A Dissertation

Entitled

Determinants of Healthcare Professionals’ Self-Efficacy to Resolve Conflicts that Occur Among Interprofessional Collaborative Teams

by

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Conflict within interprofessional collaborative healthcare teams, when not effectively resolved, has been linked to many detrimental consequences, including a decrease in overall team performance, a reduction in job satisfaction, serious risk of injury, and even death to patients. However, effective conflict resolution has been shown to enhance team performance, increase patient safety, and improve patient outcomes. Alarmingly, knowledge of healthcare professionals’ ability to resolve conflict has been limited in the research literature, largely due to the challenges that arise when researchers attempt to observe a conflict occurring in real time. However, investigating healthcare professionals’ perceptions of their ability to resolve conflict (i.e., their self-efficacy) provides a justifiable method for understanding conflict resolution ability. The purpose of this study was to investigate three central components of conflict resolution (i.e., communication competence, education and training, and problem-solving ability) found in the research literature to influence healthcare professionals’ perceived ability to resolve conflicts that occur among interprofessional collaborative healthcare teams. This study employed a quantitative, exploratory, non-experimental, cross-sectional survey
design. Correlational analyses revealed statistically significant relationships between all three central components—communication competence, education and training, and problem-solving ability—and healthcare professionals’ perceived ability to resolve conflict. A multiple regression analysis demonstrated that two of the three central components—education and training and communication competence—were found to be statistically significant predictors of healthcare professionals’ perceived ability to resolve conflict. A multiple regression analysis demonstrated that two of the three central components: education and training, and communication competence were found to be strong predictors of a healthcare professional’s perceived ability to resolve conflict. These findings provide evidence about the significance of (a) educating and training healthcare professionals how to resolve conflicts that occur among interprofessional teams and (b) teaching communication skills specifically designed to improve healthcare professionals’ ability to resolve conflicts. Implications include a call to action to clinicians and academicians to recognize the importance of conflict resolution education and training and to participate in evidenced-based research that will advance the knowledge and skills of healthcare students and healthcare professionals in this vital area of interprofessional education and collaborative practice.
I would like to dedicate this dissertation to the two most important men in my life, my dad and my husband. My dad taught me that pursuing higher education is possible with hard work, dedication, and belief in oneself. I watched over the years his commitment to his plastic surgery patients and plastic surgery residents and knew in my heart someday I wanted to be a respected professional just like him. Obtaining my terminal degree places me one step closer to being the successful professional my dad has inspired me to be.

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Chapter 1
Introduction

Background of the Study

Conflict within interprofessional collaborative healthcare teams, when not effectively resolved, has been linked to many detrimental consequences, including a decrease in overall team performance, a reduction in job satisfaction, a decrease in organizational growth, and a decrease in productivity (De Dreu & Weingart, 2003; Fargoson & Haddock, 1992). Unresolved conflict also has been shown to escalate into destructive social, personal, and professional behavior (Stuart & Sundeen, 1995). Perhaps one of the most alarming findings in the research literature on conflict resolution is that unresolved conflict among members of healthcare teams has resulted in serious injury and even death to patients (Dugan et al., 1996).

Team training programs have been developed and disseminated by leaders in healthcare to teach specific skills that help healthcare professionals learn how to function more effectively within teams (Agency for Healthcare Quality and Research [AHRQ], 2008). In addition, overarching frameworks that identify essential components and provide theoretical guidelines for working collaboratively have been developed and disseminated by healthcare leaders (Canadian Interprofessional Health Collaborative [CIHC], 2010; Interprofessional Education Collaborative [IPEC], 2011). References to the importance of conflict resolution can be found in the vast majority of these team training programs and theoretical frameworks (AHRQ, 2008; CIHC, 2010; IPEC, 2011). In addition, these team training programs and frameworks have demonstrated a broad
recognition that resolving conflict is an essential component of team effectiveness and reportedly has led to an increase in patient safety and quality outcomes (AHRQ, 2008; CIHC, 2010; IPEC, 2011). However, the purpose of these training programs and theoretical frameworks has been to present an overview of all the domains of interprofessional collaboration rather than to provide an in-depth analysis of any one construct, such as conflict resolution. Therefore, an in-depth analysis is necessary to explain and expand the complex, multifaceted domain of conflict resolution. To begin to fully understand the impact of effective conflict resolution among interprofessional healthcare teams, an extensive review of the research literature was conducted which identified five general topics: (a) causes and types of conflicts that occur in healthcare, (b) conflict resolution strategies employed by healthcare professionals, (c) communication skills essential in resolving conflict, (d) the value of problem-solving ability in resolving conflict, and (e) conflict resolution education and training among healthcare professionals.

Causes and Types of Conflict

In the research literature, many studies have been conducted investigating the causes of conflict that occur within interprofessional collaborative healthcare teams. Several of these causes have been identified as high levels of stress, role confusion, and problems with hierarchical organizational structures (Goodyear, 2006; Tordorva & Mihaylova-Alakidi, 2010; Spears, 2005). Additional causes of conflict include the wide disparity in knowledge, power, and control among healthcare professionals (Mayer, 2000). However, the most widely reported cause of conflict in healthcare appears to be
lack of communication among healthcare professionals (IOM, 2003; Gerardi, 2010; Goodyear, 2006).

Types of conflict that occur within collaborative teams also have been discussed in the research literature. These types of conflict include interpersonal conflict, task conflict, relational conflict, role conflict, goal conflict, intragroup conflict, and intergroup conflict (Goodyear, 2006; Spears, 2005; Tordorva & Mihaylova-Alakidi, 2010). In several studies, researchers have suggested that depending on the type of conflict, healthcare professionals may choose to handle conflicts differently. For example, when healthcare professionals encounter relational conflicts, they often engage in avoidance behavior, but when healthcare professionals encounter task conflicts, they often attempt to find a resolution (AHRQ, 2010; Jehn, 1995). Much research has been dedicated to understanding the causes of conflict that occur in healthcare settings; however, there is little agreement among scholars about the most effective approach to use when resolving the various types of conflict that occur among healthcare teams.

**Conflict Resolution Strategies**

To further explore the most effective approach that healthcare professionals’ should take when resolving conflict, a review of the literature on conflict resolution strategies was conducted. Conflict resolution strategies frequently have been defined as the conflict resolution behaviors individuals employ when faced with conflict. According to Blake and Mouton (1964), the strategies or behaviors individuals employ when faced with conflict are dependent upon their degree of concern for self versus their degree of concern for other parties. Thomas and Kilmann (1974) expanded upon this theory by
creating a tool to measure five conflict resolution behaviors, or strategies: (a) compromising, (b) competing, (c) avoiding, (d) collaborating, and (e) accommodating.

Research scholars have used this tool to determine whether correlations exist between conflict resolution strategies and specific healthcare disciplines (e.g., nursing, medicine, counseling, etc.) (Brown et al., 2011; Hendel, Fish, & Berger, 2007; Leever et al., 2010; Skjorshammer, 2001; Todorova & Mihaylova-Alakidi, 2010). Results from these studies have been inconsistent in determining whether members of one discipline (e.g., nursing) consistently prefer one particular strategy, such as compromising, when resolving conflict (Brown et al., 2011; Hendel, Fish, & Berger, 2007; Leever et al., 2010; Skjorshammer, 2001; Todorova & Mihaylova-Alakidi, 2010). Some studies have suggested that healthcare professionals most frequently choose avoidance as a strategy in order to prevent the possibility of harm to patients (Skjorshammer, 2001); however, other studies have suggested that healthcare professionals who desire expediency most frequently choose compromise as a strategy (Hendel, Fish, & Berger, 2007). Additional researchers have examined conflict resolution strategies chosen by healthcare professionals and attempted to correlate the results with gender. Results indicated that males generally scored highest on the “dominating” conflict handling behavior scale, whereas females scored highest on the “avoidance” conflict handling behavior scale (Brewer, Mitchell, & Weber, 2002; Marshall, 2006).

**Communication Competence**

The research literature is clear that communication is a central component of healthcare professionals’ ability to resolve conflict (Marshall & Robson, 2005; Sargent, MacLeod, Murray, 2011). In fact, according to Runde and Flanagan (2010), team
members must possess effective communication skills in order for a team to be conflict-competent. However, there has been little agreement among scholars about which specific communications skills (e.g., active listening, empathy, etc.) are required to resolve conflict effectively (AHRQ, 2008; Gerardi, 2010; Porta, 2006; Runde & Flanagan, 2010; Seren & Ustun, 2008; Taylor et al., 2008). In addition, there have been very few empirical studies providing evidence of the reliability and validity of the recommended communication skills.

Despite the fact that there has been little agreement about which specific communication skills contribute most to effective conflict resolution, assessing communication competence has been rigorously studied in the research literature. Communication competence is “an impression or judgment formed about a person’s ability to manage relationships in communication settings” (Rubin & Martin, 1994, p. 33). According to Schirmer et al. (2005), assessing communication competence has become a major priority of medical, educational, policy, and licensing organizations in the United States and Canada. In fact, communication competence is one of six required competencies of the Accreditation Council on Graduate Medical Education (2004).

Opportunely, Rubin and Martin (1994) created the Interpersonal Communication Competence Scale (ICCPS) (1994), which is a self-report scale that measures 10 evidenced-based dimensions of communication competence. The dimensions of the scale include the following: self-disclosure, empathy, social relaxation, assertiveness, altercentrism, interaction management, expressiveness, supportiveness, immediacy, and environmental control. While not specific to conflict resolution, Rubin and Martin (1994) have explained that these dimensions measure the entire construct of communication.
competence, whereas previous scales have measured only one dimension of communication competence, such as assertiveness.

However, some scholars have suggested that communication competence alone is not enough to enable an individual to resolve conflicts effectively. In fact, according to Krauss and Morsella (2000), “Good communication skills can establish understanding, but beyond this, good communication skills can do little to change the state of affairs or sway the outcome of a conflict based on irreconcilable goals” (p. 143).

**Problem-Solving Ability**

According to Weitzman and Weitzman (2000), problem-solving ability allows for a deliberate process to be employed when resolving conflict (Weitzman & Weitzman, 2000). In addition, problem solving has been shown to help individuals move away from a negative emotional investment in their position associated with a conflict (e.g., anger or a desire for revenge) and shifts emotional energies more towards finding a successful resolution (Weitzman & Weitzman, 2000). Several important aspects of the ability to solve problems have been discussed in the research literature, including the following: the definition of problem solving, the theory behind problem solving, the process of solving a problem, and the assessment of problem-solving ability.

According to D’Zurilla and Goldfried (1971), problem-solving ability can be defined as the “the self-directed cognitive-behavioral process by which individuals, couples, or groups attempt to identify or discover effective solutions to a specific problem” (p. 12). This definition helps explain the interactive nature of problem solving, which is supported by the social problem-solving theory (D’Zurilla, Nezu, & Maydeu-Olivares, 1982). According to D’Zurilla, Nezu, and Maydeu-Olivares (1982), social
problem solving is the process of problem solving as it occurs in the natural environment (i.e., the real world).

Another aspect of problem-solving ability is the process of actually solving a problem. For example, according to Gordon (1962), the problem-solving process should consist of the following six steps: (a) define the problem, (b) generate possible solutions, (c) evaluate the solutions, (d) decide on mutually acceptable solutions, (e) implement the solution, and (f) evaluate the solution. However, Deutsch and Coleman (2000) have theorized that problem solving consists of two fundamental processes: (a) identifying the problem and (b) developing alternative solutions to solve the problem. While different researchers and theorists have disagreed about the specific steps of the problem-solving process, the idea that resolving a conflict is much like solving a problem—i.e., that it requires a step-by-step process—has been consistent in the research literature (Armour-Thomas & Hayes, 1988; Bulleit, 2006; Deutsch & Coleman, 2000; Gordon, 1962).

Assessing the ability to solve problems also has been discussed in the research literature. A measurement tool that has shown evidence in the research literature of reliability and validity is the Social Problem-Solving Inventory (D’Zurilla & Nezu, 1990). The Social Problem-Solving Inventory consists of two major scales: the problem-orientation scale and the problem-solving skills scale. Other problem-solving measurement tools have been discussed in the research literature; however, most are specific to the population under investigation, such as diabetic youth (Social Problem Solving for Diabetic Youth (SPSDY) (Thomas, Peterson, & Goldstein, 1997) or adolescents in middle school (Problem-Solving Measure for Adolescents (DPSMA) (Cook, Aikens, Berry, & McNabb (2001). The research literature has provided sufficient
rationale warranting further investigation into the value of problem-solving ability when healthcare teams resolve interprofessional conflicts.

**Conflict Resolution Education and Training**

The research literature has provided evidence that conflict resolution education and training is an important component of helping healthcare teams learn to resolve conflict effectively (Gerardi, 2003, 2010; Marshall & Robson, 2005; Porter-O’Grady, 2004; Zweibel, Goldstein, Manwaring, & Marks, 2008). Benefits of conflict resolution education and training include safer patient environments, improvements in quality of care, and self-reported gains in self-confidence to solve problems (Kressel et al., 2002; Marshall & Robson, 2005; Zweibel, Goldstein, Manwaring, & Marks, 2008). In addition, conflict resolution workshops have been shown to result in more positive outlooks about conflict, improved ability to apply conflict resolution skills, and increased awareness of the importance of problem solving (Zweibel, Goldstein, Manwaring, & Marks, 2008). Conversely, when healthcare professionals are not taught to resolve conflicts, overall team performance is negatively affected (Fargoson & Haddock, 1992; Shapario & Dempsy, 2008).

Areas of concern among scholars investigating the education and training of healthcare professionals and students have included the following: inconsistencies in teaching and learning strategies, few studies demonstrating outcomes of training, and discrepancies in elements of curricula that should be included in training sessions (Dewitty, Osborne, Friesen, & Rosenkrantz, 2009; Porter O’Grady, 2004; Zweibel, Goldstein, Manwaring, & Marks, 2008). Teaching strategies discussed in the research literature are diverse and include workshops, seminars, courses, and anecdotal peer-to-
peer education (Dewitty, Osborne, Friesen, & Rosenkrantz, 2009; Gerardi, 2010; Stockwell, Pollack, Turenne, & Slonim, 2005). Problematic is that little outcome research has been conducted to determine which teaching strategy results in positive learning outcomes.

The elements of curricula considered relevant in a conflict resolution education program are also diverse among conflict resolution experts. Some experts have advised focusing the training on communication skills (Gerardi, 2010; Runde & Flanagan, 2010), while other scholars have emphasized the importance of following the steps of a problem-solving process to achieve conflict resolution (Deutsch, 2000; Porter-O’Grady, 2004). Online conflict resolution training programs that focus on reconciliation, negotiation, and peacekeeping are also available to healthcare professionals (Zweibel, Goldstein, Manwaring, & Marks, 2008).

Unfortunately, few studies have reported on the student learning outcomes of these varying educational models; however, one research study assessed the impact of a conflict resolution workshop. The curricula included experiential and active learning to introduce a conflict resolution framework; results indicated that the learners gained a more positive outlook on conflict, their own ability to solve problems, and their ability to apply conflict resolution skills (Zweibel, Goldstein, Manwaring, & Marks, 2008). Additional research is needed to clarify which conflict resolution teaching and learning strategies result in the best learner outcomes.

Statement of the Problem

While most research on conflict resolution has been conducted on topics that describe the causes and types of conflict and the conflict resolution behaviors of
healthcare professionals, research conducted on components of actual ability to resolve conflict, such as communication competence, problem-solving ability, and conflict resolution education and training, have been limited. This limited research could be due to the research challenges that present themselves when researchers attempt to be present when an authentic conflict occurs as well as challenges related to the Hawthorne effect. However, assessing healthcare professionals’ perception of their ability to resolve conflict (i.e., their conflict resolution self-efficacy) provides a valid and realistic method for understanding a fundamental aspect of conflict resolution. According to Bandura's (1977) theory of self-efficacy, perceptions influence activity preference, task perseverance, effort expended, and ultimately the degree of success achieved. In addition, numerous studies have identified self-efficacy as a strong predictor of ability (Bandura, 1977; Bandura, 1986; Bandura, Reece, & Adams, 1982; Multon, Brown, & Lent, 1991; Pajares & Miller, 1994; Schunk, 1984; Stajkovic & Luthans, 1998; Wang & Wang, 2008).

Although investigating perceived ability to resolve conflict provides a realistic and valid method to study this concept, to date, this methodology has not yet been employed. Scientific inquiry investigating healthcare professionals’ perceptions of their ability to resolve conflict is needed to provide foundational knowledge about this important component of interprofessional teams. Research scholars have identified the devastating results that occur when healthcare teams are not educated about how to resolve conflict, such as serious injury and even death to the patients’ healthcare providers serve (AHRQ, 2008; Dugan et al., 1996). Research should be conducted in the service of expanding this critical area of interprofessional education and collaborative
practice so that unnecessary errors resulting from the inability of interprofessional healthcare teams to resolve conflicts may be avoided.

**Purpose of the Study**

The purpose of this study was to investigate three central components found in the literature to influence healthcare professionals’ self-efficacy to resolve conflicts that occur among interprofessional collaborative teams. More specifically, the purpose of this study was to investigate the relationship between the three central components of conflict resolution and healthcare professionals’ perceived ability to resolve conflicts. The three central components include (a) communication competence, (b) problem-solving ability, and (c) education and training. In addition, the purpose of this study was to investigate the predictive ability of the three central components of conflict resolution and healthcare professionals’ self-efficacy in resolving conflicts that occur within interprofessional collaborative teams.

**Research Questions**

This research study was guided by the following seven research questions:

1. To what extent do healthcare professionals report self-efficacy in resolving conflicts within collaborative healthcare teams?
2. To what extent do healthcare professionals report their communication competence, problem-solving ability, and adequacy of conflict resolution education and training?
3. Do conflict resolution self-efficacy scores differ among healthcare professionals based on demographic characteristics?
4. Is there a statistically significant relationship between communication competence and healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams?

5. Is there a statistically significant relationship between problem-solving ability and healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams?

6. Is there a statistically significant relationship between education and training and healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams?

7. Can healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams be predicted by communication competence, problem-solving ability, and/or conflict resolution education and training?

Research Methodology

This study employed a quantitative, exploratory, non-experimental, cross-sectional survey design to examine the relationship between (a) components shown in the literature to be important when resolving conflicts and (b) healthcare professionals’ self-efficacy to resolve conflicts that occur among collaborative teams. Constructs investigated included communication skills, problem-solving skills, and conflict resolution education and training. Data was collected using an online survey (i.e., Qualtrics). The researcher utilized descriptive statistics, analysis of variance (ANOVA), correlational analysis, and a multiple regression procedure to analyze the data.

Data was collected at the Collaborating Across the Borders (CAB) IV Interprofessional Conference held June 12 to June 14, 2013, in Vancouver, British
Columbia. This conference has attracted more than 700 international healthcare professionals from a wide variety of disciplines. The conference committee sent an email to conference registrants 1 to 1.5 weeks prior to the conference inviting conference attendees to complete an optional online questionnaire. A website link was included in the e-mail directing willing participants to the online questionnaire. The researcher also sent a follow-up email to all registrants 2-3 weeks after the conference concluded. In addition, an email request with the survey link was sent to members of the Society for Simulation in Healthcare (SSH). The SSH listserv encountered technical difficulties at the time the request was sent and it is the belief of the researcher that the survey link did not reach its intended audience.

**Significance of the Study**

This study aimed to contribute both to professional research literature and healthcare team practice. This study’s contribution to the professional research literature occurred through the analysis and syntheses of past and present research on conflict resolution within healthcare teams. In addition, this study contributed to the self-efficacy literature by expanding research on the role of self-efficacy in resolving conflict within collaborative healthcare teams.

This study also contributed to a better understanding of healthcare teams by exploring influences on healthcare professionals’ confidence in resolving conflict. There has been little direction from the research literature to guide the development of evidenced-based curricula that focuses on resolving conflicts within collaborative teams. In response, this study contributed to the practice of healthcare educators in academic
settings by providing information and recommendations that academicians can use to better understand how to design curriculum that focuses on conflict resolution.

