partner, rank, and situation) as well as how the length of work experience affected these professionals’ perceived communication difficulty. The study included clinical and non-clinical employees from different departments within the hospital setting such as doctors, nurses, clerical staff, allied professionals (e.g. pharmacists, lab technicians, or physical therapists) and general
support workers (e.g., cafeteria workers). In general, for all categories of hospital employees, patients, physicians, and superiors were considered to be difficult communication partners. The situations rated most difficult by all categories were dealing with complaints from patients’ families, as well as disagreement with superiors. In general, employees with less work experience reported higher communication difficulty. Conversely, more experienced nurses and general support workers found peer-to-peer communication to be most challenging. These studies are enlightening for several reasons. First, they highlight that communication competency is a complex entity, with many different subsets that affect communication. Second, they suggest that the communication interactions between different health care providers affect communication competencies.

As shown by the aforementioned studies, differing personal narratives, goal outcomes for the interaction, and communication styles often cause conflict and negatively affect the satisfaction of both health care professionals and patients (Noland, 2006; Schultz, 2006; Wyatt, 1991; Vanderford, Stein, Sheeler, & Skochelak, 2001). The communication competencies of health care workers are extremely important to understand because they influence other aspects of professional life, such as job effectiveness and satisfaction (Morse & Piland, 1981; Sugimoto, 2008). However, communication competency in health care settings is an area that has not received adequate attention. Health care professionals’ perception of their ability to communicate effectively has many implications, both on job satisfaction and reporting of errors (Argyle & Little, 1972; Powell & Johnson, 1982).
Health care professionals and job satisfaction. While researchers have concerned themselves with the factors that influence patient satisfaction levels in medical interactions, health care professionals’ job satisfaction is also important to consider. Job satisfaction is viewed as a multi-dimensional construct (Noland, 2006; Meagher-Stewart et. al., 2010; Wanzer, Wojtaszczyk, & Kelly, 2009; Vanderford, Stein, Sheeler, & Skochelak, 2001). Doctors, nurses, and other health care professionals find value in different communicative actions, and these increase their satisfaction levels in diverse ways.

The medical interaction is complex and involves multiple parties with different communicative goals, and thus the perceived success of the interaction will differ for each party involved (Noland, 2006). Many studies have demonstrated that patients place a higher value on the relationship that is formed between the doctor and patient, and that this relationship directly affects patients’ satisfaction levels (Noland, 2006; Schulz, 2006; Wyatt, 1991; Vanderford et. al., 2001). However, the communication goals of physicians are oftentimes different; information dissemination and adherence to medical regimes are considered more important to doctors and medical residents (Noland, 2006; Vanderford et. al. 2001). Additionally, leadership, job security, flexibility, and time (both to complete tasks and to build relationships) are extremely important to public health nurses (PHNs). For example, supportive governmental policy that advocated for PHNs and provided funding helped nurses feel secure; leadership on a managerial level allowed PHNs to feel like they had guidance and resources on which they could rely (Meagher-Stewart, Underwood, MacDonald, Schoenfeld, Blythe, Knibbs, Munroe, Lavoie-Tremblay, Ehrlich, Ganann & Crea, 2010). While it is possible for these goals to be
accomplished simultaneously, this does not always occur, and this affects health professionals’ job satisfaction levels.

While there is a lack of research that directly links communication competency to job satisfaction, some researchers have studied its effects on other aspects of the health care profession. Wright, Banas, Bessarabova & Bernard (2010) examined the effect of health care professional’s perceived communication competence on stress levels and subsequent job burnout (p. 376). They suggested that there is a connection between these professional’s communication competencies, their social support systems, and job burnout. Results showed that greater communication competencies increased social support satisfaction and decreased perceived stress, more social support satisfaction decreased perceived stress, and increases in perceived stress resulted in perceived job burnout. This direct link between communication competency and stress reduction is interesting, as is the relationship between stress reduction and job burnout. These connections between variables suggest that there could be a similar relationship between communication competency and job satisfaction.

Health care professionals and reporting of error. Error reporting in the health care industry is an issue that has far-reaching effects. Not only is the health of patients put at risk when errors are not reported, but the financial cost of these errors for the hospital and government is immense (Barach & Small, 2000). An alarming amount of errors that take place in the health care industry are not reported, even when medical staff are aware of them. Barach & Small (2000) reported that “underreporting of adverse events is estimated to range from 50%–96% annually” (p. 759).
There are many factors that influence whether, and how frequently, health care professionals report the errors they see. West (1990) developed the Team Climate Inventory (TCI), which was comprised of 5 climate scales including participative safety, support of innovation, vision, task orientation, and social desirability. Specifically in relation to the reporting of errors within a health care environment, the participative safety scale is important to consider. Participative safety is an important aspect of group innovation, and is defined as "how participative the team is in its decision-making procedures and how psychologically safe team members feel it is to propose new and improved ways of doing things," (King & Anderson, 1995, p. 86). In climates where participants feel supported they are more likely to propose radical ideas and take more risks (in relation to this study, report errors). King & Anderson (1995) used West's TCI to analyze two teams within a hospital setting. Team A was described as highly participative while Team B was more authoritative, with minimal lateral communication and a highly competitive culture. Team A profiled high on the participative safety scale, while Team B scored low. King and Anderson thus suggested that an organizational culture that is more collaborative will create a climate where participants are willing to take more risks.

The reporting of error, because of the potential repercussions (both social and otherwise), can be classified as a risky behavior. Grube, Piliavin, & Turner (2010) analyzed nurses' error reporting tendencies and considered the influences upon their decisions to report or not. They wanted to answer what influencing factors were connected with nurses' toleration of unsafe practices, what motivated nurses to report unsafe practices, and how the observation of unsafe practices influenced the nurses'
commitment to the organization and the profession. Grube et. al. hypothesized that the higher the frequency of errors that were observed, the higher the likelihood would be that nurses would report these errors. Results supported this first hypothesis, showing that the probability of reporting errors in practice increased as the number of observed unsafe practices increased. Supervisor support of reporting was also influential in nurses' decisions to report; the more this action was supported by superiors, the more likely nurses were to report. In addition, nurses with clearly defined roles were more likely to report unsafe practices.

A hesitancy to report errors is common in the health care industry. There are many factors that influence a health care professional's willingness to report (Barach & Small, 2000; Noland & Rickles, 2009). There is, however, little research that directly examines the link between communication competency and error reporting. Noland & Rickles (2009) studied pharmacists' error reporting and found that five main themes affect pharmacists' tendency to report medical errors: the pressure to be perfect, assuming and communicating responsibility for mistakes, feeling comfortable talking about mistakes, learning how processes can contribute to errors and their prevention, and inadequate and inconsistent training on how to handle medication errors. Noland and Rickles did examine both communication deficiencies and willingness to report errors however, the specific link between communication competency and reporting of errors was never explored. Noland and Rickles stated that pharmacists' reasoning behind not reporting errors is still unclear, positing that this motivation may be related to interpersonal relationships, the punitive nature of the pharmacy site, the pharmacists' fear of disappointing his or her supervisor, and/or the public shame of having been less than
perfect. However they did acknowledge that “the fact that many respondents said ‘it
depends [on] who I am working with’ [when reporting errors] gives us a sense that it may
be related to the interpersonal relationship the student [or pharmacist] has with his or her
preceptor” (p. 355).