**Delimitations**

This study has been delimited to (a) healthcare professionals and (b) to one venue for data collection. First, the researcher chose to focus on conflict resolution only among healthcare professionals as opposed to all professionals who may experience conflicts working within interprofessional collaborative teams. The purpose of this delimitation was to manage the depth and breadth of the investigation and to explore a specific domain (i.e., healthcare) in which a meaningful contribution could be made. In addition, there has been an ongoing and deliberate effort in healthcare education and practice to teach students and healthcare professionals how to work in teams (Agency for Healthcare Quality, 2008), thereby making the study of healthcare professionals particularly relevant to the population under investigation.

Secondly, participation in the study was delimited to healthcare professionals who registered to attend the Collaborating Across Borders (CAB) IV Conference in June, 2013, and healthcare professionals who are members of the Society for Simulation in healthcare. CAB IV Conference venue was selected as the data-collection site because attendees typically include healthcare professionals who work in a variety of healthcare settings within multiple disciplines. The delimitation of an interprofessional conference venue and to listservs consisting of healthcare professionals from professional organizations made recruitment of participants much more feasible. Because the purpose of this study was to investigate factors that facilitate conflict resolution among members
of interprofessional healthcare teams, the CAB IV conference provided a venue that attracted healthcare professionals who likely work in collaborative healthcare teams.

**Assumptions**

The researcher made several assumptions during the design of this research study. First, the researcher assumed that survey participants would be able to understand all of the survey items. Secondly, the researcher assumed that all participants responded honestly to all questionnaire items. The questionnaire contained items regarding participants’ self-efficacy about their ability to resolve conflicts within collaborative healthcare teams, and truthful answers are required to ensure accurate results.

**Limitations**

This research study was limited in several important aspects. One limitation was that the response rate (i.e., the number of conference registrants responding to the survey divided by the total number of conference registrants invited to participate) was lower than expected due to lack of time or interest in participating. Low response rates can limit the sensitivity of the study to detect statistically significant results and potentially jeopardize its external validity (Polit & Beck, 2010). As a way to address this limitation and attempt to collect as many responses as possible, the researcher sent e-mail reminders to potential participants after the conference ended.

Secondly, because a survey instrument was used for data collection, there was a risk of social desirability response bias. According to Polit and Beck (2010), research participants may sometimes misrepresent their attitudes by responding to questionnaire items in ways that are consistent with current socially acceptable views. In this study, healthcare professionals may have found it more socially acceptable to portray
themselves as having a high degree of confidence in their ability to resolve conflicts and thus responded inaccurately to questionnaire items related to self-efficacy about their ability to resolve conflicts within collaborative teams.

Third, there was a potential for sampling bias. According to Polit and Hungler (1989), sampling bias refers to “systematic overrepresentation or underrepresentation of some segment of the population in terms of a characteristic relevant to the research question” (p. 170). In this study, CAB IV attendees who chose to participate in this research study may have been more experienced in resolving conflict and therefore may have been more willing to complete the questionnaire than other attendees who did not complete the questionnaire. A sampling bias may have led to some erroneous conclusions (Polit & Beck, 2010).

**Definition of Terms**

For the purposes of this study, the following definitions of relevant terms were used:

*Communication competence:* An impression or judgment formed about a person’s ability to manage relationships in communication settings (Rubin & Martin, 1994).

*Conflict:* Any situation in which interdependent people have apparently incompatible goals, interests, principles, or feelings (Runde & Flanagan, 2008).

*Conflict resolution:* A comprehensive term implying that deep-rooted sources of conflict are addressed and transformed (Ramsbotham, Woodhouse, & Miall, 2011).

*Interprofessional collaborative healthcare teams:* Healthcare professionals from different disciplines who, as a team, coordinate individual actions; cooperate in planning
and working together; and share in setting goals, planning activities, solving problems, making decisions, and clarifying responsibilities (Baggs & Schmitt, 1988).

_Problem-solving ability:_ The self-directed cognitive-behavioral process by which individuals, couples, or groups attempt to identify or discover effective solutions to a specific problem (D’Zurilla & Goldfried, 1971).

_Self-efficacy:_ the belief in one’s capabilities to organize and execute the courses of action required to manage prospective situations (Bandura, 1977).

_Team conflict:_ Disagreements or disputes that occur when individuals or members within a group recognize significant differences in goals, values, or needs (Dewitty, Osborn, Friesen, & Rosenkranz, 2009).

**Organization of the Study**

This dissertation study is organized in five chapters. Chapter 1 provides background information about conflict resolution among interprofessional collaborative teams, the statement of the problem, and the purpose of the study. In addition, Chapter 1 presents the research questions, an overview of the research design, the significance of the study, delimitations, assumptions, limitations, and definition of terms.

Chapter 2 presents a comprehensive review of the literature related to conflict resolution within collaborative healthcare teams. This chapter presents research about the causes of conflict within collaborative healthcare teams, types of conflict within collaborative healthcare teams, and conflict resolution behaviors. Chapter 2 also summarizes and synthesizes research about the three central components found in the literature to influence healthcare professionals’ conflict resolution self-efficacy:
communication competence, problem solving ability, and conflict resolution education and training.

Chapter 3 presents an overview of the research methodology. This chapter includes background information that informs the study, the problem statement, the purpose of the study, the research questions, the significance of the study, and a detailed description of the research design. Chapter 4 presents the results of the study. This chapter includes background information, a summary of the methods, and a detailed report of the results of the data analysis. The dissertation concludes with chapter 5. Chapter 5 presents an overview of the study, a discussion of the findings, implications for education and practice, and recommendations for further research.
Chapter 2

Literature Review

Introduction

Conflict in healthcare is prevalent, destructive when not effectively resolved, and frequently overlooked as a cause of medical errors (Decker, Wheeler, & Johnson, 2001; Handel, Fish, & Berger, 2007; Institute of Medicine, 2000; Kritek, 2002; Marshall & Robson, 2005; Spears, 2005; Goodyear, 2006). Marshall and Robson (2005) reported that conflict in healthcare institutions creates a serious threat to patient safety. In fact, in July 2008, the Joint Commission issued a sentinel event alert declaring that ineffective management of conflict is one of the top three causes of unexpected incidents that result in death or injury to patients across the United States (Dugan et al., 1996). In addition, a study of 858 nurses found that among the participants, more than half affirmed that conflict is a common occurrence in their workplace and that conflict can cause unhealthy behaviors leading to poor patient outcomes (Dewitty, Osborne, Friesen, & Rosenkranz, 2009). Moreover, researchers found in a national survey of 6,106 medical residents that residents who reported conflict with at least one other professional engaged in a higher percentage of medical errors and adverse outcomes than the residents who reported no conflict with other professionals (Baldwin & Daugherty, 2008).

In response to the urgent need to increase patient safety, national interprofessional competency frameworks and team training programs have been developed and are currently being disseminated through national conferences, webinars, and online training opportunities (Agency for Healthcare Quality and Research [AHRQ], 2008; Canadian Interprofessional Health Collaborative [CIHC], 2010; Interprofessional Education
Collaborative [IPEC], 2011). The inclusion of conflict resolution in these influential, overarching guides to interprofessional education and practice may be due to the fact that conflicts, and often diversity, are part of the very nature of team functioning (Kane, 1983). According to Goodyear (2006), healthcare is a “humanistic enterprise” and requires high levels of teamwork in order to avoid the detrimental effects of unresolved conflict.

In addition to the most serious consequences (i.e., injury and death) of unresolved conflict, researchers also have reported a variety of problematic issues that arise as a result of conflict among collaborative healthcare teams: a decrease in overall team performance, a reduction in job satisfaction, a decrease in organizational growth, and a decrease in productivity (De Dreu & Weingart, 2003; Fargoson & Haddock, 1992). Furthermore, unresolved conflict can escalate into destructive social, personal, and professional behavior (Stuart & Sundeen, 1995) because, as Gerardi (2010) explained, unresolved conflict among collaborative healthcare teams creates a culture that promotes competition, “quick fixes,” hot tempers, and avoidance tactics.

Even though conflict can be damaging, research has shown that not all conflict is considered detrimental within healthcare organizations. According to Deustch’s theory of constructive conflict management, conflict presents an opportunity to improve work performance (Hesketh, Duncan, & Estabrooks, 2003). Goodyear (2006) has explained that discord can be viewed as a source for development when various tactics and conflict management strategies are employed. In fact, Goodyear suggested that well-managed conflict can become a vehicle for growth, lead to strategic decision making, and improve performance and work satisfaction.
While effective conflict resolution within the healthcare environment can result in positive outcomes, several barriers unique to the healthcare industry have hindered efforts to resolve conflicts effectively among collaborative healthcare teams. Studies have indicated that lack of time, lack of training, and fear of causing emotional discomfort are a few of the primary barriers that prevent effective conflict resolution among healthcare professionals (Brown et al., 2011; Marshall & Robson, 2005; Gerardi, 2010). For example, a typical day for individuals working in the healthcare profession inevitably requires coordinating resources, providing care, performing procedures, gathering data, integrating information, responding to emergencies, and solving problems with diverse groups of people (Gerardi, 2003). This complex and sophisticated, yet frenzied, work environment leaves little time for effective conflict resolution to occur.

Another important barrier that has prevented effective conflict resolution among collaborative healthcare teams is that few formal mechanisms are available to healthcare professionals when they are faced with conflict and would like to seek assistance. According to the American Hospital Association, most hospitals do not have an Ombuds office or mediators available to assist healthcare professionals (Kressel, Kennedy, Lev, Taylor, & Hyman 2002). In addition, most hospitals lack a process for managing conflict in a non-adversarial way (Slaikeu, 1989). In fact, the only available resources to facilitate conflict resolution have included (a) bioethics committees, which primarily assist in resolving end-of-life disputes, and (b) labor-management contracts, which primarily assist with disagreements about wages and benefits and workplace environments (Kressel et al., 2002). According to Skjorshammer (2001) and Leever et al. (2010), the lack of resources available for effectively resolving the numerous types of
conflicts that occur on a daily basis in healthcare environments across the United States has perpetuated the tendency to avoid conflict altogether.

**Causes of Conflict Among Healthcare Teams**

Suggested causes of conflict in healthcare teams are diverse and widespread. According to Altun and Argon (2011), “Conflicts in healthcare emerge by factors such as personality structure of individuals, personal experiences, adopted values, attitudes and behaviors, and differing expectations” (p. 724). Researchers also have mentioned that high levels of stress, role confusion, and hierarchical organization structures can lead to conflict among healthcare teams (Spears, 2005; Goodyear, 2006; Tordorva & Mihaylova-Alakidi, 2010). Mayer (2000) has further explained that the wide disparity of knowledge, power, and control among healthcare professionals cultivates and exacerbates conflict even further by creating threatening, unsafe environments.

However, the most widely researched cause of conflict among collaborative healthcare teams seems to be lack of communication among healthcare professionals (Gerardi, 2010; Goodyear, 2006; IOM, 2003). According to the Institute of Medicine (2003), “When healthcare professionals understand each other’s roles and are able to communicate and work together effectively, patients are more likely to receive safe, quality care” (p. 2). Naturally, then, when healthcare professionals fail to understand each other’s role and fail to work together collaboratively, conflict results, and patient care suffers (Baldwin & Daugherty, 2008). Marshall and Robson (2005) explained that fear, anxiety, and mistrust are due to unacknowledged and unresolved conflict which creates and perpetuates unsafe healthcare environments. These unsafe environments can reduce the confidence that healthcare professionals have in the organizations for which
they work, and ultimately they can reduce the confidence that healthcare professionals have in their own ability to be successful.

Another frequently cited cause of conflict suggested in the research literature has been labeled hierarchical conflict (Tordorva & Mihaylova-Alakidi, 2010). According to Tordorva and Mihaylova-Alakidi (2010), a prerequisite for conflict is a workplace situation in which colleagues occupy positions of varying status within a hierarchy. Status differences may contribute to conflict when individuals in disciplines with a perceived lower status conform to the desires of individuals in disciplines with a perceived higher status, especially when this conformity is the result of the belief that the abilities of individuals in lower-status positions are not as important as the abilities of those in higher-status positions (Nason, 1983; Sands, Stafford & McClelland, 1990). This hierarchical inequality also prevents teams from functioning democratically, and reduces cooperation, cohesion, and effectiveness in the workplace (Mailick & Ashley, 1981).

Similar to a military model, the healthcare profession is structured based on a status hierarchy among employees. Traditionally, medical doctors have occupied the highest level of authority within healthcare environments because they have ultimate control over decisions about how best to care for patients. Goodyear (2006) has stated that physicians are often viewed as “authoritarian, superordinate, autonomous and as privileged guests amongst employees” (p. 9). Interestingly, in a qualitative study of 29 Norwegian healthcare professionals, clinicians (other than physicians) considered conflicts with physicians the most distressing type of conflict (Skjorshammer, 2001). Kressel et al. (2002) offered an explanation for this finding and suggested that conflicts
occur more frequently with doctors because “physicians have so much power that they often try to impose their wishes on staff members or families, sometimes in ways that not only create tensions but also compromise patient care” (p. 364). According to Kressel et al., this type of attempted domination has been referred to in healthcare settings as the “God syndrome”.

Additional support for the idea that conflict with physicians occurs because of their authority can be found in a study exploring hierarchical conflict (Porter-O’Grady, 2004). According to Porter-O’Grady, physicians are at the top of the hierarchical decision-making process that exists in most healthcare settings, and based on this assumption, they tend to occupy leadership roles. As a result, conflicts are resolved either effectively or ineffectively depending upon each physician's personal disposition towards the conflict. Skjorshammer (2001) also reported that healthcare professionals avoid conflict in order to prevent harm to their reputation and to facilitate potential career advancements. Skjorshammer noted that physicians, in particular, perceived conflicts as embarrassing and as situations that arise mainly due to personality factors and not situational issues (Skjorshammer, 2001).

According to Porter-O’Grady (2004), “Leaders create the context for organizational behavior and effective processes; they must recognize that their own behaviors in the presence of conflict set the tone for how the organization approaches conflict situations” (p. 183). Alarmingly, Skordhammer (2001) found that hospital leaders ascribe conflict resolution a low priority because they feel their own ability to resolve conflict successfully is inadequate. This finding, coupled with the notion that hospital leaders set the tone for approaching conflict resolution, helps explain why
conflict in the healthcare environment is so often avoided. The literature is clear that (a) healthcare professionals, as a rule, have not been sufficiently educated about how to resolve conflict effectively and that (b) understanding how to develop conflict-competent leaders is critical to the future of healthcare (Gerardi, 2010; Kressel et al., 2002).

**Types of Conflict Among Healthcare Teams**

According to some researchers, conflict among healthcare teams can be placed into one of two types of conflict: (1) interpersonal conflict, and (2) task conflict (Friedman & Tidd, 2002; Tabak & Orit, 2007). Interpersonal conflict has been described as a struggle over the beliefs, values, or views of professional peers (Friedman & Tidd, 2002; Tabak & Orit, 2007). Task conflict has been described as disagreements over daily work issues, such as lab results, staffing needs, or turnaround times for X-rays (Friedman & Tidd, 2002; Tabak & Orit, 2007). Researchers have suggested that interpersonal conflicts are more challenging to resolve than task conflicts because interpersonal conflicts often involve emotional tension, animosity, or annoyance (Jehn, 1995). In addition to creating emotional tension and annoyance, research has suggested that interpersonal conflict also can lead to hostile and harassing behavior in healthcare environments (Agency for Healthcare Research and Quality [AHRQ], 2008). In fact, some sources have advised managers simply to avoid all conflicts that are relational in nature (De Dreu & Weingart, 2003; Jehn, 1995). However Hendel, Fish, and Berger (2007) have warned that any unresolved conflict creates barriers for individuals and teams and ultimately can lead to cultural disintegration.

Compared to interpersonal conflict, research has indicated that task conflicts, on the other hand, provide opportunities for growth and development among team members.
Researchers and conflict resolution experts have agreed that when task conflicts occur in the healthcare environment, healthcare teams should not ignore or avoid them but rather attempt to resolve them (Phillips, 2011; Runge & Flanagan, 2010). For example, Desivilya, Somech, and Lidgoster (2010), and Jehn (1995) have suggested that disagreements about the equitable distribution of resources, work procedures, and workplace policies should be resolved. Methods for resolving task conflicts include (among others) invoking the “two challenge rule,” which requires team members to voice their concerns assertively at least two times to assure that they have been heard by other team members (AHRQ, 2008).

In addition to interpersonal conflict and task conflict, researchers have identified two different types of conflict that occur within teams: *intragroup conflict* and *intergroup conflict*. According to Grymonpre et al. (2008), intragroup conflict occurs among members within subgroups of the same team; however, intergroup conflict occurs between the members of two or more different teams. Research has shown that intragroup conflict often occurs as a result of differing goals (Locke, Smith, Erez, Chan, & Schaffer, 1994) and competing interests (Eisenhardt & Zbaracki, 1992) among team members. In contrast, intergroup conflict often occurs when one group is unclear about another group’s roles and responsibilities and when time frames for completing work assignments are not agreed upon between groups (Shortell & Kaluzny, 1997). Research has suggested that intergroup conflict is more difficult to resolve than intragroup conflict due to the large numbers of individuals typically involved in intergroup conflicts (Shortell & Kaluzny, 1997).
Role conflict and goal conflict are two more types of conflict discussed in the research literature that commonly occur within interprofessional healthcare teams. Role conflict often occurs in healthcare environments because of the overlapping nature of healthcare domains and lack of differentiation between roles (Hendel, Fish, & Berger, 2007). According to the Canadian Interprofessional Healthcare Collaborative (CIHC) (2010), role conflict encompasses accountability issues, role overload, and role ambiguity. Goal conflict, on the other hand, occurs when disagreements arise among professionals about the preferred outcomes as well as how best to provide efficient and effective patient care. According to the CIHC (2008), goal conflicts occur most commonly when team members are guided by dissimilar philosophies or religious beliefs that interrupt effective patient-care activities.

**Conflict Resolution Strategies**

A considerable amount of research has been conducted to understand the conflict resolution strategies that individuals employ. Much of this research has been based on the dual concerns model of conflict resolution created by Blake and Mouton (1964). The dual concerns model (1964) suggests that the behavior of individuals during a conflict depends upon their degree of concern for self versus their level of concern for other parties. Thomas and Kilmann (1974) built on this dual-concerns philosophy but stated that assertiveness (concern for self) is located at one end of the spectrum and that cooperativeness (concern for others) is located at the other end. In the Thomas and Kilmann model, these two dimensions of behavior are then used to define five modes of handling conflict: compromising, competing, avoiding, collaborating, and accommodating (Thomas & Kilmann, 2010).
Based on these five modes of conflict handling behavior (i.e., conflict resolution strategies), the Thomas-Kilmann Conflict Mode Instrument (TKI) (2010) was developed to identify which mode individuals are most likely to use when faced with a conflict. If team leaders understand the preferred conflict-handling modes of each team member, ostensibly they will be prepared to help the team resolve conflict more effectively (Thomas & Kilmann, 2010). Other researchers also have identified additional conflict handling behaviors that individuals employ during conflict, and these researchers have suggested slightly different ways of categorizing these behaviors; interestingly, these models all feature the continuum of concern for self and concern for others as the basis for their structure (Rahmin, 1983; Skorshammer, 2001).

Recently, studies have been conducted using conflict resolution strategies as an assessment tool to better understand how healthcare professionals from different disciplines--e.g., nursing, medicine, allied health--resolve conflict (Hendel, Fish, & Berger, 2007; Todorova & Mihaylova-Alakidi, 2010). Several studies have shown that healthcare professionals, particularly nurses and doctors, often choose to use the strategy of “avoidance” to resolve conflict (Leever et al., 2010; Skjorshammer, 2001). Brown et al. (2011) suggested that the reason healthcare professionals tend to prefer avoidance as a primary mode of conflict resolution is the fear of causing emotional discomfort to individual team members (or the team itself) with whom they are experiencing conflict. Other researchers found that when confronted with conflict, healthcare professionals choose avoidance as a strategy if engaging in the conflict potentially would interfere with safety or effective patient care (Skjorshammer, 2001). In addition, both De Dreu and Van de Vliert (1997) and Nadler and Tushman (1999) found that conflict in teams is
often avoided because healthcare professionals seek to preserve consistency, stability, and harmony within an institution.

However, contrary to findings showing that healthcare professionals most frequently choose to avoid conflict, some studies have shown that the most commonly chosen strategy is compromising (Hendel, Fish, & Berger, 2007). Interestingly, the strategy of compromising falls in the middle along the continuum of concern for self and concern for others (Thomas & Kilmann, 2010). When using “compromise” as a conflict resolution mode, the objective is to find an expedient, mutually acceptable solution that partially satisfies both parties (Thomas & Kilmann, 2010).

One study looked beyond the primary healthcare professions of nursing and medicine and compared the conflict resolution strategies of nursing students and students studying radiologic science and respiratory care (Sportsman & Hamilton, 2007). The researchers found no significant difference in the strategy chosen by members within either discipline. Both groups of students most frequently chose the strategy of compromise, followed by avoidance.

Another area explored in the research literature has been the relationship between gender and conflict resolution strategy. Brewer, Mitchell, and Weber (2002) explored whether gender influences individuals’ conflict handling behavior. Interestingly, these researchers did not consider biological sex (i.e., male, female) as a variable but rather utilized the Bern Sex Role Inventory to determine gender role (masculine, feminine, or androgynous) (Brewer, Mitchell, & Weber, 2002). Researchers in this study found that individuals identified as having a masculine gender role scored highest on the “dominating” conflict handling behavior scale. In contrast, individuals identified as
having a feminine gender role scored highest on the “avoidance” conflict handling behavior scale (Brewer, Mitchell, & Weber, 2002).

Marshall (2006) presented a different perspective on the role gender plays in understanding conflict behaviors among healthcare professionals. Marshall stated that in the area of conflict resolution, women are more likely to turn outward, engaging others in times of stress, whereas men are more likely to turn inward and often react aggressively when experiencing conflict-related stress (Marshall, 2006). These findings support Brewer, Mitchell, and Weber’s (2002) results which indicated that individuals with masculine gender types dominate others by aggressively dealing with conflict-related stress. However, these findings also conflict with Brewer, Mitchell, and Weber’s (2002) findings that feminine gender types avoid conflict. The results of these studies suggest that while it appears that women avoid conflict, they are in fact networking with others to find effective solutions.

Additional research has suggested that gender and conflict resolution modes are correlated. In a study of 345 students at a Turkish university, investigators found that females used more self-disclosure, emotional expression, and avoidance than males did when resolving conflict (Sahin, Basim, & Cetin, 2009). While empirical evidence has demonstrated that women are more likely to use avoidance and network with others during times of conflict, little research has identified whether this approach is effective. Ascertaining what approach is most effective when resolving conflict is non-conclusive in the research literature; however ability to communicate with others seems to be an important aspect of success in resolving conflict.
Communication Competence

According to Mayer (2000), communication is at the very heart of conflict resolution. Krauss and Morsella (2000) have supported this view and add that when faced with conflict, communicating is always the right thing to do. Many research scholars have discussed the importance of communication and collaboration in the resolution of conflict among healthcare teams (Marshall & Robson, 2005; Sargent, MacLeod, Murray, 2011). For example, Siu, Laschinger, and Finegan (2008) have explained that when conflict arises, collaborative problem solving and communication promotes constructive conflict management. In addition, Mayer (2000), has stated that effective communication and positive collaboration often result in successful resolution of differences. The relationship between communication, collaboration, and conflict resolution is not surprising considering that all three are intrinsically cooperative activities that require an exchange of ideas to create meaning (Krauss & Morsella, 2000).

Conversely, research scholars have explained that poor communication in a conflicting situation can lead to a lack of ability to achieve resolution (Krauss & Morsella, 2000; Mayer, 2000; Smith, Tutor, & Phillips, 2001). According to Smith, Tutor, and Phillips (2001), communication during discord that is passive will cause avoidance which will lead to unresolved conflict, and communication during discord that is aggressive will threaten the other party also leading to unresolved conflict (Smith, Tutor, & Phillips, 2001). In a healthcare setting, poor communication creates situation where medical errors can easily occur (O’Daniel & Rosenstein, 2008). In fact, according to the Institute of Medicine Report (1999), between 44,000 and 98,000 people die every
year as a result of medical errors, with communication failure considered the leading cause.

However, research scholars have also demonstrated that effective communication skills among healthcare professionals have been shown to prevent medical errors (Varpio, Hall, Schryer, 2008), increase patient safety (Sargent, MacLeod, Murray, 2011), and improve patient satisfaction and outcomes (Ammentorp, Sabroe, Kofed, & Mainz, 2007). In addition, the research literature has indicated that effective communication skills are essential when resolving conflict among members of healthcare teams (Marshall & Robson, 2005; Sargent, MacLeod, Murray, 2011).

In fact, many experts in conflict resolution incorporate communication skills training into programs designed to educate healthcare professionals about effective ways to resolve conflict (AHRQ, 2008; Gerardi, 2010; Massachusetts Office of Dispute Resolution, 2006; Seren & Ustun, 2008; Taylor et al, 2008). A review of the literature revealed that specific communication skills differ significantly amongst conflict resolution team training programs. A summary of communication skills specific to conflict resolution in teams is provided in Table 1.
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<th>Author</th>
<th>Skills</th>
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<td>Seren and Ustun (2008)</td>
<td>Empathy</td>
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<td>Listening Skills</td>
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<td>Requirement-based Approach</td>
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<td>Social Adaptation</td>
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<td>Anger Management</td>
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<td>Porta (2006)</td>
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<td>Feeding Back, Summarizing, and Reframing</td>
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<td>Managing Anger, Emotion, and Rational Detachment</td>
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<td>Brainstorming and Option Generating</td>
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<td>Taylor et al. (2008)</td>
<td>Basic Assertion</td>
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<td>Empathetic Assertion</td>
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<td>Repetition</td>
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<td>Clarification</td>
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<td>Active Listening</td>
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<td>Integration and Summarizing</td>
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<td>Gerardi (2010)</td>
<td>Being Present in the Moment</td>
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<td>Listening for Understanding</td>
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<td>Mutuality</td>
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<td>Openness</td>
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<td>Reflection</td>
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<td>AHRQ (2008)</td>
<td>Two-challenge Rule</td>
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<td>DESC Script: Describe situation, Express concerns, Suggest alternatives, State consequences</td>
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<td>Runde and Flanagan (2010)</td>
<td>Trust and Safety</td>
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<td>Behavioral Integration</td>
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<td>Emotional Intelligence</td>
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<td>Reflective Thinking</td>
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While the majority of skills sets in Table 1 were specifically identified to teach communication skills in the context of conflict resolution, not all skill sets have undergone rigorous psychometric testing to provide evidence of validity and reliability. According to Krauss and Morsella (2000), the irrefutable role of communication in the process of resolving conflict seems so obvious that the evidence is rarely given serious examination. Problematically, over fifty skills were found in the research literature as pertinent to resolving conflict (AHRQ, 2008; Gerardi, 2010; Porta, 2006; Runde and Flanagan, 2010; Seren & Ustun, 2008; Taylor et al., 2008), with very few providing evidence of empirical testing. In addition to the lack of psychometric testing, there are so many skills discussed on the research literature it is difficult to ascertain which skills are actually necessary for effective conflict resolution to occur.

However, a pragmatic approach to understanding communication and its role in conflict resolution in healthcare is to consider the term communication competence. Communication competence has been defined as the knowledge and ability to be

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<th>Rubin and Martin (1994)</th>
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<td>Perspective Taking</td>
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responsive and manage self-awareness during the process of talking and listening (Schirmr et al., 2005). According to Schirmer et al., (2005), assessing communication competence has become a major priority of medical educational, policy, and licensing organizations in the United States and Canada. In fact, communication competence is one of six required competencies of the Accreditation Council on Graduate Medical Education (2004).

Multiple instruments have been developed and tested to assess the communication competence of medical students and physicians (Schirmer et al., 2005), however most are in the context of interactions with patients and therefore not specific to conflict resolution among members of healthcare teams. A search for a tool designed to measure the communication competence of healthcare professionals specifically in the context of healthcare teams was unsuccessful. However, Rubin and Martin (1994) created the Interpersonal Communication Competence Scale (ICCPS) (1994), which is a general scale that measures 10 evidenced-based dimensions of communication competence. The dimensions of the scale include the following: self-disclosure, empathy, social relaxation, assertiveness, altercentrism, interaction management, expressiveness, supportiveness, immediacy, and environmental control. While not specific to conflict resolution, Rubin and Martín (1994) have explained that these dimensions measure the entire construct of communication competence whereas previous scales have measured only one construct of communication competence such as assertiveness.

The ability to communicate competently is an essential component of effective conflict resolution and understanding the dimensions of this component is instrumental in determining the influences of healthcare professionals’ ability to resolve conflicts that
occur in interprofessional teams. However, according to Krauss and Morsella (2000), “the fruit of communication is to establish understanding, but beyond this communication can do little to change the state of affairs or sway the outcome of a conflict based on irreconcilable goals” (p. 143). Therefore, the next section will discuss the role of problem solving ability and conflict resolution.

**Problem Solving Ability**

In addition to communication competence, problem solving ability is another area widely discussed in the conflict resolution literature (Armour-Thomas & Hayes, 1988; Carson & Runco, 1999; Deutsch & Coleman, 2000). According to Weitzman and Weitzman (2000), problem solving is an essential component of the cooperative conflict resolution process. In fact, in a study of 232 college students, problem-solving skills were found to be the strongest predictor of individuals’ ability to handle challenges (Largo-Wright, Peterson, & Chen, 2005). Additional research studies have found that collaborative problem solving in a healthcare setting has led to the constructive management of conflicts (Laschinger, Almost, & Yuer-Hodes, 2003; Siu, Laschinger, & Finegan, 2008). It is clear in the research literature that the ability problem solve is beneficial when resolving conflict; however understanding the dynamics of the ability to problem solve needs further exploration.

Problem solving ability has been defined as the “the self-directed cognitive-behavioral process by which individuals, couples, or groups attempt to identify or discover effective solutions to a specific problem (D’Zurilla & Goldfried, 1971, p.12). This definition helps explain the social nature of problem solving and the importance of working with others to achieve a mutually acceptable solution. Other scholars emphasize
the cognitive nature of problem solving defining problem solving ability as a mental process that involves control and activation of neurons in the prefrontal cortex of the brain (Largo-Wight, Peterson, Chen, 2005; Mayer, 1992). This definition highlights the individual nature of problem solving emphasizing the intellectual thought process behind finding solutions to problems.

To further explain the concept of problem solving ability, D’Zurilla, Nezu, and Maydeu-Olivares (1982) developed the social problem solving theory. The three major components of the social problem solving theory include: (a) problem solving (b) problem, and (c) solution (D’Zurilla, Nezu, & Maydeu-Olivares, 1982). A “problem,” according to D’Zurilla, Nezu, and Maydeu-Olivares (1982), is defined as “any life situation or task that demands a response for adaptive functioning but no effective response is immediately apparent or available” (p. 12). These authors have defined “solution” as a “situation-specific coping response or response pattern that is the product or outcome of the problem-solving process when it is applied to a specific problematic situation” (D’Zurilla, Nezu, & Maydeu-Olivares, 1982, p. 13). According to this theory, social problem solving is “the process of problem solving as it occurs in the natural environment or real-world” (D’Zurilla, Nezu, & Maydeu-Olivares, 1982, p. 202). This theory helps further the understanding of problem solving and its role in resolving conflicts.

Understanding the dynamics of ability to problem solving is essential, however the process an individual must follow to actually resolve a conflict using a problem solving approach is another important aspect of problem solving. For example, according to Deutsch and Coleman (2000), problem solving consists of two fundamental processes:

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(a) identifying the problem, and (b) developing alternative solutions to solve the problem. However, Bulleit (2006) has suggested that five processes should be followed when problem solving through a conflict, the steps include: (a) define the problem, (b) gather the data, (c) analyze the data, (d) choose the best solution, and (e) implement the solution. Moreover, Armour-Thomas and Hayes (1988) have suggested that the skill of problem solving a conflict requires the following six steps: (a) plan, (b) organize, (c) take action, (d) evaluate, (e) adapt, and (f) summarize. Lastly, Gordon (1962) has stated the problem solving process should consist of the following six steps: (a) define the problem, (b) generate possible solutions, (c) evaluate the solutions, (d) decide on mutually acceptable solutions, (e) implement the solution, and (f) evaluate the solution. While the specific steps differ, the concept that resolving a conflict is much like solving a problem that requires a step by step process has been consistent in the research literature (Armour-Thomas and Hayes, 1988; Bulleit, 2006; Deutsch and Coleman, 2000; Gordon, 1962). A summary of the problem solving processes found in the research literature is included in Table 2.
Another challenge in understanding ability to problem solve is the measurement of an individuals’ problem solving ability. Based on the social problem solving theory, the Problem-Solving Inventory (PSI) was developed (Heppner & Peterson, 1982). The PSI is a 35-item, Likert-type inventory that measures individuals’ perceptions of their problem-solving behaviors and attitudes (Heppner & Peterson, 1982). According to
Heppner and Peterson (1982), the constructs of the PSI include (a) problem-solving confidence, (b) approach-avoidance style and, (c) personal control.

Ten years after Heppner and Peterson created the PSI, Maydeu-Olivares and D’Zurilla (1997) conducted an extensive factor analysis on the PSI. This rigorous testing revealed that the PSI could, without sacrificing reliability and validity, be separated into two distinct instruments. The two instruments include the Problem Solving Skills Scale (PSI-PSS) and the Problem Solving Self-Efficacy Scale (PSI-PSSE) (Maydeu-Olivares & D’Zurilla, 1997). According to Maydeu-Olivares and D’Zurilla (1997), these two instruments are highly correlated with Heppner and Petersen’s (1982) Problem Solving Inventory (PSI). The advantage of the newer scales is that they are brief (9 items and 7 items, respectively) and have been supported with considerable evidence of validity and reliability.

According to Deutsch and Coleman (2000), problem solving is a useful approach when addressing conflict, especially when conflict is perceived as an opportunity for change and growth. However, teaching healthcare professionals how to problem solve during interprofessional conflicts is an area with limited evidenced based research. Therefore, the need for the next section will discuss the topic of conflict resolution education and training.

**Conflict Resolution Education and Training**

Many studies have stressed the benefits that result from providing conflict resolution training to healthcare professionals (Gerardi, 2003, 2010; Marshall & Robson, 2005). For example, Marshall and Robson (2005) found that conflict resolution training can potentially result in safer patient environments by providing healthcare professionals
with the skills to successfully resolve workplace conflict. In addition, Ridge (2007) found that conflict resolution training is a competency skill that results in higher levels of professional nursing effectiveness. Moreover, Kressel et al. (2002) stated that providing conflict resolution training to healthcare professionals not only improves quality of care but also reduces the threat of lawsuits.

Likewise, research literature also has suggested that a lack of training in conflict resolution is problematic in healthcare environments because conflict resolution training has been shown to better prepare individuals and teams to address problems and identify effective resolutions when discord arises (Gerardi, 2010; Saulo & Wagener, 2000). Sportsman and Hamilton (2007) have pointed out that without knowledge of how to resolve conflict, individuals and teams are more likely to simply avoid conflict altogether.

An area of controversy within the research literature on conflict resolution education training has been related to the teaching and learning strategies. Gerardi (2010) has encouraged the use of a wide variety of methods, such as continuing education programs, grand rounds, staff meetings, retreats, websites, and journals. To gain a consumer perspective, Dewitty, Osborne, Friesen, and Rosenkrantz (2009) conducted a study to determine exactly which conflict resolution training delivery method healthcare professionals find most desirable. Results of this investigation revealed that 20.2% of participants expressed an interest in attending continuing education programs to learn about conflict resolution, 14.6% expressed an interest in reading articles in state newsletters about resolving conflict, and 14.5% expressed an interest in a Web-based approach to conflict resolution training. Although several options for training healthcare
professionals about conflict resolution were identified in the literature (AHRQ, 2010; Gerardi, 2010), few addressed the effectiveness of their training.

Other studies conducted on conflict resolution education and training have demonstrated that the type of education can impact healthcare professionals’ choice about which strategy to use when resolving a conflict. For example, Sportsman and Hamilton (2007) conducted a study revealing that before conflict resolution training, senior nursing students most frequently chose avoidance and compromise as their predominant conflict resolution strategy; however, after conflict resolution training, they most frequently chose compromise and collaboration. Similarly, Saulo and Wagener (2000) found that education and training about conflict management encouraged participants to choose collaboration as a strategy when resolving conflict.

Another area of concern is that few studies on conflict resolution education and training address whether the education gained in training sessions actually transfers to the workplace. Interestingly, much of the evaluation research has been conducted in the context of elementary and secondary school age children (Deutsch, 2000; Jones, 2004). However, Zweibel, Goldstein, Manwaring, and Marks (2008) have reported that the attitudes, knowledge, and skills of residents and academic healthcare faculty improved after a short conflict resolution professional development course. Surprisingly, these improvements were sustained after twelve months, with participants reporting they were able to apply the conflict resolution skills they had learned to difficult situations in diverse healthcare environments (Zweibel, Goldstein, Manwaring, & Marks, 2008).

Constructing a conflict resolution program with the essential elements that will lead to effective conflict resolution management is another issue with regards to
education training. According to Porter-O’Grady (2004), the following curriculum objectives should be included in basic conflict resolution education programs: recognition that conflict is part of human interaction, identifying the steps of the conflict resolution process, and demonstrating a clear understanding of an organization’s structure for handling conflict. In addition, research scholars have emphasized the importance of administrative commitment to educating all employees in an organization on the important aspects of conflict resolution (Porter-O’Grady, 2004; Zweibel, Goldstein, Manwaring, & Marks, 2008). Difficulties have been documented to arise when some employees in a healthcare organization have been educated about effective conflict resolution while others have not received the training. Creating a culture of mutual understanding, active listening, and respect regardless of status within an organization was found to be an important goal of most conflict resolution education and training programs (Gerardi, 2010; Runde & Flanagan, 2010; Porter-O’Grady, 2004; Zweibel, Goldstein, Manwaring, & Marks, 2008).

**Theoretical Framework**

Research literature has provided evidence that self-efficacy beliefs are a powerful predictor of an individual’s performance (Bandura, 1977; Multon, Brown, & Lent, 1991; Pajares & Miller, 1994; Stajkovic & Luthans, 1998). According to Bandura (1997), compared with individuals who doubt their capabilities, those with high self-efficacy achieve at higher levels. Pajares and Miller (1994) found that college students who were efficacious in their ability to perform mathematical equations outperformed those that were not as efficacious in their ability to perform mathematical equations. Based on Bandura’s (1997) theory of self-efficacy, healthcare professionals who are efficacious in
their beliefs about resolving team conflict are likely to achieve better outcomes when resolving conflict.

Bandura (1977, 1986) also explains that individual self-efficacy influences behaviors and environments, and, likewise, behaviors and environments influence self-efficacy. The influence of self-efficacy beliefs is evident not only in short-term decisions but also in long-term decisions—that is, self-efficacy influences the course of action individuals chose to pursue on a long-term basis (Bandura, 2005). Bandura (1977) has also stated that individuals obtain information to gauge their self-efficacy through four sources (a) interpretations of actual performances, (b) vicarious (modeled) experiences, (c) forms of social persuasion, and (d) physiological indexes.

In a study of 140 business students at the University of Idaho, researchers investigated team conflict self-efficacy using Bandura’s four sources of gauging self-efficacy (Stone & Bailey, 2007). Results suggested that vicarious team experience and social persuasion significantly affected team conflict self-efficacy among the business students who participated in the study (Stone & Bailey, 2007). The empirical results of this study were derived from a team self-assessment questionnaire which included items related to the participants self-efficacy beliefs about resolving conflict that occur within teams (Stone & Bailey, 2007).

According to Schunk and Pajares (2009), effort, perseverance, and resilience are often determined by self-efficacy beliefs. The stronger the beliefs, the more likely individuals are to approach difficult tasks as challenges to be conquered rather than obstacles to be avoided (Stone & Bailey, 2007). Schunk and Pajares (2009) have explained that individual self-efficacy beliefs can influence the choices individuals make
and the courses of action they pursue. In other words, individuals typically choose tasks and activities they feel competent and confident and avoid tasks in which they do not. Research has suggested that efficacious individuals usually accomplish what they believe they can accomplish (Schunk & Pajares, 2009).