Research Questions

Researchers have found that health care professional’s levels of job satisfaction
are affected by many different factors however the specific connection between job
satisfaction and communication competency has not been explored (Noland, 2006;
Schulz, 2006; Wyatt, 1991; Vanderford et. al., 2001). In addition, there has been little
exploration into the link between the reporting of error and communication competency
(Grube, Piliavin, & Turner, 2010; Noland & Rickels, 2009). The connections shown here
between group dynamics and communication competency, as well as the lack of research
connecting communication competency, job satisfaction, and error reporting lead to the
first two research questions.

RQ1a: Does health care professionals’ communication competency predict
job satisfaction?

RQ1b: Does health care professionals’ communication competency predict
error reporting?

Organizational Culture

Organizational culture affects role development and how the people in those roles
interact. Marinova (2005) stated that:

Different organizational cultures create different role expectations, which are
functional for the respective culture. For instance, the clan culture would create
the expectation that individuals should cooperate and collaborate on tasks; the bureaucracy culture, on the other hand, primes cognitions that strict rule observation of established procedures is anticipated in the organization; the market culture type suggests an achievement role to achieve maximum efficiency and finally the entrepreneurial culture type creates innovative role cognitions.” (p. 9)

With respect to situational communication theory, organizational culture creates a system of meaning within its own organizational context. It is because of this culture that people are able to create roles and understand how they are expected to act within these roles and in relation to other members of the organization. People are empowered through effective organizational structure; this team mentality encourages growth and development in all social areas, including communication. People are constantly acting within structures that their actions can influence and thus, it is empowering for people to feel that they can change their environment (Ionescu, 2009). The way that these relationships develop and the value that people create for themselves within their professional environment directly impact how they communicate, and whether they achieve their communicative goals.

Theoretical Background

The term culture is broad and can be interpreted in many different ways depending on its context. Organizational culture, specifically, deals with the communication structures that exist within each individual organization, and how these structures influence relationships and ultimately, the effectiveness of the organization. Organizational culture is directly related to risk management and security, and personal
and leadership effectiveness. It is defined as a system of basic perceptions that a particular group has internalized, which helps the organization deal with issues both internally and externally (Ionescu, 2009). Effective organizational cultures try to adjust their internal environments so that they are congruent with their external environments, thus creating stability and trust among community members.

Likert (1967) suggested that there are four different systems of organization that can exist within a working body: exploitative authoritative, benevolent authoritative, consultative, participative group. First, the exploitative authoritative culture is characterized by minimal communication interaction, downward communication channels, and feelings of suspicion and common information distortion. Second, the benevolent authoritative culture has limited lateral communication, and subordinates feel minimal responsibility for initiating upward communication and are more likely to “filter” the information that is passed on. Third, the consultative culture is much more communicatively open, permitting some innovation (if not decision making authority) at lower levels of management. Last, the participative culture is highly collaborative and there is an open flow of communication, both between individuals and groups. Members have vested interest in the success of the organization, and may openly question decisions made by upper management (Likert, 1967, p.17-18). Likert’s table of organizational performance characteristics of different management systems is useful in creating a visual representation of these organizational systems; it also serves as a foundation for analyzing how communication structures affect role identity and employee effectiveness in communication situations.
Likert’s (1967) table is also connected to Grunig’s (1992) theory of effective communication. Grunig (1992) suggested that “symmetrical communication takes place through dialogue, negotiation, listening, and conflict management, rather than through persuasion, manipulation, and the giving of orders” (p. 231), and two-way communication is what characterizes excellent organizations. Likert’s table suggests that authoritative organizational cultures have less communication interaction, communication flow is primarily downward, that higher levels of management are not trusted, and that collaboration is not encouraged. Conversely, participative organizational cultures have lateral and vertical communication, and flows that are initiated by all members of the organization. Furthermore, when members disagree with instructions, authority is questioned candidly. A group responsibility is felt for the success of the organization, and collaboration and initiative are widespread.

**Health Care Organizational Culture**

As discussed in the previous sections, theories about organizational culture have been used to analyze the effectiveness of many different types of organizations, including those in the health care industry. Researchers have suggested that leadership style and organizational culture directly impact the communication competencies of professionals within these organizations, and health care organizations are not excluded. Meagher-Stewart et. al. (2010) were interested in how PHNs could be better utilized within the health care system. Three main themes emerged that participants believed allowed them to be most competent: government and other system attributes (macro level); local organizational culture, including values and leadership characteristics (meso level); and frontline management practices (micro level).
Leadership on all levels is extremely important (Likert, 1967; Meagher-Stewart et. al., 2010; Seren & Baykal, 2007). The relationships that exist between employees within the health care system directly impact how effective these professionals feel and this, in turn, impacts job satisfaction (Meagher-Stewart et. al., 2010; Seren & Baykal, 2007; Sugimoto, 2008). Organizational culture has been classified in many ways, such as Likert’s (1967) aforementioned System IV model. While these are useful in creating a foundation for understanding organizational culture in general, four categories are most useful for understanding and analyzing the organizational culture present in hospitals. By describing hospital culture as possessing either a power culture, role culture, collaborative culture, or competitive culture, researchers can more clearly identify the connection between organizational culture and communication (Seren & Baykal, 2007).

Power culture is authoritative, where instructions come from the top and the atmosphere is extremely competitive. In a role culture, job descriptions are considered more important than are the people performing them (Seren & Baykal, 2007). There is little space for innovation or creativity, and people are not expected to become experts at their role, as long as they continue to perform. A competitive culture is based on motivation through achievement; this achievement involves superiority, excellence, and possession of different and better technology than that of other organizations. Within a competitive culture, those with greater achievement advance more quickly. Finally, in a collaborative culture teamwork and team management are emphasized and considered essential in achieving goals (Seren & Baykal, 2007). Seren & Baykal (2007) said “although no type of culture that best fits health care settings has been defined, an innovative, creative, problem solving culture that is open to changes, where staff employees have as much
right to make decisions as do the managers, has been suggested as the most advantageous type” (p. 192).

Leadership effectiveness and personal effectiveness are integral parts to organizational culture. Using archival data from several countries, Kwantes & Boglarsky (2007) found a positive correlation between employee fulfillment and satisfaction; the same correlation was also found for leadership and personal effectiveness.

Organizational culture can lend a hand in the improvement of organizational security, because the more employees understand their organization and feel comfortable voicing concerns, the less likely it is that risks will go unacknowledged. In addition, flexibility and time (both to complete tasks and to build relationships) was considered important. Meagher-Stewart et. al. (2010), citing Glouberman & Zimmerman (2002) and Pisek & Wilson (2001), concluded that “health care systems and organizations are best understood as complex, adaptive systems rather than machines,” (p. 438), and that change must be collaborative.