Studies have also been conducted which examine the relationship between self-efficacy and healthcare students’ success in college. Taylor and Reyes (2012) explored self-efficacy and test success among baccalaureate nursing students over one semester of nursing study. Results indicated that test scores were weakly correlated with self-efficacy scores (Taylor and Reyes, 2012). However, a larger-scale study exploring the differences in medical students’ self-efficacy from year 1 of medical school to year 4 found statistical significant differences, suggesting students’ self-efficacy increases considerably from year 1 to year 4 (Artino et al., 2012).

Numerous studies over several decades have supported Bandura’s (1977) self-efficacy theory, providing evidence that confidence in one’s ability is a strong predictor of effectiveness at a given task (Bandura, 1977; Katz, Feigenbaum, Pasternak, & Vinker, 2005; Multon, Brown, & Lent, 1991; Pajares & Miller, 1994; Stajkovic & Luthans, 1998). Given that team effectiveness is influenced by team members’ confidence or self-efficacy in resolving team conflict (Alper, Tjosvold, & Law, 2000), it follows that understanding how a team member becomes self-efficacious in resolving team conflicts would be a critical component in effective team development.

A second theory that helps explain conflict resolution is Deutsch's (1973) theory of constructive conflict resolution. According to Deutsch (1994), the outcome of a conflict will be either constructive or destructive depending upon the approach used to
resolve the conflict. According to Deutsch (1973), a competitive approach will likely lead to a destructive outcome whereas a cooperative approach will likely lead to a constructive outcome (Deutsch, 1973). Approach or strategy used by teams to resolve conflict is a useful way to understand outcomes such as team effectiveness. Healthcare teams that approach conflict cooperatively will more likely have a constructive outcome whereas teams that approach conflict competitively will most likely have a destructive outcome.

**Conclusion**

There is evidence in the research literature supporting the need for healthcare professionals to be educated and trained to work in collaborative healthcare teams (AHRQ, 2008; CIHC, 2010; IPEC, 2011). There is also support from leaders in healthcare that resolving conflict is an essential component of effective teamwork (AHRQ, 2008; CIHC, 2010; IPEC, 2011). Research literature has indicated that there are three central factors that influence healthcare professionals’ ability to resolve conflict, the factors include: (a) communication skills (Gerardi, 2010; Porta, 2006; Rubin & Martin, 1994; Seren & Ustun, 2008; Taylor et al., 2008) (b) problem-solving skills (Armour-Thomas & Hayes, 1988; Carson & Runco, 1999; D’Zurilla, Nezu, & Maydeu-Olivares, 1982), and (c) education and training (Gerardi, 2010; Kressel, Kennedy, Lev, & Hymann, 2002; Runde & Flanagan, 2010). Discovering the relationship between these factors and healthcare professionals’ ability to effectively resolve conflicts that occur among collaborative healthcare teams is a stepping stone towards building conflict competent healthcare teams.
Chapter 3
Methodology

Introduction

Conflict among interprofessional collaborative healthcare teams, when not effectively resolved, has been linked to a variety of negative outcomes, including reduced team productivity and increased health and safety risks for patients (De Dreu & Weingart, 2003; Fargoson & Haddock, 1992). National team training programs (AHRQ, 2008) and National Interprofessional Competency Frameworks (CIHC, 2010; IPEC, 2011) have identified the resolution of team conflicts as an important component of improving overall team effectiveness. However, these frameworks only provide a broad overview of conflict resolution within interprofessional collaborative healthcare teams.

An analysis and synthesis of the research literature conducted on conflict resolution suggests that there are three factors central in resolving conflicts that occurs within interprofessional collaborative teams. The central factors include the following: (a) communication ability (AHRQ, 2008; Gerardi, 2010; Porta, 2006; Seren & Ustun, 2008; Taylor et al., 2008, (b) problem-solving ability (Deutsch & Coleman, 2000; D’Zurilla, Nezu, & Maydeu-Olivares, 1982; and (c) conflict resolution education and training (Gray, 1989; Leever et al., 2010; Prescott & Bowen, 1985). What is not known is the relationship between these factors and if these factors independently or together predict healthcare professionals’ ability to resolve conflict that occurs within interprofessional collaborative healthcare teams.

The research literature also has suggested that a healthcare professionals’ confidence or self-efficacy in accomplishing a task, such as resolving a conflict, is a
strong predictor of actual ability to complete the task (Bandura, 1977). According to Bandura (1997), compared with individuals who doubt their capabilities, those with higher self-efficacy achieve at higher levels. In addition, self-efficacy has been shown in many studies to be a powerful predictor of an individual’s performance (Bandura, 1977; Multon, Brown, & Lent, 1991; Pajares & Miller, 1994; Stajkovic & Luthans, 1998). Therefore, Bandura’s (1977) theory of self-efficacy will be used in this study to view ability to resolve conflict through the lens of the healthcare professionals themselves.

In summary, this study aims to investigate whether there is a statistically significant relationship between a healthcare professional’s communication skills, problem-solving skills, and healthcare professionals’ self-efficacy to resolve conflicts that occur within interprofessional collaborative healthcare teams. Bandura’s (1977) theory of self-efficacy will guide the study by providing a theoretical lens through which the researcher will seek to view ability to resolve conflict through the eyes of the healthcare professional.

This study will contribute to both the self-efficacy literature and the conflict resolution literature by expanding research on the role of self-efficacy in resolving conflict within collaborative healthcare teams and investigating the relationship between the three central factors identified by the research literature to be important when resolving conflict and conflict resolution ability. In addition, this study will contribute to the practice of healthcare educators in academic settings by providing information and/or data that academicians can use to better understand how to design curriculum that focuses on conflict resolution.
Research Design

This study employed a quantitative, exploratory, non-experimental, cross-sectional survey design to examine the relationship between factors identified in the literature to be important when resolving conflict and healthcare professionals’ self-efficacy about their ability to resolve conflicts that occur within interprofessional collaborative teams.

A quantitative approach was chosen because the researcher wished to assess the magnitude and reliability of the relationships among the variables (Polit & Hungler, 1989). The researcher was interested in determining whether communication skills, problem-solving skills, and education and training, influence healthcare professionals’ confidence in their ability to resolve team conflicts. In addition, an exploratory design was chosen because relatively few research studies have been conducted focusing on conflict resolution among members of healthcare teams. In addition, an exploratory design provides an opportunity to establish foundational knowledge about a particular phenomenon (in this case, healthcare professionals’ self-efficacy beliefs about their ability to resolve team conflicts) (Colton & Covert, 2007).

A cross-sectional design involves collecting data at one point in time and is especially appropriate for describing the status of relationships among phenomena (Polit & Beck, 2010). A cross-sectional survey design was chosen because it offered a low-cost, large-scale method of collecting data from a large number of individuals within the healthcare profession.

According to Colton and Covert (2007), researchers use survey instruments when they require information from large groups of individuals and when they wish to explore
relationships between variables. In addition, survey designs allow researchers to increase their sample size, which helps reduce sampling error and allows the sample to better represent the population under investigation (Polit & Hungler, 1989). Surveys enable researchers to obtain information about people’s actions, knowledge, intentions, opinions, and attitudes by means of self-report (Polit & Beck, 2010), and surveys yield results that can be quantified (Polit & Beck, 2010). In this study, the researcher used T-test, Analysis of Covariance (ANOVA’s), and multiple regression analysis to explore the potential relationships and predictive ability between (a) communication skills, problem-solving skills, and education and training and (b) healthcare professionals’ self-efficacy about their ability to resolve conflicts that occur among interprofessional collaborative teams.

**Instrument**

The data collection instrument utilized was a 36-item questionnaire consisting of five sections (see Table 1). The questionnaire was administered electronically via the Internet. According to Colton and Covert (2007), the advantages of Internet-based surveys include timeliness in getting the instrument to respondents and in obtaining results, higher response rates, lower costs resulting from savings on printing and mailing, and ease of inputting data for analysis. However, there are several disadvantages to Internet-based surveys, such as the possibility that problematic technology issues may arise (e.g., difficulty with hardware connections, slow Internet connection speeds, and monitor resolution problems) (Colton & Covert, 2007). In addition, careful attention must be given to issues related to confidentiality and anonymity when utilizing Internet-based surveys (Colton & Covert, 2007).
The questionnaire was distributed using the Internet application Qualtrics. Qualtrics provides a vehicle for collecting and analyzing survey data. The first page of the survey consisted of a brief letter describing the research and asking for agreement from potential participants. The first page also included information guaranteeing the participants anonymity.

The first section of the questionnaire was designed to gather demographic information about the participants. Sections 2, 3, and 5 of the questionnaire consisted of three pre-existing instruments that measured (a) communication skills, (b) problem-solving skills, and (c) team conflict self-efficacy (see Table 3). The three existing instruments all have demonstrated evidence in the literature regarding their validity and reliability. Section 4 was designed to gather information about participants’ education and training in conflict resolution, it consisted of three items that asked the participants to rate their perceptions of how adequately they believe their previous education and training in conflict resolution had been.

A Likert-type scale was used as the response scale for all items except the demographics. The Likert-type scale ranged from “strongly disagree” (1) to “strongly agree” (5). The advantage of a Likert-type scale is that it is familiar to most potential participants and that it creates a numerical scale which is useful in data analysis (Colton & Covert, 2007).
Table 3.

Map of Survey Instrument, Including Independent and Dependent Variables

<table>
<thead>
<tr>
<th>Section</th>
<th>Non Variables</th>
<th>Independent Variables</th>
<th>Dependent Variables</th>
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<td>Section 2</td>
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<td></td>
<td>Communication</td>
<td>Communication Competence Scale (ICCS-SF)</td>
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<td>Competence</td>
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<td>Section 3</td>
<td>Problem-solving skills</td>
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<td>Problem Solving</td>
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<td>Inventory--Problem</td>
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<td>Solving Skill Scale (PSI-PSS)</td>
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<tr>
<td>Section 4</td>
<td>Conflict resolution education and</td>
<td></td>
<td>Three Independent</td>
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<td></td>
<td>training</td>
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<td>Section 5</td>
<td>Team conflict self-efficacy</td>
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<td>Team Self-</td>
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Section 1: Demographic characteristics

Items 1-8 of the questionnaire collected information related to the demographic characteristics of the participants. Specifically, the questionnaire collected information on the age, gender, geographic location, as well as academic discipline (e.g., medicine, nursing, physical therapy, etc.) of the participants. In addition, item 8 in the demographic section asked the participants to indicate how many collaborative teams they have
worked on throughout their careers. The item defined collaborative teams as teams that include healthcare professionals from different disciplines. Information for this question helped to identify the percentage of participants who represent healthcare professionals working in collaborative healthcare teams. The final question in the demographic section asked participants how many years they have worked with their current collaborative team. This item helped establish the amount of experience or time spent with one team.

**Section 2: Communication Competence**

Items 9-18 of the questionnaire measured the interpersonal communication skills of participants by using the Interpersonal Communication Competence Scale (ICCS-SF) (Rubin & Martin, 1994). The ICCS-SF was developed to measure the construct of “interpersonal communication,” which includes the following 10 skills: self-disclosure, empathy, social relaxation, assertiveness, interaction management, altercentrism, expressiveness, supportiveness, immediacy, and environment control (Rubin & Martin, 1994) (see Table 4).

This scale was chosen for three primary reasons: (a) it is a self-report instrument designed to identify interpersonal communication skills, (b) it is brief (10 items), and (c) it demonstrates evidence of reliability and validity (Rubin & Martin, 1994). In addition, the ICCS-SF measures specific interpersonal communication skills that have been noted in the research literature to be particularly relevant in resolving team conflict in healthcare settings (Agency for Healthcare Research and Quality, 2010).
<table>
<thead>
<tr>
<th>Subconstruct</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Self-Disclosure</td>
<td>Ability to open up or reveal to others personality elements through communication (Rubin &amp; Martin, 1994).</td>
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<tr>
<td>Empathy</td>
<td>Involves affect for or an emotional reaction to another’s internal state and results in understanding others’ perspectives (Redmond, 1985).</td>
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<tr>
<td>Social Relaxation</td>
<td>Lack of anxiety or apprehension in everyday social interactions; a feeling of comfort, low apprehension, and ability to handle negative reactions or criticism without undue stress (Duran, 1983).</td>
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<tr>
<td>Assertiveness</td>
<td>The ability to stand up for one’s rights without denying the rights of others (Henderson &amp; Furnham, 1982).</td>
</tr>
<tr>
<td>Interaction Management</td>
<td>The ability to handle ritualistic procedures in everyday conversation. It includes skills such as negotiating topics to be discussed, taking turns, beginning and ending conversations, and developing conversational topics (Spizberg &amp; Hecht, 1984).</td>
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<tr>
<td>Altercentrism</td>
<td>The ability to demonstrate interest in others, attentiveness to what they say and how they say it, perceptiveness not only of what is said but also what is not said, responsiveness to their thoughts, and adaptation during conversation (Cegala, 1981).</td>
</tr>
<tr>
<td>Expressiveness</td>
<td>Ability to communicate feelings through nonverbal behaviors such as facial expressions, gestures, appropriate vocal modulation, and posture shifts (Spizberg &amp; Hecht, 1984).</td>
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<tr>
<td>Supportiveness</td>
<td>Communication that is descriptive (not evaluative), provisional (not certain), spontaneous (not strategic), oriented towards solving a problem (not controlling), empathetic (not remote), and egalitarian (not superior) (Bochner &amp; Kelly, 1974).</td>
</tr>
<tr>
<td>Immediacy</td>
<td>The ability to demonstrate to others that one is available for communication through nonverbal behaviors such as facing the other directly, adopting an open stance, having a pleasant facial expression, using direct eye contact, closeness, and affiliation (Spizberg &amp; Hecht, 1984).</td>
</tr>
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</table>
| Environmental           | The ability to achieve predetermined goals and satisfy needs as}
Internal reliability analysis for the 10-item ICCS-SF instrument resulted in an overall coefficient alpha of 0.63. Concurrent validity testing was also completed on the ICCS-SF to determine whether the instrument was in alignment with communication and cognitive communication flexibility. Results of the testing demonstrated that the ICCS-SF was positively related both to cognitive flexibility ($r=.49$, $p<.01$) and communication flexibility ($r=.40$, $p<.01$) (Rubin & Martin, 1994). Reliability and validity data for the ICCS-SF, in conjunction with the fact that researchers have identified interpersonal communication skills as a necessary component in resolving conflict (Gerardi, 2010; Porta, 2006; Seren & Ustun, 2008; Taylor et al., 2008) suggest that this instrument was an appropriate choice for this research study. After data collection, the responses to the communication competence questions were combined to create a total score. The total score on the ICCS-SF then stood for the independent variable of communication skills.

**Section 3: Problem-solving Ability**

Items 19-27 measured problem solving skills through the use of Maydeu-Olivares and D’Zurilla’s (1997) Problem Solving Inventory’s--Problem Solving Skills Scale (PSI-PSS). This scale was selected because (a) it is a self-report measure of ability to resolve problems and (b) it is brief (9 items). The Problem Solving Skills Scale (PSI) is a short version of the 35-item Problem Solving Inventory (PSI: Heppner & Peterson, 1982). According to Heppner and Peterson (1982), the PSI measures three constructs: (a) problem solving confidence, (b) approach-avoidance style, and (c) personal control. The PSI-PSS has been reported to be very highly correlated with two of the PSI’s constructs.
(problem solving confidence, and approach-avoidance style) (Maydeu-Olivares & D’Zurilla, 1997). Specifically, Maydeu-Olivares & D’Zurilla (1997) found the PSI-PSS to be correlated with the problem solving confidence scale at .93 and the approach-avoidance scale at .92. The PSI-PSS was not correlated with the third construct, personal control construct, and therefore questions related to personal control were eliminated from the PSI-PSS instrument. The extensive reliability and validity testing on the PSI-PPS suggests that this instrument was an appropriate choice for this research study. After data collection, the responses to problem-solving items were combined to create a total score. The total score on the Problem Solving Skills Scale comprised the independent variable “problem-solving skills.”

Section 4: Conflict Resolution Education and Training

Items 28-30 collected information about how adequately participants believe they have been trained in conflict resolution and the education they have received regarding conflict resolution methods. Item 28 asked participants about the adequacy of their training pre-licensure, and Item 29 asked participants about the adequacy of their training post-licensure. Item 30 was developed to determine whether participants received training in conflict resolution specifically within the context of collaborative healthcare teams. After data collection, each question in Section 4 was analyzed as independent variables.

Section 5: Team Conflict Self-efficacy

Items 31-36 of the survey instrument measured the dependent variable: self-efficacy about ability to resolve conflict that occurs within collaborative teams. Healthcare professionals’ self-efficacy was measured using a modified version of the
Team Self-Assessment Questionnaire (TSAQ) (Stone & Bailey, 2007). The constructs measured by the TSAQ include (a) team conflict self-efficacy, (b) career outcome expectancy, (c) current team outcome expectancy, and (d) behavioral intention to use team skills (Stone & Bailey, 2007). Only items within the team conflict self-efficacy subscale (construct “a” above) were used for this study. According to Stone and Henry (2003), the reliability coefficient for team conflict self-efficacy was equal to .75, with a shared variance equal to 60%. The researchers who developed the TSAQ reported that its items were based on scales previously published by Stone and Henry (1998, 2003) as well as scales published by Alper, Tjosvold, and Law (2000).

A psychometric evaluation of the TSAQ revealed that the items are reflective of team conflict self-efficacy (Stone & Bailey, 2007). Item reliability was also evaluated using factor loadings, which ranged from 0.71 to 0.98 (Stone & Bailey, 2007). In addition to reliability testing, average percentages of shared variance were 60% or greater, which satisfied convergent validity requirements for each measure (Stone & Bailey, 2007). Extensive psychometric evaluation of the TSAQ and the modified version of the Team Self-Assessment Scale suggested that this instrument was an appropriate choice for this research study. After data collection, the responses to the team conflict self-efficacy questions were combined to create a total score. The total score on the Team Self-Assessment Scale stood for the dependent variable of healthcare professionals’ self-efficacy about resolving conflict that occurs within collaborative healthcare teams.
Population

The population for this study consisted of healthcare professionals working within an interprofessional collaborative healthcare team.

Sample

The sample population for this study consisted of individuals within the healthcare profession registered to attend the international Collaborating Across Borders (CAB) IV Conference in Vancouver, British Columbia from June 12 to June 14, 2013. The professionals who typically attend this conference consist of healthcare practitioners, researchers, academics from universities, colleges and institutes, health/education policy and decision makers, student organizations, and patient organizations--all of whom maintain an interest in advancing all aspects of interprofessional education, leadership, practice, and policy (American Interprofessional Health Collaborative, 2012; Canadian Interprofessional Health Collaborative, 2010).

This study provided a unique opportunity to reach out to a large number of attendees who work within interprofessional collaborative teams. In addition, registered participants were likely to have interest in advancing the knowledge of interprofessional investigations, such as this study, and were determined to be more willing, than other venues of healthcare professionals, to participate. In addition, the CAB III conference in 2011 attracted over 750 healthcare professionals from seven countries around the world. The diversity and large numbers of potential participants provided an ideal opportunity for robust, rich data collection.

Sampling frame. The sampling frame consisted of registry information held by the Collaborating Across Borders conference committee.
**Sample selection.** The sample was selected using a combination of two nonprobability sampling methods: (a) quota sampling, and (b) convenience sampling. According to Polit and Beck (2010), “quota sampling refers to the nonrandom selection of participants in which the researcher pre-specifies characteristics of the sample to increase its representativeness” (p.565). The pre-specified characteristic of this sample was that the potential participants were currently or have in the past worked within an interprofessional collaborative healthcare team.

Convenience sampling or purposive sampling involves administering the instrument to participants that are readily available (Colton & Covert, 2007). The Collaborating Across the Borders Conference provided an ideal platform for collecting data from readily available healthcare professionals who have in the past or are currently working within teams.

**Data Collection**

The qualtrics electronic survey link contained the four measurement subscales (e.g. Communication Competency Scale, Problem-Solving Skills Scale, three independent questions measuring adequacy of conflict resolution training, and the Team Self- Efficacy Scale) this survey was approved by the University of Toledo Institutional Review Board. Qualtrics is online software program that allows researchers to create and disperse surveys confidentially and anonymously.

Data was collected at the biannual international Collaborating Across Borders (CAB) IV Conference held in Vancouver, British Columbia, in June of 2013. In prior years, this conference typically has attracted more than 750 international healthcare professionals from a wide variety of disciplines. The conference committee agreed to
send an email to conference registrants one to two weeks prior to the conference inviting conference registrants to complete the survey. Included in the email was a link connecting attendees to the Qualtrics electronic survey which included the informed consent. A follow-up email was also sent in the two weeks following the conference.

**Data Analysis**

Survey data was collected via Qualtrics’ secure data collection website. The Statistical Package for Social Sciences (SPSS) was used to analyze the data. The researcher used descriptive statistics, correlational analysis, analysis of variance, and a multiple regression procedure to analyze the data.

Descriptive statistics were used to analyze Research Questions 1 and 2 which sought to determine the extent to which the participants reported their conflict resolution self-efficacy, communication competence, problem-solving ability, and adequacy of conflict resolution education and training. Analysis of descriptive statistics helped determine if the respondents were representative of the population and helped to establish a context for the responses (Colten & Covert, 2007).

Correlational analysis, T-test, and Analyses of Covariance (ANOVA’s) were conducted to answer Research Question 3, which sought to determine if conflict resolution self-efficacy scores differ based on demographic characteristics (e.g., gender, highest degree obtained, country, discipline, primary professional role, number of collaborative teams, and number of years worked on current teams and healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams.

Correlational analyses were also conducted to answer research questions 4-6. These analyses examined the relationship between the independent variables.
(communication competence, problem-solving ability, and conflict resolution education and training) and the dependent variable (healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams), as measured by scores on the Conflict Resolution Self-Efficacy subscale (CRSE). A Pearson product-moment correlation coefficient was calculated to determine whether there was a statistically significant relationship between the independent variables and the dependent variable (Polit & Beck, 2010).

A multiple regression analysis was conducted to answer Research Question 7. Multiple regression analysis was conducted to determine the degree to which the independent variables (communication competence, problem-solving ability, and education and training) can be used as accurate predictors of the dependent variable (and healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams), as measured by scores on the CRSE.

In summary, National frameworks (CIHC, 2010; IPEC, 2010) and National team training programs (AHRQ, 2008) have identified conflict resolution as an important component of interprofessional collaborative practice. The research literature has identified three central factors (communication skills, problem-solving skills, and education and training) that are important when resolving conflict. However, little is known about the relationship between these factors and/or if these factors predict healthcare professionals’ ability to resolve conflict among interprofessional healthcare teams. Problematic in determining a healthcare professional’s ability to resolve conflict are research challenges such as attempting to be present when a conflict among healthcare team members will occur and the likelihood of the Hawthorne effect occurring
when a researcher is present during a conflict. Therefore, assessing healthcare professionals’ perception of their ability to resolve conflict provided a valid and realistic method for understanding an important element of conflict resolution ability.
Chapter 4

Results

Introduction

Studies on conflict resolution among interprofessional healthcare teams have tended to emphasize the causes of conflict (Goodyear, 2006; Spears, 2005; Tordorva & Mihaylova-Alakidi, 2010), types of conflict (Goodyear, 2006; Tordorva & Mihaylova-Alakidi, 2010), and strategies or behaviors healthcare professionals employ when attempting to resolve conflict (Brown et al., 2011; Hendel, Fish, & Berger, 2007; Leever et al., 2010; Skjorshammer, 2001; Todorova & Mihaylova-Alakidi, 2010). Interestingly, limited research has been conducted on the ability of healthcare professionals working within collaborative teams to resolve conflict effectively. This absence of research is surprising considering conflict resolution ability is an important component of many team training programs (AHRQ, 2008; Deutsch & Coleman, 2000; Gerardi, 2010; Runde & Flanagan, 2010) and National Interprofessional Competency frameworks (CIHC, 2010 & IPEC, 2011).

Encouragingly, scholars and researchers have identified three factors that seem to influence the ability of healthcare professionals to resolve conflict effectively: communication competence, problem-solving ability, and conflict resolution education and training (AHRQ, 2008; Armour-Thomas & Hayes, 1988, 2005; Carson & Runco, 1999; Dreu & Weingart, 2003; Gerardi, 2010; Kressel et al., 2002; Porta, 2006; Registered Nurses Association of Ontario, 2006; Seren & Ustun, 2008; Taylor et al., 2008). However, despite progress in understanding that communication competence, problem-solving ability, and education and training influence healthcare professionals’
ability to resolve conflict, few studies have explored whether there is a statistically significant relationship between these three central components and the ability of healthcare professionals to resolve conflict. In addition, researchers do not yet fully understand the combined influence of these three components (communication competence, problem-solving ability, and conflict resolution education and training) on the ability of healthcare professionals to resolve conflict.

Problematic in investigating these relationships are logistical barriers that exist when assessing the ability of healthcare professionals to resolve conflict. Research challenges often arise and create barriers when assessing the ability of healthcare professionals to resolve conflict—e.g., attempting to predict when a conflict among healthcare team members will occur and the likelihood of the Hawthorne effect occurring when researchers are present during a conflict. However, assessing healthcare professionals’ perceptions of their ability to resolve conflict provides a valid and realistic method of exploring a fundamental aspect of conflict resolution ability. In fact, according to Bandura's (1994) theory of self-care efficacy, perceptions influence choice of activity, task perseverance, level of effort expended, and ultimately the degree of success achieved. In addition, many scholars have shown that beliefs or perceptions about ability are an important component of overall performance of any given skill (Bandura, 1997; Katz, Feigenbaum, Pasternak, & Vinker, 2005; Largo-Wight, Peterson, & Chen, 2005; Multon, Brown, & Lent, 1991; Pajares & Miller, 1994). For these reasons, self-efficacy of healthcare professionals in resolving team conflicts functioned as the dependent/outcome variable in this study.
This chapter presents the results of quantitative data analyses related to perceptions of conflict resolution ability among healthcare professionals who work in collaborative teams. The chapter is divided into four sections. The first section provides brief background information on the study, its purpose, and the research questions. The second section presents a summary of the participants’ characteristics, the data collection techniques, and the data analysis techniques used in this study. The third section presents the results of the data analysis, and the fourth section presents a summary of the results.

**Purpose of the Study and Research Questions**

The primary purpose of this study was to investigate whether a statistically significant relationship exists among (a) communication competence, problem-solving ability, and conflict resolution education and training and (b) healthcare professionals’ self-efficacy in resolving conflict within interprofessional collaborative healthcare teams. A secondary purpose of this study was to explore the predictive potential of three central components (communication competence, problem-solving ability, and conflict resolution education and training) and the self-efficacy beliefs of healthcare professionals regarding their ability to resolve conflicts within interprofessional collaborative teams. The following seven research questions guided this study:

RQ1: To what extent do healthcare professionals report self-efficacy in resolving conflicts within collaborative healthcare teams?

RQ2: To what extent do healthcare professionals report their communication competence, problem-solving ability, and adequacy of conflict resolution education and training?
RQ3: Do conflict resolution self-efficacy scores differ among healthcare professionals based on demographic characteristics?

RQ4: Is there a statistically significant relationship between communication competence and healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams?

RQ5: Is there a statistically significant relationship between problem-solving ability and healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams?

RQ6: Is there a statistically significant relationship between education and training and healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams?

RQ7: Can healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams be predicted by communication competence, problem-solving ability, and/or conflict resolution education and training?

Summary of the Participants, Data Collection Techniques, and Data Analysis Techniques

Participants

The sample for this study was derived from two groups of healthcare professionals. The first group of participants consisted of licensed healthcare professionals who registered to attend the international Collaborating Across Borders (CAB) IV Conference in Vancouver, British Columbia, from June 12, 2013, to June 14, 2013. The professionals who typically attend this conference consist of healthcare practitioners; researchers; academics from universities, colleges, and institutes;
health/education policy makers and decision makers; representatives from student organizations; and representatives from patient organizations (American Interprofessional Health Collaborative, 2012; Canadian Interprofessional Health Collaborative, 2010).

The second group of participants consisted of licensed healthcare professionals who are members of the Society for Simulation in Healthcare (SSH). The SSH is a professional organization that provides an online forum for discussions about the use of simulation in healthcare. In addition, the SSH publishes a bi-monthly journal, *Simulation in Healthcare*, and sponsors the annual International Meeting on Simulation in Healthcare (SSH, 2013). SSH members include physicians, nurses, allied health and paramedical personnel, researchers, educators, and developers from around the world (SSH, 2013).

**Frequency distributions of participants.**

The sample included participants of both genders (male and female), but the overwhelming majority (87%, n = 160) of the participants were female, and only a few (13%, n = 24) of the participants were male (see Figure 1).

![Figure 1. Gender distribution of participants.](image)

The sample included participants from a wide range of ages (see Figure 2). Many (36%) of the participants were between 51 years old and 60 years old, while almost as
many (32%) were between 41 years old and 50 years old. Fewer participants were between 31 years old and 40 years old (16%) and older than 61 years old (11%). The fewest number of participants were under 30 years old (4%).

![Age ranges of participants.](image1)

**Figure 2.** Age ranges of participants.

More than a third (39%, n = 72) of the participants indicated that they held master’s degrees, while others held Ph.D.’s (19%, n = 35), bachelor’s degrees (17%, n = 31), M.D. degrees (11%, n= 20), and practice doctorates (11%, n = 20) (see Figure 3). The fewest number of participants held diplomas (1%, n = 2).

![Educational degrees of participants.](image2)

**Figure 3.** Educational degrees of participants.

The sample included participants with a wide range of years of experience in healthcare, but the majority (66%, n = 120) reported that they had practiced more than 20
years in healthcare (see Figure 4). Fewer participants reported that they had practiced 11-20 years (21%, n = 39) in healthcare, while even fewer reported that they had practiced 6-10 years (8%, n = 15) in healthcare. The fewest number of participants reported that they had practiced 0-5 years (4%, n = 8) in healthcare.

Figure 4. Years of experience in healthcare of participants.

Participants who responded to the questionnaire indicated that they reside in countries from around the world, including Australia (2%, n = 3), China (1%, n = 2), and the United Kingdom (1%, n = 2) (see Figure 5); however, the vast majority of participants indicated that they reside either in the United States (58%, n = 107) or Canada (38%, n = 70).

Figure 5. Countries in which participants reside.

Healthcare professionals from a wide range of professional disciplines participated in the study (see Figure 6). However, almost half of the respondents reported
their profession as nursing (49%, n = 89). Fewer participants reported their profession as rehabilitative sciences (18%, n = 33), and even fewer reported their profession to be in medicine (13%, n = 24). The fewest number of participants reported their profession as social work (7%, n = 13) or pharmacy (5%, n = 9). A final group (8%, n = 15) reported their profession as “other.”

*Figure 6. Professional disciplines of participants.*

More than half (54%, n = 99) of the participants indicated they were academicians/educators, while others indicated they were clinicians (19%, n = 34) (see Figure 7). Fewer classified their professional role as administrators (7%, n = 13), managers (8%, n = 14), directors (6%, n = 11), coordinators (5%, n = 9), and “other” (1%, n = 2).

*Figure 7. Professional roles of participants.*
Participants also indicated that they had worked on differing numbers of collaborative healthcare teams (see Figure 8); however, almost half (43%, n = 79) of the participants reported working on more than 10 collaborative teams. About one-third (31%, n = 57) reported working on 1-5 teams, and almost one quarter (23%, n = 43) reported working on 6-10 teams. The fewest (2%, n = 4) number of participants indicated they had never worked on a collaborative team.

![Figure 8. Number of collaborative teams on which participants have worked.](image)

Lastly, longevity working with one collaborative team varied among participants (see Figure 9). Many (33%, n = 61) indicated they had worked with their current team for 1-3 years, while slightly fewer (29%, n = 53) indicated they had worked with their current team for 4-6 years. Fewer participants (26%, n = 47) indicated they had worked with their current team for 7 years or more, and the fewest number of participants (12%, n = 22) indicated they had never been a part of a collaborative healthcare team.
Figure 9. Number of years participants worked with their current collaborative team.

**Data Collection Techniques**

One week prior to the CAB IV conference, the CAB IV conference committee sent an email to all CAB IV registrants. The email included information about the conference and also included an Internet link to the Qualtrics electronic questionnaire developed for this study. The Qualtrics electronic survey featured four measurement subscales: a communication competency subscale, a problem-solving skills subscale, three independent items measuring adequacy of conflict resolution training, and a conflict resolution self-efficacy subscale. This survey was approved by the University of Toledo Institutional Review Board, and participants were ensured through an informed consent form (the first item of the questionnaire) that their responses would be kept confidential and anonymous.

This data-collection approach did not elicit many responses; in fact, one week after the conference had concluded, only nine surveys had been completed. Therefore, the researcher sent individual emails to CAB IV registrants inviting them to participate in this research study. These individualized emails included a note and an Internet link inviting registrants to access and complete the electronic questionnaire. This data-collection approach yielded better results; however, to ensure a robust sample size, the
survey link was also sent, via a networking listserv, to the members of the SSH. The SSH listserv experienced technical difficulties during the time the survey was sent and with confirmation from the SSH webmaster that the listserv was not functioning, it is assumed the link did not reach any of the SSH members. This assumption could not be confirmed because the questionnaire responses did not include any identifying markers. Therefore, it is the researcher’s belief that all of the responses were derived in response to the emails sent to the CAB IV registrants with zero responses from the SSH membership listserv. In conclusion, of the approximately 700 questionnaires that were distributed, 206 were returned, indicating a response rate of 29% (see Table 5). After the data set was cleaned for inaccurate and incomplete results, a total of 182 responses were included in the final analysis.

Table 5

Response Rate

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Surveys Returned</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round 1:</td>
<td>800</td>
<td>9</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Survey Link sent by CAB IV Committee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Round 2:</td>
<td>700</td>
<td>206</td>
<td>29%</td>
</tr>
<tr>
<td>Individual e-mails sent to CAB IV registrants</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data Analysis Techniques

A variety of statistical analysis techniques were used in this study in order to help answer the study’s research questions. Descriptive statistics were used to analyze Research Question 1 and Research Question 2. Correlational analyses, t-tests, and
Analyses of Variance (ANOVAs) were conducted to answer Research Question 3, which sought to determine whether conflict resolution self-efficacy scores differ based on demographic characteristics. Correlational analyses were also conducted to answer research questions 4-6. These analyses examined the relationship between the independent variables (communication competence, problem-solving ability, and conflict resolution education and training) and the dependent variable (healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams), as measured by scores on the Conflict Resolution Self-Efficacy subscale (CRSE). A Pearson product-moment correlation coefficient was calculated to determine whether there was a statistically significant relationship between the independent variables and the dependent variable (Polit & Beck, 2010).

A multiple regression analysis was conducted to answer Research Question 7. The multiple regression analysis was conducted to determine the degree to which the independent variables (communication competence, problem-solving ability, and education and training) can be used as accurate predictors of the dependent variable (and healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams), as measured by scores on the CRSE.

Results of Data Analysis

Research Question 1: To what extent do healthcare professionals report self-efficacy in resolving conflicts within collaborative healthcare teams?

A subscale (Conflict Resolution Self-Efficacy) of the Team Self-Assessment Questionnaire (Stone & Bailey, 2007) was used to measure the extent to which healthcare professionals report self-efficacy in resolving team conflict. A Likert-type scale that
ranged from “strongly disagree” (1) to “strongly agree” (5) was used to indicate participants’ level of agreement with each item. The scores of these items were averaged, with higher scores indicating higher levels of conflict resolution self-efficacy.

Preliminary analysis indicated the following measures of central tendency on the Conflict Resolution Self-Efficacy (CRSE) subscale: M=3.66, SD= 0.52 (see Table 6). These results indicate that on average, the degree to which healthcare professionals reported self-efficacy in resolving team conflicts was between “Neither Agree nor Disagree” and “Agree” on most items of the CRSE.

Table 6

*Measures of Central Tendency of Dependent Variable*

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-efficacy to Resolve Conflict</td>
<td>3.66</td>
<td>0.52</td>
<td>122</td>
</tr>
</tbody>
</table>

Composite percentages of scores on the CRSE were also calculated to provide an understanding of the distribution of scores (see Figure 10).
Figure 10. Composite Percentages of Conflict Resolution Self-Efficacy

**Research Question 2: To what extent do healthcare professionals report their communication competence, problem-solving ability, and adequacy of conflict resolution education and training?**

The extent to which healthcare professionals reported their communication competence, problem-solving ability, and adequacy of conflict resolution education and training was measured using the following subscales: (a) the Interpersonal Communication Competence Scale (Rubin & Martin, 1994), (b) the Problem Solving Skills Scale (Maydeu-Olivares & D’Zurilla, 1997), and (c) three independent items related to perceived adequacy of training in conflict resolution. A Likert-type response scale was used for all three independent variables under investigation. The Likert-type scales ranged from “strongly disagree” (1) to “strongly agree” (5). Items were averaged on each scale separately, with higher scores indicating greater communication competence, greater problem-solving ability, and higher adequacy of conflict resolution education and training, respectively. Of the 182 respondents, preliminary analysis of
scores on the three independent variables indicated the following measures of central tendency: (a) communication competence (M=3.68, SD= 0.33), (b) problem-solving ability (M=3.24, SD=.264), and (c) conflict resolution education and training (M=2.69, SD= 0.74) (see Table 7). Composite percentages were also calculated for the three independent variable subscales (i.e., Communication Competency, Problem-Solving Ability, and Conflict Resolution Education and Training) (see figures 11, 12, and 13).

Table 7

Measures of Central Tendency of Independent Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Competence</td>
<td>3.68</td>
<td>0.33</td>
<td>182</td>
</tr>
<tr>
<td>Problem-Solving Ability</td>
<td>3.24</td>
<td>.264</td>
<td>182</td>
</tr>
<tr>
<td>Conflict Resolution Education and Training</td>
<td>2.69</td>
<td>0.74</td>
<td>182</td>
</tr>
</tbody>
</table>

Figure 11. Composite Percentages of Communication Competence
Research Question 3: Do conflict resolution self-efficacy scores among healthcare professionals differ based on demographic characteristics?

To answer Research Question 3, one t-test and eight analyses of variance (ANOVA) were conducted. These statistical analyses were conducted to determine whether conflict resolution self-efficacy scores differed based on the demographic
characteristics of the participants. The t-test was conducted to determine whether there was a statistically significant difference between the scores of males and females on the conflict resolution self-efficacy scale. A t-test was conducted (rather than an ANOVA) because gender is comprised of only two levels (male and female). The t-test indicated no statistically significant difference between the scores of male healthcare professionals ($M = 3.67$, $SD = 0.61$) and the scores of female healthcare professionals ($M = 3.66$, $SD = 0.51$) on the conflict resolution self-efficacy scale, $t (180) = .120$, $p = .905$.

One-way ANOVAs were then conducted on each of the remaining eight demographic characteristics, which included the following: (1) age, (2) country of residence, (3) academic discipline, (4) highest degree obtained, (5) professional role, (6) years of experience in healthcare, (7) years of experience working with current team, and (8) number of interprofessional teams worked on throughout professional career. ANOVAs that were conducted on demographic variables 2 through 5 (i.e., country of residence, academic discipline, highest degree obtained, and professional role) indicated no statistically significant differences. For example, there were no statistically significant differences on CRSE scores among healthcare professionals from Canada, U.S.A., Austria, etc. Likewise, there were no statistically significant differences on CRSE scores among healthcare professionals who reported their primary role as an educator versus a clinician. However, ANOVAs conducted on demographic variables 1 (age), 6 (years of experience in healthcare), 7 (years of experience working with current team), and 8 (number of teams worked on throughout career) indicated statistically significant differences ($p < .05$). The effect size for all four statistically significant demographic variables was small (see Table 8).
Table 8

Results of an Analysis of Demographics Characteristics and Conflict Resolution Self-Efficacy Scores

<table>
<thead>
<tr>
<th>Demographics</th>
<th>df</th>
<th>Mean Sq.</th>
<th>F</th>
<th>p</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>4</td>
<td>.691</td>
<td>2.601</td>
<td>.038</td>
<td>Small</td>
</tr>
<tr>
<td>Country Working In</td>
<td>4</td>
<td>.078</td>
<td>.279</td>
<td>.891</td>
<td>Small</td>
</tr>
<tr>
<td>Discipline</td>
<td>13</td>
<td>.180</td>
<td>.641</td>
<td>.817</td>
<td>Small</td>
</tr>
<tr>
<td>Degree Obtained</td>
<td>6</td>
<td>.348</td>
<td>1.280</td>
<td>.269</td>
<td>Small</td>
</tr>
<tr>
<td>Professional Role</td>
<td>6</td>
<td>.344</td>
<td>1.256</td>
<td>.280</td>
<td>Small</td>
</tr>
<tr>
<td>Years of Experience in Healthcare</td>
<td>3</td>
<td>.883</td>
<td>3.425</td>
<td>.018</td>
<td>Small</td>
</tr>
<tr>
<td>Years of Experience with Current Team</td>
<td>3</td>
<td>.866</td>
<td>3.270</td>
<td>.023</td>
<td>Small</td>
</tr>
<tr>
<td>Number of IP Teams Worked On</td>
<td>3</td>
<td>1.02</td>
<td>3.89</td>
<td>.010</td>
<td>Small</td>
</tr>
</tbody>
</table>

Additional post-hoc analyses were conducted on the four statistically significant variables to determine which levels within each variable were significantly different from each other (see Table 9).