**Predicted Relationships Between Culture and Health Care Outcomes**

Grunig (1992) suggested that the most effective organizations are collaborative because their communication channels are multi-lateral and allow for the sharing of a variety of perceptions. In addition, because people communicate in different ways, this two-way, symmetrical communication system allows for growth, adaptation, and flexibility, while maximizing people’s ability to communicate effectively (Grunig, 1992; Likert, 1967). Open communication channels allow for relationships to form, and as participants build a personal interest in the success of the organization as a whole, the organization becomes more effective. Therefore, based on Likert’s (1967) organizational
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Within hospital environments, worker perception of higher levels of collaborative organizational culture will be associated with higher levels of job satisfaction.

H1b: Within hospital environments, worker perception of higher levels of collaborative organizational culture will be associated with increased likelihood to report errors.

As discussed above, the cultural environment in which health care professionals work, as well as the relationships that exist between health care workers, are also important to consider when discussing job satisfaction. More specifically, these relationships are complex and are influenced by people's different roles within the organization. Role identity is an important concept to understand because it influences how relationships develop and how communication interactions take place (Grube et al., 2010).

Role Identity

Two different theoretical frameworks have led to the development of role identity theory: identity theory and group identity theory (Hogg, 1996; Stets & Burke, 2000). Grube et al. (2010) defined role identities as “components of the self that correspond to the social roles we play, such as work and family roles (e.g., nurse, mother)” (p. 156). A role identity is established when a role becomes internalized and adopted as a component of the self. Giddens (1991) suggested that just as self-identity is environmentally influenced, role identities are also contextually contingent.
A self-identity has to be created and more or less continually reordered against the backdrop of shifting experiences of day-to-day life and the fragmenting tendencies of modern institutions. Moreover the sustaining of such a narrative directly affects, and in some degree helps construct, the body as well as the self. (Giddens, 1991, p. 186)

Furthermore, once these roles become part of an individual, they guide behavior choices (Grube et al., 2010). This has significant implications within the health care environment, because it suggests that as people internalize their roles, their behavior (such as error reporting) is affected.

Sarangi (2010) suggested that there is a link between status and role within a given sociocultural system/order. In the health care profession, a doctor’s ability to perform his/her expected role is directly connected to his/her status. This becomes complicated, however, as health care professionals are often expected to perform multiple roles within one communication interaction (Merton, 1968). Several researchers have suggested that health care professionals have a multi-role set that combines aspects of therapy, education, and gatekeeping, as well as safeguarding the common good (Foucault, 1972; Merton, 1968; Sarangi, 2010).

**Research Questions**

The establishment of a role identity within the health care environment has been examined on many levels, yet the relationship between role identity and communication competency has not been addressed (Foucault, 1972; Grube et al., 2010; Merton, 1968; Sarangi, 2010). Grube et al. (2010) stated that “role identity and group identity are pivotal concepts for exploring barriers to reporting observed errors” (p. 157). The
absence of communication competency in this equation, however, raises questions about this perspective relationship. Additionally, if role identity is directly connected to the reporting of errors, could it also be related to job satisfaction? These potential relationships lead to the second set of research questions:

**RQ2a. Does role identity moderate the relationship between communication competency and job satisfaction?**

**RQ2b. Does role identity moderate the relationship between communication competency and reporting of error?**

Role identity is not static, but rather is something that develops and changes as an individual interacts with different people and in different contexts. The organizational culture of a hospital is an important factor in the development of health care professionals’ role identities. Importantly, organizational culture may also influence communication competency.

**Assessing the Moderating Role of Organizational Culture**

As previously discussed, there are many different factors that affect communication competency within health care settings. These factors could also potentially influence other health care outcomes. It has been suggested that the context in which a communication act takes place is influences whether the communication interaction is successful (Grunig, 1996; Powell & Johnson, 1982). Situational theory expands on the idea that the communication environment (i.e. health care, finance, education) has a significant impact on how members within that community communicate (Kim & Grunig, 2011).

**Situational Theory**
The situational aspect of communication is an important concept to understand because it suggests that while a person may be a competent communicator, the environment in which they are communicating plays a major part in whether they are able to effectively communicate. Grunig (1966) originally developed the situational theory of publics in the context of problem solving; a public’s awareness of a problem, and the extent to which its members try to address the problem, is used to classify the public’s communication competency. The situational theory of publics was later expanded to include the actual communication processes taking place during problem solving, specifically information sharing. Kim and Grunig (2011) suggested that by observing actively communicating publics, it is evident that the members of these publics engage in a variety of different communicative actions: yet these actions are contextually dependent (p. 122). This concept is important because the situational theory of publics has created a foundation for future theorists to analyze the communication competencies of specific publics (e.g. health communication, media exposure, and political communication).

Situational theory is a departure from traditional trait theory, which suggests that people, if effective communicators, will act competently regardless of the situation (Powell & Johnson, 1982). For the health care industry, situational theory is extremely important. Applying this theory to health care settings specifically suggests that even if health care professionals are competent communicators, the environment in which they work can be a barrier to effective communication. Overall, the context in which communication interactions take place can influence the success of the specific communication event. Within the health care context, the relationships that exist between health care workers,
and the communication systems that frame these daily interactions, directly impact health related outcomes.

**Research Questions**

Powell & Johnson (1982) suggested that communication is a process that takes place in different ways depending on the contextual environment, and this idea is connected to organizational culture. Both organizational culture factors and communication competency strongly influence health care workers perceived job satisfaction and reporting of errors; however, the exact relationships between these variables is not fully understood. It is important to examine how organizational culture moderates or regulates the impact of communication competency on these outcomes in order to understand how to improve these professional environments. This leads to the final research questions:

**RQ3a. Does organizational culture moderate the relationship between communication competency and job satisfaction?**

**RQ3b. Does organizational culture moderate the relationship between communication competency and reporting of errors?**

Figure 1 depicts the proposed relationships between all variables in this study.

**Methods**

This study draws upon several different theories as the foundation for its hypothesis and research questions. While communication competency’s relationship with role identity, organizational culture, job satisfaction, and error reporting within a health care setting has not been examined in depth, there is a plethora of research that examines these different concepts independently. This study selected a survey method of
data collection for several reasons. First, the scales used to measure the five variables in question all lent themselves most effectively to a survey format, since the items were already developed in a Likert-type style. Second, participants were recruited from all over the country, thus due to funding and time restrictions, a survey format was most appropriate. Last, the large sample size needed to perform an accurate regression analysis would have been challenging to obtain using any other method.

Participants

Participants consisted of doctors, nurses, medical students, and other health professionals from both public and private hospitals across the United States. A message asking for volunteers was sent out via various medical-related listservs (e.g. http://studentdoctor.net, Medpgy1@listservprivate.med.nyu.edu, Medpgy2@listservprivate.med.nyu.edu, Medpgy3@listservprivate.med.nyu.edu, https://lists.uvic.ca/mailman/listinfo/nrsinged). This email described the purpose of the survey and provided a link that led directly to the survey site. In addition, participants were asked to forward the survey to their colleagues, thus while the initial outreach was through the above listservs, it is impossible to know what other outlets were utilized. A total of 145 medical professionals successfully completed this survey.