The first post-hoc analysis was conducted on the conflict resolution self-efficacy scores of participants in varying age groups (e.g., <30, 31-40, 41-51, 51-60, >60), \( F(4, 176) = 2.60, p = .038 \). Based on a Bonferroni post-hoc analysis, the mean item scores on the CRSE of participants who indicated that they were less than 30 years old (\( M=3.2083, SD=0.24801 \)) was significantly different (i.e. lower CRSE scores) than participants who
indicated that they were 41-50 years old (M=3.7744, SD=0.54164). This suggests that healthcare practitioners who are younger than 30 years old may become more confident in their ability to resolve conflict during their 40s. However, it should be noted that the effect size was small. The effect size was calculated and interpreted based on Morgan, Leech, Gloecker, and Barrett’s (2007) Interpretation of the Strength of a Relationship Scale.

A second post-hoc analysis was conducted on the conflict resolution self-efficacy scores of participants who reported varying number of years working within the healthcare profession (e.g., 0-5, 6-10, 11-20, >20yrs.), F(3, 179) = 3.425, p = .018. Post hoc analysis using the Bonferroni post-hoc criterion indicated that the mean item scores of the responses on the conflict resolution self-efficacy scale were statistically significantly different between participants who indicated that they have worked in the healthcare professional for 6-10 years (M=3.33, SD=.418) and those who indicated that they have worked in the healthcare profession for 11-20 years (M=3.76, SD=.458). This suggests that healthcare practitioners who have worked within the healthcare profession for 11-20 years believe more strongly in their ability to resolve conflict effectively than do healthcare professionals who have worked in healthcare for 6-10 years. However, it should be noted that the effect size was small (Morgan, Gloecker, & Barrett, 2011).

A third post-hoc analysis was conducted on the conflict resolution self-efficacy scores of participants who were active on a varying number/range of collaborative healthcare teams (e.g., 0 teams, 1-5 teams, 6-10 teams, 10+ teams), F(3, 177) = 3.8, p = .010. However, post hoc analysis using the Scheffé post-hoc criterion for significance failed to identify the specific number/range that was statistically significantly different.
Subsequently, post-hoc analysis using the Games-Howell post-hoc criterion indicated that the mean item scores of the responses on the conflict resolution self-efficacy scale were statistically significantly different between participants who indicated that they were active on 0 collaborative healthcare teams, (M=3.125, SD=.250), 6-10 collaborative healthcare teams, (M=3.750, SD=.472), and 10+ collaborative healthcare teams (M=3.739, SD=.580). This suggests that healthcare professionals who have participated on at least 6 collaborative healthcare teams believe more strongly in their ability to resolve conflict effectively than do healthcare professionals who have participated on 0 collaborative healthcare teams. However, it should be noted that the effect size was small (Morgan, Gloecker, & Barrett, 2011).

The forth post hoc analysis was conducted on the conflict resolution self-efficacy scores among participants who had varying years of experience working with collaborative teams (e.g., 0 years [not part of a collaborative team], 1-3 years, 4-6 years, more than 7 years), $F(3, 177) = 3.270, p = .023$. Collaborative teams were defined in the questionnaire items as teams that include healthcare professionals from different disciplines. A post-hoc analysis using the Tukey HSD post-hoc criterion for significance indicated that the mean item score of the responses on the conflict resolution self-efficacy scale from participants who indicated that they had more than 7 years of experience working with their current collaborative team (M=3.789, SD=.490) was significantly different than the mean item score of participants who indicated that they had 1-3 years of experience (M=3.523, SD=.539) working with their current collaborative team. This suggests that healthcare practitioners require 4 to 6 years of working with a collaborative healthcare team to develop a confidence in their ability to resolve conflict effectively.
However, it should be noted that the effect size was small (Morgan, Gloecker, & Barrett, 2011).

Table 9

*Results of Post-hoc Testing of Statistically Significant Demographic Characteristics*

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Differing Subgroups</th>
<th>p-value</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>&lt;30 and 41-50</td>
<td>.038</td>
<td>Small</td>
</tr>
<tr>
<td>Years of Experience in Healthcare</td>
<td>11-20 years and 6-10 years</td>
<td>.018</td>
<td>Small</td>
</tr>
<tr>
<td>Years of Experience with Current Team</td>
<td>&gt;7 years and 1-3 years</td>
<td>.023</td>
<td>Small</td>
</tr>
<tr>
<td>Number of Teams Worked on Throughout Career</td>
<td>6-10 teams, 10+ teams, and zero teams</td>
<td>.010</td>
<td>Small</td>
</tr>
</tbody>
</table>

Research Question 4: Is there a statistically significant relationship between communication competence and healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams?

A correlation analysis revealed a statistically significant relationship ($r=.482$, $p=.000$) between the mean item scores of participants on the communication competence scale ($M=3.68$, $SD=0.33$) and the mean item scores on the conflict resolution self-efficacy scale ($M=3.66$, $SD=0.52$). This suggests that healthcare professionals who are able to communicate effectively also believe strongly in their ability to resolve conflict effectively (see Table 10).
Table 10

*Correlation Between Communication Competence and Perceived Ability to Resolve Team Conflict*

<table>
<thead>
<tr>
<th>DV</th>
<th>IV</th>
<th>r</th>
<th>Effect Size</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conflict Resolution Competence</td>
<td>Communication Competence</td>
<td>.511</td>
<td>Large</td>
<td>.000</td>
</tr>
</tbody>
</table>

In addition to conducting correlation analyses on the mean item scores of the communication competence scale and the mean item scores of the conflict resolution self-efficacy scale, individual correlation analyses were conducted comparing (a) each of the 10 individual items that comprised the communication competence scale with (b) the mean item scores on the conflict resolution self-efficacy subscale. These correlation analyses revealed statistically significant relationships between 9 of the 10 individual items that comprised the communication competence subscale (see Table 11). The one item of the communication competence subscale that was not statistically significantly related to conflict resolution self-efficacy was “supportiveness” ($r = .066$, $p = .379$). This suggests that being supportive when conflict arises in an interprofessional collaborative healthcare environment may not be as important as other factors, such as being empathetic, assertive, and expressive.
Table 11

*Correlations Between Individual Items on the Communication Competence (CC) Subscale and Perceived Ability to Resolve Team Conflict*

<table>
<thead>
<tr>
<th>CC Subscales</th>
<th>n</th>
<th>r</th>
<th>Effect Size</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Disclosure</td>
<td>183</td>
<td>.243</td>
<td>(Small)</td>
<td>.001</td>
</tr>
<tr>
<td>Empathy</td>
<td>182</td>
<td>.233</td>
<td>(Small)</td>
<td>.001</td>
</tr>
<tr>
<td>Social Relaxation</td>
<td>181</td>
<td>.373</td>
<td>(Medium to Large)</td>
<td>.000</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>183</td>
<td>.326</td>
<td>(Medium to Large)</td>
<td>.000</td>
</tr>
<tr>
<td>Interaction Management</td>
<td>181</td>
<td>.274</td>
<td>(Small to Medium)</td>
<td>.000</td>
</tr>
<tr>
<td>Altercentrism</td>
<td>181</td>
<td>.289</td>
<td>(Small to Medium)</td>
<td>.000</td>
</tr>
<tr>
<td>Expressiveness</td>
<td>181</td>
<td>.168</td>
<td>(Small)</td>
<td>.024</td>
</tr>
<tr>
<td>Supportiveness</td>
<td>182</td>
<td>.066</td>
<td>(Small)</td>
<td>.379</td>
</tr>
<tr>
<td>Immediacy</td>
<td>182</td>
<td>.375</td>
<td>(Medium to Large)</td>
<td>.000</td>
</tr>
<tr>
<td>Environmental Control</td>
<td>182</td>
<td>.401</td>
<td>(Medium to Large)</td>
<td>.000</td>
</tr>
</tbody>
</table>

**Research Question 5:** Is there a statistically significant relationship between problem-solving ability and healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams?

A correlation analysis revealed a statistically significant relationship ($r = .336, p = .000$) between the mean item scores on the problem-solving scale ($M = 3.24, SD = .264$) and the mean item scores on the conflict resolution self-efficacy scale ($M = 3.66, SD = 0.52$). This suggests that healthcare professionals who are able to solve problems effectively also believe strongly in their ability to resolve conflict effectively (see Table 12).
Table 12

*Correlation Between Problem-Solving Ability and Perceived Ability to Resolve Team Conflict*

<table>
<thead>
<tr>
<th>DV</th>
<th>IV</th>
<th>R</th>
<th>Effect Size</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conflict Resolution Self-Efficacy</td>
<td>Problem Solving Ability</td>
<td>.336</td>
<td>(Medium to Large)</td>
<td>.000</td>
</tr>
</tbody>
</table>

Research Question 6: Is there a statistically significant relationship between conflict resolution education and training and healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams?

A correlation analysis revealed a statistically significant relationship ($r = .302$, $p = .001$) between the mean item scores on the education and training scale ($M = 2.69$, $SD = 0.74$) and the mean item scores on the conflict resolution self-efficacy scale ($M = 3.66$, $SD = 0.52$). This suggests that healthcare professionals who believe they have received adequate training in conflict resolution also believe strongly in their ability to resolve conflict effectively (see Table 13).

Table 13

*Correlation Between Education and Training (E&T) and Perceived Ability to Resolve Team Conflict*

<table>
<thead>
<tr>
<th>DV</th>
<th>IV</th>
<th>r</th>
<th>Effect Size</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conflict Resolution Self-Efficacy</td>
<td>Education and Training</td>
<td>.302</td>
<td>(Medium to Large)</td>
<td>.001</td>
</tr>
</tbody>
</table>
More specifically, an additional correlation analysis revealed a statistically significant relationship ($r=.480, p=.000$) between the mean item scores on one item of the education and training scale measuring the degree to which healthcare professionals believe they have received adequate education and training about resolving conflict within collaborative teams ($M=2.93, SD=1.05$) and the mean item scores on the conflict resolution self-efficacy scale ($M=3.66, SD=0.52$) (see Table 14). This suggests that healthcare professionals who believe they have received adequate training in conflict resolution specifically within collaborative healthcare teams also believe strongly in their ability to resolve conflict effectively.

Table 14

<table>
<thead>
<tr>
<th>Specific E&amp;T Item</th>
<th>N</th>
<th>R</th>
<th>Effect Size</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE Licensure Training</td>
<td>122</td>
<td>-.020</td>
<td>(Small)</td>
<td>.830</td>
</tr>
<tr>
<td>POST Licensure Training</td>
<td>121</td>
<td>.174</td>
<td>(Small)</td>
<td>.056</td>
</tr>
<tr>
<td>Interprofessional Training</td>
<td>122</td>
<td>.480</td>
<td>(Large)</td>
<td>.000</td>
</tr>
</tbody>
</table>

Research Question 7: Can healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams be predicted by communication competence, problem-solving ability, and/or conflict resolution education and training?

To answer Research Question 7, two multiple regression analyses were conducted. Scores on the conflict resolution self-efficacy scale (CRSE) served as the
dependent variable for both multiple regression analyses. The first multiple regression analysis was conducted using three independent variables: (a) mean item scores on the problem-solving subscale, (b) mean item scores on the communication competence subscale, and (c) mean item scores on the education and training subscale.

The analysis resulted in a statistically significant model ($F = 14.907$, $df = 3$, $p = .000$). Two of the three independent variables were statistically significant predictors of conflict resolution self-efficacy: (a) mean item scores on the communication competence subscale ($p = .000$) and (b) mean item scores on the education and training subscale ($p = .028$). These variables accounted for 37.8% and 18.1% of the change in variation of the dependent variable, respectively. This suggests that (a) an increase of one standard deviation on the communication competence subscale results in an increase of 0.378 standard deviations of the mean of the conflict resolution self-efficacy scale and (b) an increase of one standard deviation on the education and training subscale results in an increase of 0.181 standard deviations of the mean of the conflict resolution self-efficacy scale. A third independent variable (mean item scores on the problem-solving subscale) was not a statistically significant predictor of conflict resolution self-efficacy (see Table 15).
Table 15

*Multiple Regression to Determine the Ability of CC, PSS, E&T to Predict Healthcare Professionals’ Conflict Resolution Self-Efficacy*

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>T</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Competence</td>
<td>.527</td>
<td>.117</td>
<td>.378</td>
<td>4.511</td>
<td>.000</td>
</tr>
<tr>
<td>Problem-Solving Skills</td>
<td>.213</td>
<td>.118</td>
<td>.149</td>
<td>1.811</td>
<td>.073</td>
</tr>
<tr>
<td>Education &amp; Training</td>
<td>.121</td>
<td>.054</td>
<td>.181</td>
<td>2.220</td>
<td>.028</td>
</tr>
</tbody>
</table>

R = .524 (Large Effect Size)

To test for multicollinearity among the independent variables in the multiple regression analyses, the researcher conducted an iterative statistical procedure on both multiple regression models. Using SPSS, the researcher first removed the dependent variable (scores on the CRSE). Then, the researcher conducted three additional multiple regression analyses using each of the independent variables, one at a time, as the dependent variable. This procedure yielded variance inflation factors (VIFs). According to Polit and Beck (2010), VIFs are numeric values that describe the degree to which independent variables in a linear regression model are collinear. In the case of both regression models, all VIFs were below three, and the vast majority were below two, indicating a statistically acceptable degree of collinearity.

A second multiple regression analysis was conducted that included all seven of the variables that were statistically significantly correlated with conflict resolution self-efficacy. These variables were included in the multiple regression analysis as the independent variables. Scores on the conflict resolution self-efficacy scale were included as the dependent variable. The analysis resulted in a statistically significant model,
F(7,111) = 9.294, p < .01. Consequently, two of the seven independent variables were found to be predictive of perceived ability to resolve conflict. The two predictive variables were interprofessional (IP) conflict resolution education and training (p=.000) and communication competence (p=.000). The effect size of this multiple regression analysis was found to be large (R=.608) (see Table 16). These results suggest that healthcare professionals who believe strongly in their communication competence and have had IP education and training in conflict resolution feel very confident in their ability to resolve interprofessional conflicts.

Table 16

*Multiple Linear Regression Including all Statistically Significant Variables (IVs) and Conflict Resolution Self-Efficacy (DV)*

<table>
<thead>
<tr>
<th>Significant Variables</th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>T</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Competence</td>
<td>.441</td>
<td>.113</td>
<td>.315</td>
<td>3.918</td>
<td>.000</td>
</tr>
<tr>
<td>Problem-Solving Skills</td>
<td>.194</td>
<td>.113</td>
<td>.136</td>
<td>1.713</td>
<td>.089</td>
</tr>
<tr>
<td>Education and Training Specific to IPE</td>
<td>.162</td>
<td>.038</td>
<td>.340</td>
<td>4.236</td>
<td>.000</td>
</tr>
<tr>
<td>Age</td>
<td>.016</td>
<td>.538</td>
<td>.031</td>
<td>.281</td>
<td>.779</td>
</tr>
<tr>
<td>Years of Experience as Healthcare Professional</td>
<td>.033</td>
<td>.074</td>
<td>.051</td>
<td>.449</td>
<td>.654</td>
</tr>
<tr>
<td>Years of Experience with Current Team</td>
<td>.025</td>
<td>.040</td>
<td>.049</td>
<td>.617</td>
<td>.538</td>
</tr>
<tr>
<td>Amount of Teams worked on</td>
<td>.052</td>
<td>.047</td>
<td>.090</td>
<td>1.105</td>
<td>.272</td>
</tr>
</tbody>
</table>

R = .608 (Large Effect Size).
Summary of the Results

Results of the data analysis conducted with the demographic variables indicated that there were statistically significant relationships between 4 of the 9 demographic variables and healthcare professionals’ conflict resolution self-efficacy. The four statistically significant demographic variables included age, years of experience in healthcare, years with current interprofessional team, and number of collaborative teams worked on. Results also indicated that there was a statistically significant relationship between each of the individual components of conflict resolution (communication competence, problem-solving ability, and conflict resolution education and training) and healthcare professionals’ conflict resolution self-efficacy.

In addition, a multiple regression which included the three central components (IVs) and healthcare professionals’ conflict resolution self-efficacy (DV) suggested that two of the three central components (communication competence and education and training) were predictive of healthcare professionals’ perceived ability to resolve conflict. Lastly, when all statistically significant variables (e.g., three central components and four demographic characteristics) were analyzed together for predictive ability, the same two central components (communication competence and conflict resolution education and training) were found to be predictive of healthcare professionals’ perceived ability to resolve team conflict.
Chapter 5

Discussion

The purpose of this quantitative study was to identify factors that influence healthcare professionals’ self-efficacy to resolve conflicts—specifically pertaining to conflicts that occur within teams. The first section presents an introduction and summary of the study. The second section presents a discussion of the findings. The third section presents limitations, recommendations for education and practice, and recommendations for further research.

Introduction and Summary

The ability to resolve conflict successfully is an important skill for every healthcare professional but especially for members of interprofessional healthcare teams. The research literature clearly identifies the detrimental consequences that occur when members of interprofessional healthcare teams do not resolve conflict effectively—i.e., a decrease in patient safety and quality of care (Agency for Healthcare Quality and Research [AHRQ], 2008). Unfortunately, little research literature has focused on factors that influence healthcare professionals’ ability to resolve conflict. Researchers have identified communication competence, problem-solving ability, and education and training as central components of conflict resolution (AHRQ, 2008; Armour-Thomas & Hayes, 1988; 2005; Dreu & Weingart, 2003; Gerardi, 2010; Kressel et al., 2002; Porta, 2006; Seren & Ustun, 2008; Taylor et al., 2008). However, understanding the relationship between the three central components and healthcare professionals’ ability to resolve conflict between professionals has been limited.
A problematic area in investigating factors that influence an individual’s ability to resolve conflict is the research challenges that occur. For example, it is difficult for researchers to be present when authentic conflict occurs, and there is also a risk of the researchers’ presence influencing the potential of a Hawthorne effect that may skew results. However, assessing healthcare professionals’ self-reported perceptions of their ability to resolve conflict (i.e., their self-efficacy) provides a justifiable and attainable method for understanding their perceived conflict resolution ability. According to Bandura's (1994) theory of self-efficacy, perceptions of individuals about their own ability influence activity preference, task perseverance, effort expended, and ultimately the degree of success achieved. In addition, numerous studies have identified self-efficacy as a strong predictor of a person’s ability to carry out actions (Bandura, 1977; Bandura, 1986; Bandura, Reece, & Adams, 1982; Multon, Brown, & Lent, 1991; Pajares & Miller, 1994; Schunk, 1984; Stajkovic & Luthans, 1998; Wang & Wang, 2008). Therefore, perceived ability to resolve team conflict was used as the dependent/outcome variable in this study.

A questionnaire was created to determine if communication competence, problem-solving ability, and conflict resolution education and training were statistically significantly related to healthcare professionals’ perceived ability to resolve team conflict. The questionnaire included five subscales: (a) demographic characteristics, (b) communication competence, (c) problem-solving ability, (d) education and training, and (e) self-efficacy in resolving team conflict.

Data analysis methods included analysis of variance (ANOVA), correlation analyses, and multiple regressions. Results of the data analysis with the demographic
variables indicated that there was a statistically significant difference between four of the nine demographic variables (e.g., age, years of experience in healthcare, years of experience working with current team, and number of teams worked on throughout career) and healthcare professionals’ self-efficacy to resolve team conflicts. Results also indicated that there was a statistically significant relationship between each of the central components of conflict resolution (communication competence, problem-solving ability, and conflict resolution education and training) and a healthcare professional’s perceived ability to resolve team conflict.

In addition to these correlation analyses, the researcher conducted a multiple regression analysis. This analysis included the three central components (communication competence, problem-solving ability, and education and training) and a healthcare professional’s perceived ability to resolve team conflict. The results indicated that communication competence and education and training were predictive of healthcare professionals’ perceived ability to resolve team conflict. Lastly, when all statistically significant variables (e.g., three central components and four demographic characteristics) were included in a multiple regression analysis and analyzed together for predictive ability, the same two central components of conflict resolution (communication competence and conflict resolution education and training) were found to be predictive of healthcare professionals’ perceived ability to resolve team conflict. The four demographic variables were not found to be predictive of healthcare professionals’ team conflict self-efficacy.
Discussion of the Findings

The results of this study have led to five main discussion points. The discussion points include the following: (1) the communication skills essential in resolving conflict, (2) the value of problem-solving ability in resolving conflict, (3) the implications of conflict resolution education and training on resolving conflicts, (4) the impact of self-efficacy in resolving team conflict, and (5) the predictive ability of the central components (e.g., communication competence, problem-solving ability, and education and training). The section begins with a discussion of the communication skills essential in resolving team conflict.

Communication Skills Essential in Resolving Conflict

This study demonstrated that proficiency in communicating with others is significantly related to and predictive of healthcare professionals’ self-efficacy in resolving conflicts within collaborative healthcare teams. This finding has been confirmed in prior research literature (Gerardi, 2010; Seren & Ustun, 2008; Taylor et al., 2008). In fact, according to Mayer (2000), communication is at the very heart of conflict resolution. This is not surprising given that the ability to resolve conflict is an interactive process that requires a high level of understanding the message that is conveyed between the sender and receiver. Interprofessional literature suggests that language is not always understood between members of different health professions, thus causing the resolution of conflict to be extremely challenging (CIHC, 2010 & IPEC, 2011).

While results of this study and prior research have supported the idea that communication competence is essential in resolving conflict successfully, very little research has identified specific conflict resolution communication skills that are required
when working within interprofessional healthcare teams. Interprofessional healthcare teams are unique in that the environment in which healthcare professionals work frequently involves high stakes, quick decisions, and urgent action, resulting in constant stress and impatience. Scholars frequently have recommended using communication skills such as feedback, summarization of understanding, and reframing (Porta, 2006); however, in the complex and uncertain environment of healthcare, these skills may not be realistic or practical to implement. In addition, novice practitioners are often so overwhelmed with mastering the basic skills of their trade that taking time to summarize and reframe their understanding in a conflicting situation is highly impractical and unlikely.

The healthcare environment is not unlike the military in that a hierarchical chain of commands is ever present. Research literature has confirmed that healthcare professionals in disciplines with a perceived lower status conform to the desires of individuals in disciplines with a perceived higher status (Nason, 1983; Sands, Stafford & McClelland, 1990). Traditionally, physicians have occupied the highest level of authority within healthcare environments because they have ultimate control over most treatment decisions. As a result, conflicts often occur between physicians and other healthcare professionals, such as nurses, technicians, etc. (Boone et al., 2008; Leever et al., 2010). Unfortunately, this status-laden environment typically does not support a culture of mutual respect and effective communication. For example, if an apprehensive novice nurse is intimated by the status of an attending physician, it is unlikely the nurse will call the physician in the middle of the night to report a suspected change in a patient’s
condition. This reluctance and ultimate failure to communicate due to inherent power differentials can result in patient safety issues, which can lead to poor patient outcomes.

A contribution of this study is that based on the Communication Competence Scale (Rubin & Martin, 1994), this study has identified four communication skills that are statistically significantly related to healthcare professionals’ confidence in their ability to resolve team conflict. The four skills include (a) environmental control, (b) immediacy, (c) assertiveness, and (d) social relaxation. Each of these four skills has application to the chaotic, stressful healthcare environment. The first communication skill, environmental control, is especially relevant to conflict resolution that occurs within healthcare teams given that the demanding healthcare environment requires the ability to remain calm in the face of adversity. Healthcare leaders who are unable to manage successfully life-threatening situations in which there is disagreement about treatment options often prevent or inhibit patient-centered collaborative care. Patient-centered collaborative care encourages healthcare providers to work together to provide care based on trust, respect, and an understanding of each team member’s skills and knowledge (Canadian Medical Association, 2007).

The second communication skill identified in this study as having application to conflict resolution among healthcare teams is immediacy. Immediacy has been defined as “the ability to demonstrate to others that one is available for communication through nonverbal behaviors such as facing the other directly, adopting an open stance, and using direct eye contact” (Spizberg & Hecht, 1984, p. 575). Although the healthcare environment is fast paced and often allows little time for healthcare professionals to interact, when confrontational interactions do occur, demonstrating through nonverbal
behaviors a willingness to work towards a solution will help move a hostile situation towards one of mutual understanding. In addition, by taking an open stance, healthcare professionals can quickly establish a climate in which dialogue is encouraged without defensive behaviors that are often detrimental to effective conflict resolution (Egan, 2010).

The third communication skill identified in this study as having application to conflict resolution among healthcare teams is assertiveness. Due to the often ambiguous nature of healthcare, the third skill, assertiveness, is particularly significant. Conflicts based on role clarification are common in acute and primary care settings. For example, a novice intensive care nurse may not be aware that respiratory therapists are competent in taking hemodynamic readings. This lack of understanding could result in a “turf war,” or role conflict about who is more qualified to perform this highly technical procedure (Hendel, Fish, & Berger, 2007). Assertiveness in such a situation allows individuals to stand up for their own rights without denying the rights of others (Henderson & Furnham, 1982). This assertiveness will then allow for mutual understanding and create dialogue for a resolution.

The fourth skill in this study as having application to conflict resolution among healthcare teams is social relaxation. Social relaxation, has been defined as a “lack of anxiety or apprehension in everyday social interactions; an ability to handle negative reactions or criticism without undue stress” (Rubin & Martin, 1994, p. 34). Research within the conflict resolution literature has emphasized the importance of emotional control and anger management when faced with conflict (Porta, 2006; Seren & Ustun, 2008). In healthcare environments, emotions can run very high because patients’ lives are
often at stake, and healthcare professionals do not want to make mistakes; however, if an environment is too intensely stressful, and there is a sense of powerlessness in interactions, sound decision making is unlikely to occur. However, creating an agreement in a teambuilding environment where the team agrees on a process to handle disagreements can result in a more peaceful, productive atmosphere. A collaborative environment has been shown in the interprofessional literature to lead to agreeable resolutions to high-stakes conflicts (Adams, Orchard, Houghton, & Ogrin, 2014).

**Value of Problem Solving Ability in Resolving Conflict**

According to Deutsch and Coleman (2000), a constructive approach to resolving conflict is to consider conflict as a problem that needs to be solved. Based on this theory, it is not surprising that the results of this study indicated that problem-solving ability is statistically significantly related to healthcare professionals’ confidence in their ability to resolve conflict. This significant relationship between problem solving ability and the ability of healthcare professionals to resolve conflict may be due to the fact that healthcare professionals are expected to solve complex problems that affect the lives of millions of patients every day. For example, pharmacists are often called upon to advise physicians, nurses, and other health professionals about life-threatening drug-drug interactions. Social workers must make critical decisions about discharge plans for patients with multiple resource needs. However, at times, the decisions of one healthcare provider (e.g., “do not discharge patient to home”) may conflict with the decisions of another healthcare provider (e.g., “discharge patient to home”), thus creating chaos and confusion for the patient. However, if healthcare providers possess the ability to problem
solve through a conflicting treatment decision, chances for an effective resolution are far
greater.

Resolution of conflicts among healthcare professionals who have been raised with
differing philosophies, beliefs, and values can be challenging. For example,
philosophically, nurse practitioners (NPs) emphasize disease adaptation, health
promotion, wellness, and prevention; however, physicians are disease centered, and they
emphasize the biological/pathologic aspects of health—e.g., assessment, diagnosis, and
treatment (Maryland Academy of Physician Assistants, 2012). These philosophical
differences can create conflict when NPs and physicians attempt to collaborate but
struggle with treatment issues, such as end-of-life decisions. Solving an ethical problem,
such as whether to treat an elderly patient diagnosed with cancer aggressively or through
palliative care, may result in a conflict among practitioners. Unfortunately, conflicting
viewpoints among practitioners can lead to confusion and frustration for patients and
their families as they attempt to make informed decisions. Based on the research
literature and the results of this study, those practitioners who possess strong problem-
solving skills and are confident in their ability to resolve conflict should be better
prepared to handle these complex healthcare situations provided the workplace
environment and team relationships with other members are conducive when they arise.

**Implications of Conflict Resolution Education and Training**

Preparing healthcare providers to resolve interprofessional conflicts effectively
has not been a priority in most health science curriculums. However, many studies in the
research literature have emphasized the benefits that result from providing conflict
resolution training to healthcare professionals: a safer work environment, improvements
in quality of care, and a reduction in malpractice lawsuits (Gerardi, 2003, 2010; Kressel et al., 2002; Marshall & Robson, 2005; Ridge, 2007). The results of this study indicated that healthcare professionals themselves do not believe they have been adequately prepared to resolve conflict. In fact, only 30% agreed or strongly agreed that they have received adequate training in conflict resolution within their own profession or across professions in their pre-or post-licensure educational programs.

The fact that many healthcare professional do not feel they have had adequate training in conflict resolution is not surprising considering that resolving conflict is often considered a “soft skill” and not as important as a “hard skill,” such as diagnosing and treating abnormalities. Other soft skills, such as listening skills, interpersonal skills, and communication skills, are often neglected in healthcare curriculums (Van Staden et al., 2006). A question worth considering is the impact that a lack of training in these areas has on the healthcare industry (IOM, 2000). According to Sommer (2011), healthcare professionals must be prepared to handle the pressures with which healthcare facilities are faced, such as lowering costs while increasing patient outcomes and satisfaction levels. This balance is very difficult to achieve, but those healthcare professionals who possess soft skills, such as interpersonal and social skills may not be valued by institutions for their ability to communicate clearly with patients. At the same time ability to communicate treatment plans and diagnoses clearly to patients has been shown in the literature to improve patient satisfaction rates and prevent unnecessary readmissions, thus saving hospitals money (Sommer, 2011).

Universities preparing future healthcare professionals have not yet fully embraced the call to educate healthcare students in soft skills, such as conflict resolution. This is
somewhat understandable considering health science curricula are already overloaded with essential content that must be included in order for programs to maintain their accreditation. In addition, state-of-the-art technologies, such as high-fidelity human patient simulators, virtual immersive experiences, and surgical robotics, are being integrated into health science curriculums, at the expense of development of relational learning within and across professions. However, high-tech, interactive experiences cannot be avoided due to the fact that students today expect to be impressed with technology that teaches anatomy in 3D as opposed to 2D. Consequentially, students raised as “digital natives” in a world dominated by computers, video games, social networking sites, and cell phones (Taylor, 2010) may not see the value in learning soft skills that do not require the use of high-tech equipment.

This situation is further complicated by the fact that accreditation agencies have begun to require evidence of soft skills, such as interprofessional communication, in most health science curricula. For example, the American Association of Colleges of Nursing and the Accreditation Council for Graduate Medical Education both require evidence that students are taught how to work as part of interprofessional healthcare teams. In addition, the CanMEDS Physician Competency Framework requires that physicians are prepared to work effectively within a healthcare team (Royal College of Physicians and Surgeons of Canada, 2013). However, this charge to educate students about how to work in teams, and more specifically how to resolve conflict that occurs among teams is extremely difficult because of disagreements among experts about what exactly needs to be taught. The research literature provides information about conflict resolution training programs for individuals who wish to become mediation counselors or peacemakers (Kressel,
Kennedy, Lev, & Hymann, 2002; Runde & Flanagan, 2010); however, very few of these training programs address the unique individual skills required when resolving conflict among interprofessional healthcare teams.

Interestingly, healthcare professionals who self-reported that they have received adequate education and training in conflict resolution specifically related to resolving conflicts that occur among collaborative teams were also very confident in their ability to resolve conflicts. It was beyond the scope of this study to identify the specifics of the participants’ conflict resolution training; however, based on the lack of information in the literature specifically focused on conflict resolution within interprofessional healthcare teams, it is possible these individuals received only an overview of conflict resolution. This overview was likely part of a comprehensive program teaching all aspects of interprofessional collaborative practice. Thus, although the specific criterion for teaching interprofessional conflict resolution skills has not yet been established, it seems that those individuals who have had some education in conflict resolution and/or interprofessional collaborative practice feel more confident in resolving conflict than those who have not received such education and training. At the same time in this study we did not verify if their perception of ability and actual ability were consistent.

**Impact of Self-Efficacy in Resolving Conflict**

The fortitude to face the unknown and often hostile climate in which conflict occurs requires a strong belief and confidence in oneself. Bandura (1977) explained that confidence in oneself (i.e., self-efficacy) is influenced, in part, by social interactions. More specifically, self-efficacy develops through four major sources: (a) mastery experiences, (b) social modeling, (c) social persuasion, and (d) physiological responses.
In this study, 70% of healthcare professionals reported that they felt confident in their ability to resolve team conflicts. It is possible that the high level of confidence among these healthcare professionals can be accounted for by concepts developed in Bandura’s theory of self-efficacy (1977). This section explores three of the four sources through which self-efficacy evolves (i.e., mastery experiences, social modeling, and social persuasion) in the context of healthcare professionals’ perceived ability to resolve conflicts that occur among collaborative teams. The physiological responses of the participants were not measured, and therefore the influence of physiological responses on self-efficacy is beyond the scope of this study.

The first major source through which self-efficacy develops, mastery experiences, influences individuals’ self-efficacy because when individuals perform tasks successfully, they become more confident in their ability to perform the same task again successfully (Bandura, 1977). In this research study, healthcare professionals who reported having had 11-20 years of experience in healthcare felt very confident in their ability to resolve team conflict. It is possible that during their years of experience in the healthcare field, they successfully resolved a variety of team conflicts, thus building confidence in this skill. In fact, research scholars have suggested that clinical experience is the most significant factor in building healthcare professionals’ confidence in communication and clinical skills (Hagbaghery, Salsali, & Ahmadi, 2004; Hecimovich & Volet, 2009).

However, according to the research literature, self-confidence among healthcare professionals has sometimes been exaggerated in several areas, such as clinical competence and communication (Bauman, Deber, & Thomson, 1991; O’Daniel &
Rosenstein, 2008). For example, research scholars studying the phenomenon of overconfidence among healthcare professionals found that clinicians are often highly confident in their treatment decisions even when there is no consensus among their colleagues about what the optimal treatment should be (Bauman, Deber, & Thomson, 1991). In addition, research scholars have found that doctors are often overconfident in their beliefs about whether or not a healthcare environment is collaborative (O’Daniel & Rosenstein, 2008). Thomas, Sexton, and Helmreich (2003) found that nurses often rate the quality of collaboration and communication with physicians as low or very low, whereas physicians often rate collaboration and communication with nurses as high or very high.

Despite problematic issues related to overconfidence, a reasonable sense of confidence plays an important role in healthcare professionals’ clinical reasoning abilities (Hagbaghery, Salsali, & Ahmadi, 2004). Healthcare professionals are in unique situations in that every day they encounter complex and challenging healthcare issues to resolve. Without a strong belief in one’s abilities to face these difficult and demanding challenges, working within the healthcare environment could be extremely difficult. For example, making a decision about life-saving measures requires self-assurance, self-reliance, and conviction about one’s decisions. Timidity, uncertainty, and doubt in many circumstances inevitably leads to poor patient outcomes. The key challenge for practitioners is to achieve balance and develop an appropriate degree of confidence that aligns with one’s abilities, skills, and knowledge. The research literature has shown that practitioners who exercise an appropriate degree of confidence create trust, adherence to treatment plans, and improvements in patient-provider relationships (Berner & Graber, 2008).
The second major source though which self-efficacy develops, social modeling, influences individuals’ self-efficacy because observing others similar to oneself successfully complete a task increases individuals’ confidence that they too possess the ability to master comparable activities (Bandura, 1977). In the healthcare setting, novice healthcare practitioners are almost always mentored by shadowing or observing experts in real-life situations. During this mentoring period, it is likely that novice practitioners will observe experts in situations that involve conflict. Based on Bandura’s theory, if novice practitioners witness conflicts being successfully resolved, they may believe intuitively that they too can resolve interprofessional conflict. However, the research literature contradicts the assumption that observation alone leads to competency in a skill as complex as conflict resolution (Association of American Medical Colleges, 2008).

A possible explanation for the discrepancy between the results of this study which suggests that healthcare professionals believe strongly in their ability to resolve conflict and the research literature which suggests that healthcare professionals are not adequately prepared to resolve conflict (Gerardi, 2003, 2010; Marshall & Robson, 2005) is the common mentoring mantra among novice healthcare practitioners: “Fake it ‘til you make it.” In other words, novice healthcare practitioners in the face of complex healthcare challenges are often encouraged to “play the role” of healthcare practitioner and figure out solutions to problems as they arise. Because the healthcare environment is by nature often overwhelming for novice practitioners, hiding uncertainty is a skill most healthcare professionals perfect very early in their healthcare careers.

The third major source though which self-efficacy develops, social persuasion, influences individuals’ self-efficacy because receiving verbal encouragement from others
helps individuals overcome self-doubt and focuses attention on their belief that they possess the skills and capabilities required to succeed (Bandura, 1977). The high conflict resolution self-efficacy scores found among participants in this study could stem from the fact that at one time in their careers they successfully resolved a conflict and subsequently received positive feedback. For example, the trend in healthcare to work collaboratively has led to the institution of team meetings or briefings prior to performing certain procedures (AHRQ, 2008). These team meetings have been shown to prevent conflict and allow healthcare professionals to provide positive and negative feedback to one another (AHRQ, 2008). This interactive activity provides an opportunity for social persuasion or reinforcement of specific behaviors to occur. According to the research literature, team briefings have prevented near misses and allowed errors to be identified before patients were harmed (Lingard et al., 2006).

Results of this study also indicated that the conflict resolution self-efficacy of healthcare professionals younger than 30 years old was significantly different from participants 41-50 years old. It is possible that the younger healthcare professionals have not yet taken a lead role in resolving team conflict and therefore have not received positive reinforcement from their colleagues for doing so. Benner’s Theory of Novice to Expert (1984) suggests that there are five stages in developing clinical expertise. This well-known nursing theorist has suggested that it is not until the third stage that nurses demonstrate efficiency, become coordinated, and have confidence in their actions (Benner, 1984). Benner’s theory and the results of this study both suggest that healthcare professionals need experience in healthcare before feeling confident in their ability to resolve conflicts that occur among collaborative teams.
Predictive Ability of the Central Components

The results of this study have determined that healthcare professionals’ belief in their ability to resolve conflict, when all variables are considered, is influenced by two factors: (a) education and training and (b) communication competence. A plausible explanation for this finding is that both components (education and training, and communication) are complementary. According to the research literature, most conflict resolution education and training programs include discussions about the importance of communication when resolving conflict (Gerardi, 2010; Runde & Flanagan, 2010). In addition, most national team training programs and interprofessional competency frameworks emphasize the importance of teaching healthcare professionals how to communicate effectively when resolving conflicts (AHRQ, 2010; CIHC, 2010; IPEC, 2011). Therefore, due to the relationship between these two factors, it is not surprising both were found to be strong predictors of healthcare professionals’ perceived ability to resolve conflict.

The contribution of this study is in support of the need for education and training to influence healthcare professionals’ self-efficacy to resolve conflicts within and across interprofessional teams. Healthcare is a high-risk industry that requires efficient and effective teamwork to provide safe patient care; therefore, conflict resolution education and training must be geared towards teaching healthcare professionals how to resolve conflicts occurring in interprofessional teams. Conflict resolution training that is focused on teaching mediation and peacekeeping skills likely will not help healthcare professionals learn to resolve the conflicts unique to healthcare. More appropriate processes that allow the sharing of perceptions on the situation from each team member’s
perspective and then considering all viewpoints to arrive at a shared decision is the ideal. In this way biases do not control the decision but a more rational consideration of a variety of perspectives does. This collaborative model is suggested to enhance the quality of decision making (Linden, 2002).