Procedure

The survey consisted of 92 items. Participants were asked their demographic information (e.g. age, gender, professional title), as well as questions regarding their perceptions about communication competency, organizational culture, role identity, reporting of errors, and job satisfaction. Unless otherwise noted, all of the survey items
used 5-step Likert-type statements that were measured using the following scale: 1 (strongly disagree), 2 (disagree), 3 (undecided or neutral), 4 (agree), 5 (strongly agree).

**Predictor Variable**

**Communication competence.** Wiemann's (1977) Communication Competence Scale (CCS) was used to measure health care professional’s perceptions of his or her own communication competence. The original measurement system consisted of 57 Likert-type items that aimed to accurately evaluate the following five dimensions of interpersonal competence: 1) empathy, 2) general competence, 3) behavioral flexibility, 4) affiliation/support, and 5) social relaxation and one dependent measure of interaction management. Wiemann developed, and then revised, a measurement instrument consisting of 36 items. Wiemann (1977) reported a .96 coefficient alpha (and .74 magnitude of experimental effect) for the 36-item instrument, which suggested that the CCS is internally consistent. Items included statements such as “I listen to what people say to me” and “I generally know what type of behavior is appropriate in any given situation.” In this study, reliability for this scale was $\alpha = .97$. Items were summed together and then averaged to create a communication competency scale.

**Moderator Variables**

**Culture.** Zammuto and Krakower (1991) developed a Competing Values Framework, which was used to “assess organizational culture as a predictor of quality improvement implementation, employee and patient satisfaction, and team functioning, among other outcomes” (Helfrich et. al., 2007). Many different researches have utilized this scale to measure organizational effectiveness, particularly in health care settings (Helfrich et. al., 2007). Two items were selected from this scale that most clearly tapped
into a collaborative cultural environment: “My professional environment is a very personal place. It is like an extended family. People share a lot of themselves,” and “My organization emphasizes human resources. High cohesion and morale in the school are important.” Reliability for these two items was $a = .633$. Both measures were summed together and then averaged to create a collaborative organizational culture scale.

**Role Identity.** Role identity was measured by including items from Callero’s (1985; Callero et al., 1987) role identity scale. This scale was modified by Grube and Piliavin (2000) and later used by Grube, Piliavin, & Turner (2010) to measure health professionals’ role identities. An example from the 13-item scale is as follows: “I would feel a loss if I were forced to give up my career in health care.” Grube et.al reported a coefficient alpha of .82. Reliability for this scale was $a = .92$. Items were summed together and then averaged to create a role identity scale.

**Outcome Variables**

**Reporting errors.** Reporting of error was measured by including items from Grube et. al.’s study, which focused on the reporting tendencies of nurse practitioners. They measured reporting behavior by asking nurses who had observed unsafe patient practices; this survey will specifically focus on instances when medical professionals noticed procedural errors occurring, followed by questions about their reaction to these incidents. Examples of such items are, “How often have you noticed procedural errors taking place in your work environment?” followed by “Did you make an official report for any of these incidents?” Noland and Rickles (2009) analyzed the elements that influenced error reporting for pharmacy students. They questioned students on topics such as “memorable communication-related medication errors, and reflections on
medication errors made” (p. 353). Reliability for this scale was $\alpha = .70$. Items were summed together and then averaged to create a reporting of error scale.

**Job satisfaction.** Job satisfaction was also examined as an outcome of communication competency. Wanzer, Wojtaszczyk & Kelly (2009) analyzed nurses’ perceptions of physicians’ communication and how these communication practices affected different elements of their job and ultimately their levels of job satisfaction. From their 17-item scale, items regarding perceptions of satisfaction with co-workers communication (e.g., “My co-workers listen to my suggestions), relationships (e.g., “In general I have a positive relationship with my co-workers”), and general items about job satisfaction (e.g., “I am satisfied with my job”) were included. Reliability for this scale was $\alpha = .927$. Items were summed together and then averaged to create a job satisfaction scale.

**Control Variables**

Several control items were included in this study. The participant’s gender, age, number of years of experience in their role, and their length of employment at their current place of work are examples of items that served as controlled variables.

**Results**

**Descriptive Statistics**

The participant pool (N=145) was roughly 68.3% female and 38.3% male. The average age of participants was predominantly under 30 years of age. Approximately 64.1% of participants were between the ages of 20-30, 17.9% were between the ages of 31-40, 7.6% were between the ages of 41-50, 10.3% were between the ages of 51-60, and 2.1% were over 60 years of age. Participants were asked their professional title (e.g.
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physician, nurse, medical student, etc.); 49% of respondents were medical students, 24.1% were nurses, 16.6% were physicians, and 6.9% held other health positions. For analysis purposes, the responses that noted titles other than physician, nurse or medical student were grouped into a category labeled "health professional." The majority of participants (51.3%) stated that they had worked in their current profession for 1-3 years. The next largest group (23.4%) stated that they had worked in their current profession for 4-6 years. 4.1% of participants fell into the 7-9 year category, 2.1% of participants fell into the 10-12 year category, and 17.9% stated that they had worked in their current profession for 13 years or more. The last demographic question asked participants how long they had worked in their current place of employment. The majority of respondents (62.1%) stated that they had only worked at their place of employment for 0-3 years. 20.0% fell into the 4-6 year range, 3.4% fell into the 7-8 year range, 2.8% fell into the 9-10 year range, and 9.7% of participants had been working in their current organization for 11 years or more.

Preliminary descriptive analyses of the central predictor and outcome variables in this study indicated that participants reported slightly above average scores regarding working in a collaborative organizational culture ($M = 2.61, SD = .92$). Conversely, average scores on reporting of error ($M = 2.49, SD = .89$), communication competency ($M = 2.13, SD = .83$), role identity ($M = 2.27, SD = .74$), and job satisfaction variable ($M = 2.13, SD = .74$) all fell below their respective scale means.

Preliminary Correlation Analyses

Table 1 displays the Pearson correlation analyses involving all central variables in this study. Significant, positive correlations were found between all measures, ranging
from .20 to .64. A particularly high positive correlation was found between communication competency and role identity \((r = .64)\), which suggests that high levels of competency are strongly associated with health care professionals identification with their role within the organization. Importantly, communication competency was significantly associated with both outcome measures – job satisfaction \((r = .614)\) and reporting of errors \((r = .2549)\).

Additional correlation analyses examined what relationship, if any, there was between the control measures in this study (gender, age, professional experience, and years of experience in current organization) and the central predictor and outcome measures. Results showed that only professional experience and age were significantly associated with any of these variables. Thus, gender and years of experience in one’s current organization were not included in any subsequent analyses. Surprisingly, both professional experience and age were negatively associated with the likelihood to report on-the-job errors \((r = .18, p < .05 \text{ for professional experience}; r = .17, p < .05 \text{ for age})\). This unique finding warranted further investigation within formal (i.e., multiple regression) tests involving the main predictor variables. However, given the extremely high correlation between experience and age \((r = .84, p < .001)\), the researchers decided to only include professional experience as a predictor in the subsequent tests.

Finally, two one-way Anovas were run to examine whether there were differences across professional title (e.g., doctor, nurse, medical student, other) in levels of job satisfaction and error reporting. Results showed that there were no significant differences in either job satisfaction \([F(3, 136) = 1.61, p > .05]\), or error reporting \([F(3, 136) = 2.31, p > .05]\) across groups.
Formal Tests of Research Questions and Hypotheses

A series of hierarchical regressions were run to test the research questions and hypotheses. This analysis allows the researcher to examine the relationship between the predictor (communication competency) and the outcome variables (job satisfaction, reporting of errors) after accounting for the variance explained by other factors (organizational culture, role identity).

**Job satisfaction.** The first hierarchical regression analysis assessed the main and interactive effects of communication competency, role identity, and collaborative culture on job satisfaction (see Table 2). The main effect of these three variables in model 1 explained significant variance in job satisfaction ($R^2 = .49$, $F (3, 141) = 45.83, p < .001$). Communication competency ($\beta = .42, t = 5.31$) was a significant, positive predictor of job satisfaction. Competency alone accounted for roughly 10% ($semi\text{-}partial\ r\text{-}squared = .10$) of the variance in job satisfaction. The presence of a more collaborative culture was also found to be a significant, positive predictor of job satisfaction ($\beta = .32, t = 5.18, semi\text{-}partial\ r\text{-}squared = .10$). Thus, Hypothesis 1a was supported. Although not central to this study, there was also a significant, main effect of role identity on job satisfaction ($\beta = .17, t = 2.11, semi\text{-}partial\ r\text{-}squared = .02$). Overall, higher levels of identification with one’s role in a health care organization was associated with higher levels of job satisfaction.

Model 2 assessed whether collaborative culture and role identity moderated the relationship between competency and job satisfaction. Adding the two interaction terms in model 2 added significant incremental variance ($\Delta R^2 = .03, \Delta F (2, 139) = 4.00, p < .05$) to the model. However, only the interaction between communication competency and role identity was statistically significant ($\beta = .22, t = 2.27, semi\text{-}partial\ r\text{-}squared = .02$).
To decompose this interaction, separate regression models examining communication competency as a predictor of job satisfaction were run at 1 standard deviation above and below the mean (Aiken & West, 1991) of role identity (see Figure 2). Competency was a significant, positive predictor of job satisfaction at high levels of role identity ($\beta = .43, p < .01$), but was a nonsignificant positive predictor of this outcome at low levels of role identity ($\beta = .20, p = .10$).

**Error reporting.** The second hierarchical regression analysis examined the main and interactive effects of the central study variables on the likelihood that health care professionals will report on-the-job errors. Recall from the prior correlation analyses that length of experience was significantly associated with error reporting. Thus, this factor was included as a control measure in the first block of the model. The main effects of competency, collaborative culture, and role identity were included in model 2, with the interaction variables added in model 3. Table 3 displays the results of these analyses. While model 1 simply replicates the correlation findings involving the link between experience and error reporting, model 2 provides unique information concerning whether each of the four factors independently predict error reporting while taking into account the variance explained by the other respective measures. Overall, the inclusion of communication competence, collaborative organizational culture, and role identity explained significant incremental variance in error reporting ($\Delta R^2 = .09, \Delta F (3, 139) = 4.75, p < .01$). However, while the prior correlation analyses showed that communication competence was significantly associated with error reporting, this relationship was not significant when tested formally in the multiple regression model ($\beta = .14, t = 1.32$). On the other hand, perception of a collaborative organizational culture remained a
significant, positive predictor of error reporting ($\beta = .17$, $t = 2.10$, semi-partial $r$-squared = .03), thus supporting hypothesis 1b. In addition, length of professional experience remained a significant, negative predictor of error reporting ($\beta = -.17$, $t = -2.17$, semi-partial $r$-squared = .03) in this model.

Finally, model 3 examined whether collaborative culture and role identity moderated the relationship between competency and error reporting. Results showed that the inclusion of the two interaction terms in model 3 did not add significant incremental variance ($\Delta R^2 = .02$, $\Delta F (2, 139) = 1.65$, $p < .05$) to the model. It is important to note, however, that the beta coefficient for the communication competency x role identity interaction term approached conventional levels of statistical significance ($\beta = .24$, $p = .07$). After decomposing this interaction, results indicate that, while nonsignificant, competency was a much stronger predictor of error reporting ($\beta = .17$, $p = .12$) for participants with high levels of role identity than those with low levels of role identity ($\beta = -.08$, $p = .62$). This finding at least suggests that role identity may impact the relationship between competency and error reporting similarly to its influence on the relationship between competency and job satisfaction.

**Discussion**

Communication competency is an integral part of organizational effectiveness. It has been suggested that factors such as time in the profession, as well as position, affect health care professionals' communication competency. In addition, other factors such as differing personal narratives, goal outcomes for the interaction, and communication styles can influence other aspects of professional life, such as job effectiveness and satisfaction (Morse & Piland, 1981; Sugimoto, 2008). The relationships between health care
professionals are dynamic and affect their communication competencies on many levels. Overall, given the established link between competency and organizational effectiveness, it is important to address more specifically the various ways that competency contributes to both the morale of health care professionals and their task-related communications (Likert, 1967; Grunig, 1992; Kwantes & Boglarsky, 2007).

In this study, competency was examined as a direct predictor of employees' levels of job satisfaction and willingness to report errors. These connections are particularly important given prior research indicating that health care workers that are happier in their position provide better service to their patients, create more positive working environments, and are overall more effective in their roles (Noland, 2006; Schulz, 2006; Vanderford, 2001). In addition, an alarming amount of errors go unreported daily in hospital settings, to the detriment and sometimes danger of patients (Barach & Small, 2000). Thus, it is important to understand the connection between communication competency and these factors in order to help improve the hospital environment and, in turn improve the experience for both health care workers and their patients.

A second goal of this study was to explore the connection between communication competency and role identity. As roles are internalized, they have the power to affect individuals' communication competencies and guide behavior choices within a particular organizational context (Giddens, 1991; Grube et. al. 2010). This has significant implications within the health care environment because it suggests that as people internalize their roles, their behavior (such as error reporting) is affected. Consequently, by examining whether role identity affects the impact of health care professionals' communication competency on job satisfaction and error reporting, we
may gain a clearer understanding of factors contributing to the safety and effectiveness of health care facilities.

A final goal of this study was to see whether the degree of collaboration embraced within a given health care facility’s culture moderated the impact of communication competency on employees' attitudes and behaviors. It has been well established that organizational culture has an influence on the communication channels that exist within an organization (Likert, 1992). Thus, this study examined whether organizational culture has the potential to strengthen or weaken the impact of communication competency on both job satisfaction and reporting of errors among health care professionals.

The findings of this study show that competency was a significant positive predictor of job satisfaction, even after taking into account the culture of the facility and one’s level of professional role identity. Therefore, increases in health care professionals’ communication competency is linked to higher levels of job satisfaction. While initial simple correlation analysis showed that competency was also positively associated with error reporting, this relationship was reduced to nonsignificance when formally tested in a multiple regression model. This finding suggests that while communication competency may have some link to error reporting, this association may be more clearly explained by communication competencies’ connection to other factors that have a more direct impact on error reporting, such as a collaborative organizational culture and years working in the medical profession.

In addition, results supported the prediction that workers’ perception that their organization exhibits a more collaborative organizational culture would be linked to these specific attitudes and behaviors. Overall, this indicates that the more health care workers
perceive their organizational culture as one that encourages teamwork and innovation, the more satisfied they are in their positions and the more willing they are to report the errors they see in the workplace.

The second set of research questions addressed the moderating impact of role identity and organizational culture on communication competency's link to job satisfaction and error reporting. Findings showed that health care professionals self-perceived identification with their role significantly altered the relationship between competency and job satisfaction. In particular, at high levels of role identity, communication competency was a significant, positive predictor of job satisfaction—a more powerful predictor than even collaborative organizational culture. However, at low levels of role identity, competency did not significantly predict job satisfaction. This finding suggests that only when health care workers identify strongly with their position within their organization will communication competency significantly contribute to higher levels of job satisfaction. While role identity technically did not moderate the relationship between competency and error reporting \((p = .07)\), a closer inspection of the slopes at high and low levels of role identity suggests a moderating impact similar to the findings on job satisfaction described above. More specifically, at high levels of role identity, communication competency may be an important factor contributing to the likelihood that workers report errors, whereas, at low levels of role identity, competency may not help explain why health care professionals report these mistakes.

While role identity was found to moderate the impact of competency on health care professionals attitudes (and possibly behavior), organizational culture was not found to be a significant moderator. Overall, this suggests that communication competency and
organizational culture likely operate as separate, independent predictors of certain worker attitudes and behaviors.

Finally, while not a central focus of this study, it is surprising that a significant relationship was found between the years of experience as a health care professional and the reporting of error. The greater the number of years of health care experience was negatively associated with error reporting. This unexpected finding is concerning because it suggests that the longer a health care worker has been in her profession, the less likely she is to report on-the-job errors.

Implications

The results from this study impact discussions about the role of communication competency in contributing to workers' satisfaction and crucial employment behaviors in health care settings. Importantly, these findings provide insight into experiences of health care professionals and patients and may assist in fostering development of future programs to try and improve health care environments.

The Importance of Communication Competency

The positive correlation between communication competency and job satisfaction is an important finding for several reasons. First, it suggests that health care professionals that consider themselves capable of communicating effectively within their professional environment are more satisfied with their careers. Second, based on the established connection between levels of job satisfaction and effective organizations (Kwantes & Boglarsky, 2007), this relationship underscores the importance that communication competency has in creating more effective and positive working environments. Third, because health care professional’s ability to effectively
communicate increases their levels of job satisfaction, and thus, indirectly, may contribute to the overall effectiveness of the organization, these findings underscore the importance of communication skills training. Research has suggested that more focus needs to be placed on teaching communication skills to health care professionals (Wyatt, 1991). In particular, Wyatt's examination of Medline medical journals from 1983 to 1989 found a complete absence of the word “communication,” and a search for “doctor-patient relationships” only revealed 168 articles (less than one percent of the total number of articles written during that time period) (p. 159). These results suggest that in the past, excellence was not a priority within the medical community (Grunig, 1992). While the literature on doctor-patient communication has increased in the interim (see Noland, 2006; Schulz, 2006; Wyatt, 1991; Vanderford, 2001), the effectiveness of communication training provided to medical students, physicians, and nurses is still being questioned (Wouda & B.M. van de Wiel, 2012). In addition, even though effective communication between doctors and patients is becoming more of a focus, there is still a lack of research that addresses the communication that takes place between health care professionals across various positions and departments. This is disconcerting considering that results from this study suggest that more communicatively competent health care professionals are more satisfied.

Overall, the findings of this study will hopefully promote greater interest in examining distinct communication factors that contribute to health care professionals attitudes and behaviors. Communication competency has the potential to influence both job satisfaction and error reporting, however this skill is not prioritized in the health community. Although these professionals deal with information that effects other’s
health, limited communication training is provided to these individuals. The results from this study emphasize the need for more focus to be placed on educating health care professionals on effective communication techniques.

**The Moderating Impact of Role Identity**

Findings also showed that the relationship between communication competency and job satisfaction was considerably altered by health care professional’s self-perceived identification with their position. In particular, at high levels of role identity, communication competency positively predicted of job satisfaction, whereas at low levels of role identity competency was not linked to this outcome. This finding suggests that only when there is a combination of strong identification with one’s position in a health care organization will higher levels of communication competency significantly contribute to higher levels of job satisfaction. Overall, these results provide a clearer understanding of the conditions under which competency is most likely to predict more favorable work attitudes. Prior research addressing the contribution of communication competency on workers’ attitudes and behaviors has suggested that the importance of different communication skills (i.e. advising, persuading, instructing, listening, etc.) to health care professionals is dependent on their position (Morse & Piland, 1981), and this affects their overall communication competency. Sugimoto (2008) suggested that health care professionals’ communication competency is also affected by factors such as partner, rank, department, and length of work experience. Ultimately, simply possessing specific communication skills/competencies does not ensure that health care professionals will be satisfied with their current position or feel compelled to report incidents in the workplace. Therefore, while there has been an increased focus among
hospitals and medical schools to strengthen workers communication skills (as noted earlier), health care establishments should also seek to understand why many employees lack a strong connection with their position/role within the company. Although the correlation findings from this study indicate that there is a strong relationship between competency and role identity, health care organizations should not assume that raising one’s communication skill level will simultaneously promote a greater identification/connection with one’s role in that organization. Rather, it seems imperative that these organizations find ways to communicate and reinforce the immense value, responsibility, and intrinsic benefits involved in holding various roles within the health care profession.

**Embracing Collaborative Cultures**

The results from this study also indicate that the more health care workers perceive their organizational culture as one that encourages teamwork and is flexible and open, the more satisfied they were in their positions, and the more likely they are to report on-the-job errors. Unfortunately, most health care facilities do not embrace this type of collaborative culture; rather, research has found that the most common culture within hospitals is authoritative (Shaw, 2002). Recall that an authoritative organizational culture has a closed, inflexible communication infrastructure where employees are expected to perform their assignments without asking questions (Seren & Baykal, 2007). As noted earlier, dissatisfied employees are less productive members of their organization. Therefore, the work environment present in many health care facilities may not be conducive to achieving the highest levels of efficiency.

Additionally, an authoritative culture also discourages health care workers from
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reporting the errors that they see in their place of work (King & Anderson, 1995). A health care environment where workers are hesitant to report errors is dangerous to not only the employees of that organization, but also the patients that come to that institution for care.

In sum, while a more collaborative culture within hospitals is linked to greater worker satisfaction and an increased likelihood to report errors, this type of environment is rarely practiced in many health care facilities. Rather, the majority of health facilities adhere to more traditional, authoritarian cultures. This type of culture favors one-way communication channels that may make it challenging for health care professionals to feel satisfied in their roles. Furthermore, because authoritarian cultures tend to be more inflexible than other culture types, management may discourage health care workers to report on-the-job errors. This, in turn, may compromise the health of patients. Overall, this authoritarian environment embraced by many health care facilities may have serious negative effects on the attitudes and behaviors of employees. Thus, it is essential to focus resources on creating more collaborative health care environments in order to ensure that professionals are more comfortable reporting the mistakes that they see.

**Links between Experience and Error Reporting**

A separate yet important finding of this study is the troubling negative association found between experience in one’s position/role and likelihood to report on-the-job errors. There are several explanations for this result. First, risk management and security are important factors within an organization (Ionescu, 2009). It is possible that as health care professionals spend more time in their roles, they prioritize the security of their career and fear jeopardizing it by reporting errors. Subsequently, health care
professionals may feel that they have more to lose, and thus would rather remain silent than risk admitting an error took place. Personal relationships are also important in the health care community; they can affect health care professionals’ willingness to report errors (Noland & Rickles, 2009). As these relationships between workers develop, it is possible that these bonds discourage the reporting of errors because co-workers do not want to “tell” on their friends. In particular, Noland & Rickles (2009) suggested that one possible explanation as to why pharmacists do not report on-the-job errors could be the pharmacists’ fear of disappointing his or her supervisor, and/or the public shame of having been less than perfect. Regardless of the reason behind this result, the failure to report these errors has far reaching implications for the health community. Although it is unclear the extremity of error that goes unreported, given that this profession involves people’s health, ignoring one error may have mortal consequences.

Younger health care professionals may also be likely to emulate their superiors’ behaviors. If new entrants into the health care environment see their superiors ignoring errors in the workplace, it is unlikely that they will feel supported to report errors that they personally experience (King & Anderson, 1995; West, 1990). This culture of non-reporting could thus be being passed down, creating a cycle of silence. As health professionals new to the organization see that their superiors are not reporting errors, they follow suit because the environment does not support an alternative option (i.e. reporting errors). Overall, failure to report errors by experienced health care professionals may have both immediate negative effects on current patients and lead to longer-term systemic problems in health care facilities.

Limitations
There are several important limitations of this study. The first issues relate to the size and diversity of the sample. Only 145 health care professionals fully completed the survey. Thus, in order to be able to apply these conclusions to health care professionals in general, a much larger sample size is needed. Furthermore, while the sample size was large enough to detect certain significant relationships, the small number of participants made it more challenging to identify small effect sizes and higher-order (i.e. interactive) effects. There was also a lack of diversity among the participants in this sample. Specifically, out of the 145 participants, almost 50% were medical students and over 60% were under the age of 30. It would be beneficial to have a more even distribution of medical students, physicians, nurses, and health care professionals, as well as more participants from an older age bracket. This is especially relevant given the results that showed that the longer an individual has been working as a health care professional, the less likely he or she is to report on-the-job errors. Overall, in order to have more confidence in these findings, this association should be explored among a more diverse age range.

Second, the results from this cross-sectional survey only show the associations between variables: it cannot prove a clear sequence of events. For example, this study cannot definitively state that high levels of communication competency combined with high levels of role identity leads to higher levels of job satisfaction among health care professionals. Follow-up longitudinal analysis that examines the central predictor variables at time 1 and health care professionals attitudes and behaviors at time 2 would offer a clearer understanding of the sequence involved in these relationships. In addition, even though the survey responses were anonymous, participants may have been prone to
provide more socially desirable responses to questions involving error reporting. As previously stated by Noland and Rickles (2009), factors such as the fear of disappointing superiors could be one explanation as to why health care professionals do not report errors in the workplace; factors such as these could subconsciously affect participants’ answers to the error reporting items.

Finally, another important limitation of this study involves the stability and accuracy of the organizational culture scale. In particular, only two items were used to address this concept, and the internal consistency between these items was somewhat low ($\alpha = .63$). While the two items were taken from a widely used organizational culture scale, future researchers should further examine the factors that constitute a collaborative organizational culture. Additional items that assist in more fully addressing the perceptions that health care professionals have about the teamwork, innovation, and two-way symmetrical communication present in their professional organization should be included.

**Future Research**

While the results were enlightening on several fronts, they also indicate that more extensive research is needed in this area. First, collaborative culture within health care settings needs to be more specifically examined. While extensive research has been done examining organizational culture as a whole (Grunig, 1992; Helfrich et. al., 2007; Likert, 1967; Zammuto and Krakower, 1991), no organizational culture scales exist that exclusively focus on health care environments. Because different organizations across different fields face different issues, it would be useful to explore in more depth the various factors that influence health care organizations. In addition, it would be useful to
examine unique dimensions of collaborative culture present within health care environments. Researchers have suggested that innovation, creativity, and flexibility are important organizational factors that create more effective health care organizations (Kwantes & Boglarsky, 2007; Seren & Baykal, 2007). Further examination of these factors would shed light on the organizational factors that make up collaborative health care organizations.

An expansion of this study that examines more closely factors such as the type of health care organization (i.e. a hospital, non-profit, or research institution), as well as the geographical location in which these health care professionals work would be interesting. A plethora of research focusing on the cultural dimensions of organizations has proven that organizations function differently depending on their cultural background (Ionescu, 2009; King & Anderson, 1995; Likert, 1967). In addition, the geographical location of the organization also has the potential to affect its employees. It would be interesting to examine whether these two factors are linked to differing levels of competency, and whether the outcomes of job satisfaction and reporting of error are affected more for particular areas or types of health care organizations.

Also, the theme of risk appeared multiple times, and should be explored further. Much research exists regarding risk taking and risky organizational environments, however there is not a clear classification of health care organizations as those involving high risk. King & Anderson (1995) discussed the idea of participative safety, and this is important when considering what kinds of environments promote higher levels of communication competency. Environments in which health care professionals feel more supported create a safety net, which then makes these professional more likely to express
their opinions; this is essential in a high risk environment because the willingness of employees to verbalize mistakes can affect peoples' lives. A connection between health care research and other areas that focus on high risk environments (such as aviation) should be drawn so that these two areas can learn from each other.

Second, the relationship between communication competency and error reporting needs to be more thoroughly examined. Recall that while simple correlation analysis showed that competency and error reporting were positively related, formal tests of this relationship in the larger multiple regression model were not significant. It is possible that any connection between these factors can be explained by communication competencies' relationship with other factors that have a more direct impact on error reporting such as such as a collaborative organizational culture: however, more research is needed to clarify this relationship. It is thus important to examine possible indirect associations between these concepts in order to address a possible larger process and its relationship to error reporting tendencies.

Health care professional’s communication competency also impacts the experience that their patients have during health care interactions. The plethora of research that exists examining doctor-patient communication suggests that a positive relationship between doctor and patient is pivotal in creating a good experience for patients. Additionally, patients that feel disconnected to their health care provider are less likely to adhere to prescribed health regimes (Noland, 2006; Schulz, 2006; Wyatt, 1991; Vanderford, 2001). Thus, health care workers without effective communication skills have the potential to negatively affect their patients. Negative outcomes such as
patients' dissatisfaction and mal-practice suits could be combated by improving health care professionals' communication competency (Vanderford, 2001).

Third, the influence that the years of professional experience in a health care field has on organizational factors and health-related outcomes needs to be explored further. This study revealed an unexpected negative relationship between error reporting and professional health care experience. Given that no significant relationships were found between professional health care experience and the central predictor variables in this study (communication competency, role identity, and collaborative culture) it remains unclear what outside variables, if any, help explain this troubling relationship. Overall, it is important to examine this relationship more thoroughly to see if there are factors that buffer the negative impact of professional experience on error reporting.

The significant negative correlation between length of work experience and tendency to report errors raises a number of concerns about what other work-related variables length of work experience impacts, such as: the ability to communicate effectively with patients, the ability to be effective managers or team members, and how receptive these individuals are to change. These concerns need to be addressed in order to gain a comprehensive picture of what factors create the most effective organizational environment.

Finally, the reasons why health care professionals that have been in their careers longer are less likely to report errors they see needs to be explored in more depth. While the survey method used in this study discovered a negative correlation between length of work experience and tendency to report errors, it cannot explain the attitudes that exist behind this relationship. Thus, the same concepts addressed in the survey should be
approached using different research methods. Interviews or focus groups made up of health care professionals would allow researchers to expand on the relationship between error reporting and years of work experience. Asking health professionals, "why do you think it is that the longer health care professionals are in their work environment, the less likely they are to report errors?" would be enlightening. These narratives could provide insight into the motivations behind error reporting, and could give direction as to how to combat this issue in the future.

**Conclusion**

It cannot be denied that communication competency, organizational culture, and role identity are integral parts of an organization's overall effectiveness (Likert, 1967; Giddens, 1991; Grube et. al. 2010; Grunig, 1992; Kwantes & Boglarsky, 2007). This study had several goals. First, it examined the connection between communication competence and two important outcomes: job satisfaction and reporting of errors. Second, it examined the moderating impact of role identity and organizational culture on the relationship between communication competency and these outcomes (job satisfaction and reporting of errors).

Results from this study show that higher levels of communication competency directly contribute to more satisfied health care workers. Importantly, however, this relationship appears to be influenced by how strongly one identifies with her role in a health care organization. Specifically, only under circumstances where workers feel strongly connected to their position are higher levels of communication competency related to higher levels of job satisfaction. Alternatively, while results offer tentative conclusions that competency in combination with role identity may increase the
likelihood that health care workers report errors, overall, this relationship remains unsupported. In addition, while results of this study indicate that a more collaborative organizational culture does not moderate the impact of communication competency on health care workers attitudes or behaviors, having a more collaborative culture independently contributes to higher levels of job satisfaction and an increased likelihood to report errors. Finally, while not central to this study, results also showed that greater experience as a health care professional was linked to a decreased tendency to report on-the-job errors. This finding is particularly concerning because these individuals are likely to hold more powerful (i.e., decision-making) positions.

This study provides an understanding of how the relationship between communication competency and other organizational factors such as collaborative culture and role identity may significantly affect health care professionals attitudes and behaviors. By continuing to explore such relationships, researchers and practitioners may gain knowledge about the factors that contribute to a more positive work environment for health care professionals, as well as to a safer and more effective health care organization as a whole. These discoveries can hopefully be used to improve the organizational structure within health care institutions and thus, positively influence the experiences of employees within hospitals and other health care facilities as well as those being treated by these individuals.
References


Sugimoto, N. (2008). Hospital Employees' Perceptions of Communication Difficulty:


### Table 1

**Intercorrelations of Main Study Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<td>1. COMCOP</td>
<td>--</td>
<td>.268**</td>
<td>.641**</td>
<td>.614**</td>
<td>.249**</td>
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<tr>
<td>2. CORGCU</td>
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<td>--</td>
<td>.212*</td>
<td>.471**</td>
<td>.203*</td>
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<td>3. ROLEID</td>
<td>--</td>
<td>--</td>
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<td>.503**</td>
<td>.222**</td>
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<tr>
<td>4. JOBSAT</td>
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<td>--</td>
<td>--</td>
<td>--</td>
<td>.401**</td>
</tr>
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<td>5. ERREP</td>
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</table>

*Note: COMCOP = Communication competency, CORGCU = collaborative organizational culture, ROLEID = role identity, JOBSAT = job satisfaction, and ERREP = reporting of error; * = p ≤ .05, ** = p ≤ .01*
Table 2

Summary of Hierarchical Regression Analysis for Variables Predicting Job Satisfaction

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>β</th>
<th>SE</th>
<th>(r_{sp}^2)</th>
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<td><strong>Model 1</strong></td>
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<tr>
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\[ R^2 = .49 \]
\[ F(3, 141) = 45.83** \]

**Model 2**

<table>
<thead>
<tr>
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<td>COMCOP X ROLEID</td>
<td>.14</td>
<td>.22*</td>
<td>.06</td>
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</table>

\(\Delta R^2 = .03\)
\(\Delta F(2, 139) = 4.00^*\)

*Note: COMCOP = communication competency, CORGCU = collaborative organizational culture, ROLEID = role identity, \(B\) = unstandardized beta coefficient, \(\beta\) = standardized beta coefficient, SE = standard error, \(r_{sp}^2\) = semi-partial r-squared

\* = \(p \leq .05\), ** = \(p \leq .01\)
### Summary of Hierarchical Regression Analysis for Variables Predicting Error Reporting

<table>
<thead>
<tr>
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$R^2 = .03$

$F(1, 142) = 4.79^*$

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<tr>
<td>COMCOP</td>
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<tr>
<td>CORGCU</td>
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<td>.17*</td>
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<tr>
<td>ROLEID</td>
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<td>.08</td>
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</table>

$\Delta R^2 = .03$

$\Delta F (3, 139) = 4.75^{**}$

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<td>COMCOP X CORGCU</td>
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<td>.13</td>
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</tr>
<tr>
<td>COMCOP X ROLEID</td>
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<td>.24†</td>
<td>.10</td>
<td>.02</td>
</tr>
</tbody>
</table>

$\Delta R^2 = .03$

$\Delta F (2, 139) = 4.00^*$

*Note:* PROFEXP = years of experience in profession, COMCOP = communication competency, CORGCU = collaborative organizational culture, ROLEID = role identity, $B =$ unstandardized beta coefficient, $\beta =$ standardized beta coefficient, $SE =$ standard error, $r_{sp}^2 =$ semi-partial r-squared

$† = \leq .10, \ * = p \leq .05, \ ** = p \leq .01$
Figure 1: Relationship Between Main Variables, Moderating Variable, and Outcome Variables
Figure 2: Relationship between Communication Competence and Job Satisfaction as a function of Role Identity