Additional rationale for the finding that education and training and communication competence are predictive of healthcare professionals’ confidence in their ability to resolve conflict relates to Bandura’s (1994), belief that self-efficacy influences an individual’s choice of activities, efforts, and persistence. Given that conflict resolution training often involves the use of communication skills, those healthcare professionals who feel confident in their communication skills are more likely to gain greater outcomes from conflict resolution training sessions than those who are not confident in their communication skills. Therefore, it is not surprising that healthcare professionals who reported that they were confident in their ability to communicate also reported that they were confident in their ability to resolve conflicts. A distinct contribution of this study is the identification of the specific communication skills (environmental control, immediacy, assertiveness, and social relaxation) found in this study to predict healthcare professionals’ confidence in their ability to resolve conflict.

Results of this study also suggest that an individual’s problem-solving ability is related to healthcare professionals’ belief in their ability to resolve conflict. The finding that problem solving plays a role in conflict resolution is also supported in the research literature, specifically by Deutsch and Coleman (2000), who theorized that resolving conflict is similar to solving a puzzle and requires a collaborative effort. In addition, the research literature has emphasized the need to use a step-by-step problem-solving process.
when resolving conflict, such as the classic steps identified by Gordon (1962) which included the following: (1) define the problem, (2) generate possible solutions, (3) evaluate the solutions, (4) decide on mutually acceptable solutions, (5) implement the solution, and (6) evaluate the solution.

However, the influence of problem-solving ability was not found to be a predictor of self-efficacy in resolving conflict. This finding may be due to the fact that resolving conflict is a highly social and complex process requiring the ability to work with others to reach resolution, whereas problem-solving ability is typically considered to be an individual, analytic skill that may not necessarily require social interaction. The reason that problem-solving ability did not result in a stronger predictive ability may be due to the fact that the ability to resolve conflict relies more heavily on social abilities, such as communicating, than it does on individual abilities, such as problem solving.

The results of this study have also determined that healthcare professionals’ belief in their ability to resolve conflict, when all variables are considered, is not influenced by demographic characteristics such as age, country of residence, or academic discipline. Analysis did discover that four demographic characteristics were related to perceived ability to resolve conflict; however, none of these demographic characteristics appeared to have a strong enough relationship to be considered predictive of perceived ability to resolve conflict.

In fact, there was a very small difference in perceived ability to resolve conflict among healthcare professionals from across five different countries. Therefore, a contribution to the research literature is that individualistic orientations do not seem to be strong predictor of confidence in resolving conflict. However, obtaining education and
training and possessing a strong belief in one’s communication competence are strong predictor of healthcare professionals’ self-efficacy in resolving team conflicts.

**Limitations**

Four limitations that may have influenced the results of this study include the following: (a) distribution of the sample, (b) risk of social desirability response bias, (c) personality characteristics of participants, and (d) implications associated with the questionnaire. The first limitation, distribution of the sample, potentially influenced the results of this study in that the majority (87%) of participants were female. Research literature has suggested that females are better at communicating (Tanne, 2000) whereas males are better at analytical tasks, such as problem-solving (Quinn & Spencer, 2001). Therefore, the results indicating that healthcare professionals perceive their communication competence as high may be based on the fact that the majority of participants were female, and, in turn, the results suggesting that healthcare professionals are competent communicators (as well as conclusions derived from these results) may not represent male and female healthcare professionals but rather only female healthcare professionals. In addition, results related to problem-solving ability may have been influenced by the predominantly female gender distribution of the sample. Specially, the fact that problem-solving ability was not found to be a predictor of healthcare professionals’ perceived ability to resolve conflict could have been influenced by the low percentage of male participants in the study.

The second limitation, risk of social desirability response bias, may have influenced the results of this study. According to Polit and Beck (2010), research participants may sometimes misrepresent their attitudes and beliefs by providing
questionnaire responses that are consistent with current socially acceptable views. In this study, healthcare professionals may have found it more socially acceptable to portray themselves (especially in a healthcare setting) as having a high degree of confidence in their ability to resolve conflicts, to communicate effectively, and to solve problems effectively, thus potentially creating inaccurate and artificially high scores on these particular subscales.

The third limitation, personality characteristics of the participants, may have influenced the results of the study due to the fact that temperament can affect how individuals’ make decisions (Eriksen, Nørgaard, & Tomsen, 2012). In this study, the temperaments of the participants’ were not assessed and therefore their effect on the study findings is unknown. A measurement tool such as the Meyers-Brigg could have been utilized to assess the personality types of the participants (Briggs Meyers & Meyers, 1980). These results could have then been correlated with scores on the conflict resolution self-efficacy scale to determine if there was a relationship between personality type and perceived ability to resolve conflict.

The fourth limitation, implications associated with the questionnaire, may have influenced the results of the study for several reasons. First, the Team Conflict Self-efficacy Subscale (Stone & Bailey, 2007) was used in this study to assess healthcare professionals’ self-efficacy in resolving team conflicts. The Team Conflict Self-efficacy Subscale was originally designed to assess business professionals’ self-efficacy in resolving team conflict. Unfortunately, healthcare professionals experience unique types of conflict (e.g., hierarchical conflicts, role conflicts, etc.) that may not have been captured by the Team Conflict Self-efficacy Subscale. A questionnaire specifically
designed to assess healthcare professionals’ self-efficacy in resolving team conflict was not available; therefore, the inferences drawn (e.g., healthcare professionals’ elevated perceived ability to resolve team conflicts) may not completely reflect all aspects of resolving team conflict that may be present in healthcare settings.

The second reason the questionnaire may have influenced the results is that the Interpersonal Communication Competence Scale (Rubin & Martin, 1994) used in this study to assess interprofessional communication competence was originally developed to assess interpersonal communication competence. The researcher was unable to locate a questionnaire that assessed interprofessional communication competence; therefore, the researcher drew inferences about healthcare professionals’ ability to communicate based on their interpersonal communication skills. The ability to communicate interprofessionally is unique in that each healthcare profession has its own language and culture, which makes exchanging information challenging, especially when attempting to resolve conflict. It is possible that inferences drawn based on data gathered using the communication competence scale may not fully reflect the challenges unique to conflicts that occur among healthcare professionals.

The third reason the questionnaire may have influenced the results is that demographic items related to (a) the number of collaborative healthcare teams that participants worked on throughout their careers and (b) the number of years working with collaborative teams may have been interpreted differently by participants. The stem of the item defined “collaborative healthcare teams” as “teams that include healthcare professionals from different disciplines”; however, some participants may have defined “collaborative healthcare teams” as a formal group of professionals that consistently
work together while other participants may have defined “collaborative healthcare teams” as an informal, ad hoc group of professionals who at any given time happen to care for the same patients. The difference in interpretation of the term “collaborative healthcare teams” could have influenced the results of the study. Specifically, the finding that healthcare professionals who have participated on at least 6 collaborative healthcare teams believe more strongly in their ability to resolve conflict than healthcare professionals who have participated on zero collaborative healthcare teams may be incorrect due to confusion among participants related to the interpretation of the term “collaborative healthcare teams”. In addition, the finding that healthcare professionals require 4 to 6 years of working with a collaborative team to develop a strong belief in their ability to resolve conflict could also be incorrect due to confusion among participants related to the interpretation of the term “collaborative healthcare teams”.

**Recommendations for Further Research**

Recommendations for further research include repeating the study with a larger sample size to gain a more representative distribution of demographic characteristics, such as equality in gender, professional discipline, and professional role. A representative distribution in demographics may yield different or additional results for analyses. In addition, repeating the study with a larger sample size would generate a more representative picture of the population. Moreover, a larger sample size would limit the influence of outliers or extreme observations.

Independent examination of the three key components found to be statistically significantly related to conflict resolution self-efficacy among collaborative teams (i.e., communication competence, problem-solving ability, and education and training) would
strengthen the validity of the findings. In addition, studies that observe conflicts as they occur in healthcare settings would likely provide further understanding of actual ability to resolve conflict as opposed to perceived ability to resolve conflict.

However, the most significant recommendation centers on testing the effectiveness of the education and training criteria suggested by this study results. For example, designing experimental randomized studies that compare intervention groups who receive the training with control groups who do not would advance the study of conflict resolution within interprofessional healthcare settings. In addition, studies that directly observe and assess healthcare professionals in real-life situations who have received conflict resolution training would be instrumental in determining whether the training with an emphasis on communication skills essential for resolving conflicts and problem-solving processes do in fact help healthcare professionals to resolve conflicts effectively.

**Recommendations for Education and Practice**

The ability to resolve conflicts that occur among collaborative healthcare teams is an important component in creating and maintaining a collegial, safe, and healthy work environment for healthcare professionals and the patients they serve. The results of this study have led to recommendations for educators preparing future healthcare practitioners and for clinicians involved with direct patient care.

One of the study’s findings suggested that educating healthcare professionals about conflict resolution should be focused specifically on how to resolve conflicts that occur within interprofessional healthcare teams. The results of this study also found that conflict resolution education during pre-licensure preparation and post-licensure
preparation has not been perceived as effective by healthcare professionals. Based on these findings, efforts must be made to improve pre-licensure and post-licensure conflict resolution education with an emphasis on how to resolve conflicts that occur within interprofessional healthcare teams.

Another result that has significant implications for educators is the finding that communication competence plays an important role in healthcare professionals’ self-efficacy to resolve conflict. Therefore, an additional component of conflict resolution education and training must focus on teaching communication skills—specifically, teaching the communications skills identified in this study as having a strong effect on ability to resolve team conflict. The four interprofessional conflict resolution communication skills identified in this study as having a strong effect on perceived ability to resolve conflict included the following: environmental control, assertiveness, immediacy, and social relaxation. Recommended teaching strategies that can be utilized to instruct students on these important skills will be discussed.

Teaching healthcare students how to be in control of their environment can be accomplished by instructing healthcare students on ways to create an atmosphere of mutual trust and support among their colleagues. A key component of the skill, environmental control, is to understand that conflicts need to be resolved calmly and collaboratively without creating more discord in the already chaotic environment of healthcare. The second skill, immediacy, is defined as the ability to demonstrate to others that an individual is available and open to dialogue. Teaching this skill can be accomplished by explaining to students the importance of nonverbal behaviors such as
facing the other directly, adopting an open stance, using direct eye contact, and having a pleasant facial expression (Spizberg & Hecht, 1994).

The third conflict resolution communication skill, assertiveness, can be taught by demonstrating to students the technique of standing up for one’s rights without denying the rights of others. Portraying confidence is critical in the hierarchical environment of healthcare particularly when a healthcare professional with a lower perceived status disagrees with a healthcare professional of a higher perceived status. Role playing would serve as an ideal strategy for teaching assertiveness. The last skill, social relaxation, can be taught by helping students to become less apprehensive in the healthcare environment. Engaging students in activities such as interprofessional simulations would provide an excellent forum for helping healthcare students become more comfortable engaging in dialogue with students from differing academic disciplines.

Findings from this study have also led to recommendations for practice. For example, this study suggests that when healthcare professionals are given adequate conflict resolution education and training including (a) training that is specific to interprofessional teams, (b) teaching communication skills specific to resolving interprofessional conflict, and (c) teaching the steps of a problem-solving process, self-efficacy to resolve conflict should improve. Considering the detrimental effects poor conflict resolution has been shown to have on organizations’ overall team performance (De Dreu & Weingart, 2003; Fargoson & Haddock, 1992), healthcare leaders in the practice settings should give serious consideration to actively educating and training employees how to resolve interprofessional conflicts effectively. In addition, human resource departments should consider and perhaps even assess candidates’
communication and problem-solving skills when hiring. Lastly, efforts should be made to work collaboratively with educators to assure that conflict resolution training results in positive outcomes for all constituents.

In conclusion, conflicts that occur within the healthcare environment have been shown to result in devastating outcomes for employees and the patients they serve, yet the educational system is failing to train healthcare students how to effectively resolve these conflicts. There is great potential in the findings of this study that warrants recognition, dissemination, and outcome evaluation from educators and clinicians engaged in interprofessional education and practice. Conflicts within collaborative interprofessional teams can be resolved effectively, but first healthcare students and healthcare professionals must be taught effective conflict resolution techniques that are grounded in evidenced-based research.
References


Hello,

My name is Marty Sexton and I am currently in the data collection phase of my doctoral dissertation at the University of Toledo in Toledo, Ohio. If you are a licensed healthcare professional, please consider responding to a questionnaire related to interprofessional conflict resolution. The questionnaire requires less than 10 minutes of your time to complete. If you are willing to participate, please click on the link below to instrument. [https://utoledocon.us2.qualtrics.com/SE/?SID=SV_0TA6xJrZEmGeZdX](https://utoledocon.us2.qualtrics.com/SE/?SID=SV_0TA6xJrZEmGeZdX)

Thank you in advance for your participation, it will truly be valued.
Sincerely, Martha Sexton, Ph.D. (candidate), RN, MSN
University of Toledo-419-383-6736
Appendix B

Informed Consent

ADULT RESEARCH - INFORMED CONSENT INFORMATION

*Determinants of Healthcare Professionals Self-Efficacy to Resolve Conflicts among Interprofessional Collaborative Teams*

**Principal Investigator:**

Dr. Snejana Slantcheva-Durst, Associate Professor, 419-530-5673

Martha Sexton MSN, RN, CNS, Student Investigator, 419-383-6736

**Purpose:** You are invited to participate in the research project entitled, “Determinants of Healthcare Professionals' Self-Efficacy about Conflict Resolution within Interprofessional Collaborative Teams” which is being conducted at the University of Toledo under the direction of Dr. Snejana Slantcheva-Durst. The purpose of this study is to better understand healthcare professional’s self-efficacy towards conflict resolution within interprofessional collaborative healthcare teams.

**Description of Procedures:** This research will take place at the Collaborating Across the Borders Conference June 11-14, 2013. You will be asked to complete one 35-item questionnaire in which you will be asked questions about your confidence in resolving interprofessional conflicts. Your participation will take about 10 minutes.

**Potential Risks:** There are minimal risks to participation in this study, including loss of confidentiality. Minimal risks may be anticipated in the completion of the 10-minute survey. Because you will be asked to reflect on experiences in which you have encountered interpersonal conflict in the workplace, some slight mental discomfort or stress may occur. If so, you may stop at any time.

**Potential Benefits:** The only direct benefit to you if you participate in this research is that you may gain a deeper understanding of self-efficacy in conflict resolution within interprofessional healthcare teams.

**Confidentiality:** The researchers will make every effort to prevent anyone who is not on the research team from knowing that you provided this information, or what that information is. In addition, all data generated through the questionnaire will be kept anonymous. Although we will make every effort to protect your confidentiality, there is a low risk that this might be breached.
**Voluntary Participation:** Your refusal to participate in this study will involve no penalty or loss of benefits to which you are otherwise entitled and will not affect your relationship with The University of Toledo or the Collaborating Across the Borders conference committee. In addition, you may discontinue participation at any time without any penalty or loss of benefits.

**Contact Information:** Before you decide to accept this invitation to take part in this study, you may ask any questions that you might have. If you have any questions at any time before, during or after your participation or experience any physical or psychological distress as a result of this research you should contact a member of the research team (Dr. Slantcheva- Durst at 419-530-5673). If you have questions beyond those answered by the research team or your rights as a research subject or research-related injuries, please feel free to contact the IRB Chair at (419) 530-2844.

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**THE UNIVERSITY OF TOLEDO**

**SOCIAL, BEHAVIORAL & EDUCATIONAL INSTITUTIONAL REVIEW BOARD**

The research project described in this consent has been reviewed and approved by the University of Toledo SBE IRB for the period of time specified below.

- **SBE IRB #:** 108324  
- **Number of Subjects:** 500  
- **Project Start Date:** 5-3-13  
- **Project Expiration Date:** 5-3-14

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*By accepting the survey, you are stating that you have read and accept the information above and are giving your consent to participate in this research. You are also confirming that you are 18 years old or over.*
Appendix C

Survey Items

Q1 What is your gender?

- Male
- Female

Q2 What is your age range?

- Less than 30 years old
- 31-40 years old
- 41-50 years old
- 51-60 years old
- 61 years old or older

Q3 What is your highest degree obtained?

- Certificate
- Diploma
- Baccalaureate Degree
- Master's Degree
- Medical Doctor
- Fellowship
- Practice Doctorate
- Ph.D.

Q4 How many years have you worked as a healthcare professional?

- 0-5 years
- 6-10 years
- 11-20 years
- More than 20 years
Q5 In what country do you work as a healthcare professional?

☐ Australia
☐ Israel
☐ Canada
☐ New Zealand
☐ United Kingdom
☐ United States
☐ Other, please specify ____________________

Q6 Please state your professional discipline.

☐ Chiropractics
☐ Denistry
☐ Medical Radiation Technology
☐ Medicine
☐ Nursing
☐ Occupational Therapy
☐ Osteopathic Medicine
☐ Pharmacy
☐ Physical therapy
☐ Physiotherapy
☐ Psychiatry
☐ Psychology
☐ Public Health
☐ Radiology
☐ Respiratory Therapy
☐ Social Work
☐ Speech Language
☐ Other, please specify____________________
Q7 Please state your primary professional role.

☐ Administrator
☐ Academician
☐ Clinician
☐ Coordinator
☐ Director
☐ Manager
☐ Other, please specify ____________________

Q8 How many collaborative teams (teams that include healthcare professionals from different disciplines) have you worked on?

☐ 0
☐ 1-5
☐ 6-10
☐ More than 10

Q9 How many years have you worked with your current collaborative team?

☐ zero, I am not part of a collaborative healthcare team
☐ 1-3
☐ 4-6
☐ More than 7 years

Q10 I allow my friends to see who I really am.

☐ Strongly Disagree
☐ Disagree
☐ Neither Agree nor Disagree
☐ Agree
☐ Strongly Agree
Q11 I can put myself in others' shoes.
- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q12 I am comfortable in social situations.
- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q13 When I've been wronged, I confront the person who wronged me.
- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q14 My conversations are pretty one-sided.
- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q15 My conversations are characterized by smooth shifts from one topic to the next.
- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
Q16 My friends can tell when I'm happy or sad.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q17 My communication is usually descriptive, not evaluative.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q18 My friends truly believe that I care about them.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q19 I accomplish my communication goals.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q20 When a solution to a problem has failed, I do not examine why it didn't work.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
Q21 After following a course of action to solve a problem, I compare the actual outcome with the one I anticipated.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q22 When I have a problem, I think of as many possible ways to handle it as I can until I can't come up with any more ideas.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q23 When considering solutions to a problem, I do not take the time to assess the potential success of each alternative.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q24 When confronted with a problem, I stop and think about it before deciding on a next step.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
Q25 When making a decision, I compare alternatives and weigh the consequences of one against the other.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q26 I try to predict the result of a particular course of action.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q27 When thinking of ways to handle a problem, I seldom combine ideas from various alternatives to arrive at a workable solution.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q28 I have never received training or education in conflict resolution.

- True
- False

Q29 Throughout my PRE-licensure training, I received adequate education/ training on how to resolve conflict.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
Q30 Throughout my POST-licensure training, I have received adequate education/training on how to resolve conflict.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q31 I have received adequate education and training on how to resolve conflict that occurs specifically within collaborative healthcare teams.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q32 Consider an interprofessional collaborative team on which you have been a member in the past. Thinking about this team, please answer the remaining questions. When faced with a serious conflict or disagreement, I was able to help my team resolve the disagreement or conflict.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q33 When faced with a serious conflict or disagreement, I contributed greatly to the resolution of my team’s disagreement or conflict.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
Q34 When faced with a serious conflict or disagreement, I was more competent in resolving the team disagreement or conflict than my teammates.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q35 When faced with a serious conflict or disagreement, I knew how to bring my team to a resolution of the team disagreement or conflict.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q36 When faced with a serious conflict or disagreement, I had very good skills that helped my team resolve the team disagreement or conflict.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q37 When faced with a serious conflict or disagreement, I attempted to move my team to a resolution.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree