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A study of attitudes of faculty and administrators towards interprofessional education.

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A STUDY OF ATTITUDES OF FACULTY AND ADMINISTRATORS TOWARDS INTERPROFESSIONAL EDUCATION

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Abstract

Faculty and administrator's attitudes are believed to be important in planning and implementing successful interprofessional education in the academic environment with the goal of increasing health sciences students' competencies in interprofessional collaborative practice. The purpose of this study was to examine attitudes toward interprofessional education and identify attributes that may have an impact on those attitudes.

A survey was distributed to all faculty and administrators in the health care sciences field at this institution. Using scales adopted from peer-reviewed literature, respondents were asked questions designed to rate their attitudes toward health care teams, interprofessional education, and interprofessional learning in the academic setting. Information about each respondent's academic discipline, professional role, years worked in higher education, years of experience with interprofessional education, and gender were also collected. One open ended question was included.

A 32% response rate from those surveyed ($N = 42$) indicated that discipline had a significant effect on attitudes towards health care teams, $F(4, 35) = 4.10$, $p = .008$, $\omega^2 = .24$, as well as on attitudes towards interprofessional education, $F(4, 35) = 3.28$, $p = .022$, $\omega^2 = .17$. On average, men scored lower ($M = 3.96$) than women ($M = 4.30$) in attitudes towards health care teams, $t(38) = -2.20$, $p = .034$, two-tailed, $r = .36$. The 95% confidence interval for the mean difference of -.34 was -.65 to .03. Respondents who reported no, or some experience in

interprofessional education scored lower (M = 3.74) on attitudes towards interprofessional learning in the academic setting than those who reported being experienced (M = 4.24), $t(37) = -3.15$, $p = .003$, two-tailed, $r = .46$. The 95% confidence interval for the mean difference of -.51 was -.83 to -.18.

The findings indicated a positive attitude of faculty and administration towards interprofessional education, especially with respect to the importance of understanding collaborative roles and developing communication skills needed for interprofessional endeavors. However, there appeared to be less confidence in the feasibility of providing interprofessional learning opportunities in the current academic setting. Discipline, gender, and experience in interprofessional education were all significant attributes to overall attitudinal responses towards interprofessional education. These findings may be useful in planning successful faculty development opportunities for interprofessional education.

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CHAPTER 1

Introduction

Health care systems are becoming increasingly complex and costly, resulting in increased demands on health care workers. It is widely recognized that restructuring of the United States' health care system is a social imperative if patient needs are to be met (Institute of Medicine Committee on Quality of Health Care in America [IOM], 2001). The organization and delivery of health care services are failing to keep pace with the rapidly changing information and technologies that have fundamentally altered our current system over the past five decades. This, coupled with a concurrent increase in life expectancy, resulting in an increase in chronic conditions, create a need for substantial changes in the way health care is delivered (IOM, 2001). Collaborative practice between health care workers is seen as necessary to move fragmented health care systems to positions of strength resulting in improved health outcomes (World Health Organization [WHO], 2010).

Over the last 15 years there has been much discussion on the identification of specific competencies necessary for those graduating professionals entrusted with health care delivery to function optimally in the complex, modern health-system. According to Frenk et al. (2010),

> Health is all about people. Beyond the glittering surface of modern technology, the core space of every health system is occupied by the unique encounter between one set of people who need services and another who have been entrusted to deliver them. (p.3)

Teamwork and interprofessional education (IPE) are now seen as essential components in the transformation of the nation's health care systems (Frenk et al., 2010).

In spite of widespread agreement on the necessity and advisability of collaborative practice education, little progress has been made (Benner, Sutphen, Leonard & Day, 2010). Barr, Koppel, Reeves, Hammick, and Freeth (2005) commented, "Collaboration may be ascendant, but residual elements of competition are deeply embedded in relationships between organisations and between professions" (p. 5). Barr et al. hypothesize that the root of the problem may lie in education because therein begins the socialization of the student into his or her profession's roles, values and culture. They caution that if education is part of the problem, then education must also endeavor to be part of the solution (p. 8).

Factors that may be working against the implementation of IPE in the education of health care professionals include administrative resistance to new forms of education, traditional power distributions, initial expense of new programs, resistance of established programs, and lack of working interprofessional clinical role models (Halaas, 2008). Health professions faculty see leadership, curriculum, costs, and funding as major impediments to IPE implementation (Bennett et al., 2011). Curran, Sharpe, and Forristall (2007) suggest that diverse attitudes, training, and values contribute to health science's faculty being either uncomfortable or lacking in sufficient knowledge of IPE to teach within its constructs.

Statement of the Problem

Instructional reforms are needed to meet society's increased need for collaboration in the health care field. Higher education has traditionally valued competition and individualism, unlike many workplace organizations which value cooperation and teamwork. Collegiality and cooperation, while encouraged by funding organizations, community organizations, and individuals within academia, face barriers created by territoriality and tenure/publication

pressures (Uchiyama & Radin, 2009). Specialization of knowledge in specific fields contributes to disciplines being divided into sub-disciplines, each wanting to define its own boundaries, which leads to territorialism and is not conducive to cooperative learning (Smith & Clouder, 2010). Cooperative learning strategies are relatively new in the health education and competency-based approaches are seen as part of instructional reforms necessary to meet the health needs of the 21st century. There is a strong movement to align curriculum as an instrument of learning to achieve requisite competencies as the educational goal (Frenk et al., 2010).

Fundamentally changing curricula can be challenging. According to Ratcliff (1997), "What is difficult is getting a group of faculty from many different perspectives and prior institutional and educational experiences to work together to design or change a curriculum to be cogent, coherent and meaningful to students" (p. 6). When designing curriculum change, careful attention to faculty needs to promote positive attitudes is good practice (Civian, Gamson, Kanter, & London, 1997). Limited research has been done on attitudes and attributes that may influence attitudes toward IPE curriculum development (Curran, Sharpe & Forristall, 2007).

Background and Need

The incorporation of interprofessional learning in the education of health professions students is attracting widespread interest (Interprofessional Education Collaborative [IPEC], 2011). Benner, Sutphen, Leonard, and Day (2010) found that both in their study of nursing education and the Carnegie Foundation's study of medical education, there was an agreement that more collaborative nursing and medical education was needed. However, they also found

that coordination was lacking in curriculum plans and informal collaboration occurred rarely, even in settings where both nurses and doctors were in clinical training.

In an effort to promote the development of interprofessional skills in the United States' health care students, an expert panel sponsored by the American Association of Colleges of Nursing, American Association of Colleges of Osteopathic Medicine, American Association of Colleges of Pharmacy, American Dental Education Association, Association of American Medical Colleges, and the Association of Schools of Public Health was convened. This panel, IPEC, published core competencies for interprofessional collaborative practice (IPEC, 2011). The IPEC authors intend that the competencies will be used as "…overall guidelines to strategize and develop a program of study for their profession or institution that is aligned with the general interprofessional competency statements but contextualized to individual professional, clinical, or institutional circumstances" (p. 2). IPEC recognizes that interdisciplinary health professions education has not been widely implemented and seeks to promote changes in the interprofessional learning approaches for future health care practitioners.

A significant commitment to IPE from university administration as well as faculty is required for IPE to be successful. Bridges, Davidson, Odegard, Maki, and Tomkowiak (2011) presented three best practice models of IPE and found that: (1) Administrative support is essential for coordination of necessary changes in curriculum structure; (2) Faculty need to provide leadership, recruit other faculty, and coordinate activities between colleges; (3) Faculty need to provide student leadership both in didactic and clinical settings; and (4) Students need acknowledgement through awards, certificates or grades.

Curran, Sharpe, and Forristall (2007) believed that faculty attitudes are barriers to successful implementation of IPE. They surveyed health professions faculty and concluded that gender and experience with IPE significantly affected faculty attitudes toward IPE and stated that, "In terms of IPE evaluation, the findings also highlight the importance of measuring baseline attitudinal constructs as part of systematic evaluative activities when introducing new IPE initiatives with academic settings" (p. 896). Given the advisability of conducting a baseline assessment of faculty attitudes toward IPE in order to prepare a well thought out strategy of implementing new IPE strategies into health professions student curriculum, there is a need for this type of investigation for a school seeking to implement new IPE program.

Purpose of the Study

The purpose of this study is to examine attitudes towards interprofessional collaboration and interprofessional education to identify attributes that may affect implementation of interdisciplinary educational efforts by health and human services faculty and administration at a midwestern university. The increasing complexity of the health care system requires that health care professionals collaborate in the provision of health care services in order to optimize resources and improve health care outcomes of health care consumers. Expertise in interprofessional collaboration can be gained through IPE, however, changes to curriculum are required to incorporate IPE into health care profession education. Coordinated effort between administration and faculty is needed for successful implementation of new IPE initiatives and an analysis of baseline attitudes of administration and faculty could be of value in evaluation and planning.

The researcher will conduct a quantitative study using the items from three existing, valid surveys. The results of the assessment of faculty attitudes will be used to inform administration and faculty about attitudes toward IPE. This information will be utilized in strategic planning on the implementation of new IPE initiatives in the college with the goal of improving faculty and student preparation for collaborative health services provision.

Research Questions

- What are the attitudes of faculty and administrators towards interprofessional education?
- What are the differences in attitudes of faculty and administrators toward interprofessional education?
- What attitudes are assets to this academic setting?
- What attitudes are challenges to this academic setting?

Significance to the Field

As institutions of higher education begin to answer the call for inclusion of IPE in preparing the health care workforce for collaborative practice, the first step should be an examination of the system to determine current perceptions (Klein & Newell, 1997). In interdisciplinary studies, "Attitudes are shaped by differences of disciplinary worldview, professional training, and educational philosophy" (p. 400). The examination of the current perceptions of the faculty and administration toward interprofessional education will provide a current snapshot of attitudes that may contribute to, or detract from, the effort to incorporate interprofessional education into the academic setting.

There is little evidence-based literature to guide faculty development in interprofessional education. However, effective education design including needs assessment, development of measurable learning objectives, and evaluation can provide the foundational framework for this endeavor (Silver & Leslie, 2009). This study will contribute to an interprofessional education faculty needs assessment by identifying strengths and challenges to curricular change. This will provide a platform for understanding changes needed in the process of curricular development of objectives designed to promote student acquisition of interprofessional collaborative practice competence. Health profession colleges bear the bulk of the responsibility for the development of competencies in the health care provider of tomorrow and health care providers of tomorrow will require competencies specifically related to interprofessional collaborative practice (IPEC, 2011).

Definitions

Competence is "viewed as a behavior or set of behaviors that describe excellent performance in a particular work context" (Verma, Paterson & Medves, 2006, p. 109). *Interprofessional collaborative practice* is "when multiple health workers from different professional backgrounds work together with patients, families, carers [sic], and communities to deliver the highest quality or care" (World Health Organization [WHO], 2010, p. 7). *Interprofessional competencies* in health care are the "integrated enactment of knowledge, skills, and values/attitudes that define working together across the professions, with other health care workers, and with patients, along with families and communities, as appropriate to improve health outcomes in specific care contexts" (IPEC Expert Panel, 2011, p. 2). Reeves et al. define

interprofessional education (IPE) as "any type of educational, training, teaching or learning session in which two or more health and social care professions are learning interactively" (p. 2).

Limitations

This study will be conducted at one institution in the Midwest. It is anticipated that the number of administrators in this setting will be small. Results should not be generalized to other institutions.

Ethical Considerations

The Indiana State University Institutional Review Board will review the study. Informed consent will be obtained from the participants. Participants will be assured of the confidentiality of their responses. Participants may request a copy of the study results. There are no anticipated effects negative to participants' involvement in the study.

CHAPTER 2

Review of Literature

Interprofessional collaborative practice in the health professions is seen as key in the provision of safe and effective patient centered-care (Interprofessional Education Collaborative Expert Panel [IPEC], 2011). The review of the literature is organized into three major themes including an historical overview, the current state of interprofessional education, and faculty involvement in interprofessional education.

Reviews

History of IPE

Developing competence in interprofessional collaboration has been identified as a curricular goal in the health professions in various literatures since the early 1900s. Baldwin (2007) described the evolution of interdisciplinary education and primary health care team training as having occurred in phases throughout the last century. Phase I, from the 1940s through the early 1950s included the development of interdisciplinary clinical outreach and the development of early interdisciplinary educational models. Phase II was characterized by the community health center movement of the 1960s and Phase III encompassed the 1970s when there were a number of programs funded through the newly developed federally funded Office of Interdisciplinary Programs. During the 1980s, Phase IV saw little federal funding with the exception of the Veterans Administration funding of their Interdisciplinary Team Training in Geriatrics Program and many of the programs and initiatives begun in the 1970s disappeared.

Phase V began in 1988 with the current, ongoing interdisciplinary training for rural health teams. Philanthropic organizations propelled the next phase,

> Phase VI includes the current generalist efforts of the Robert Wood Johnson and Kellogg Foundations and the Pew Commission, all of which include heavy emphasis on the need for interdisciplinary and interprofessional education and practice among health professions students, as well as greater community input and involvement. (Baldwin, 2007, p. 32)

Phase VII, the current phase is characterized by an increased interest in the incorporation of interdisciplinary continuous quality-improvement practices (Baldwin, 2007).

Collaborative Practice

Collaborative practice strengthens health systems and improves health outcomes and interprofessional education is needed to develop collaborative practices (WHO, 2010). The WHO issued a call-for action to help develop collaborative practices around the globe. Canada responded with the development of interprofessional competencies for collaborative patient centered practice (Canadian Interprofessional Health Collaborative, 2010). In the United States, the Interprofessional Education Collaborative Expert Panel (IPEC) also developed competencies for interprofessional collaborative practice.

WHO Framework for action. The World Health Organization (2010) published a report intended as a global call-for-action for policy-makers to apply to their local health systems and provide impetus for the development of IPE and collaborative practice with the goal of improving the global health workforce and the improvement of health outcomes. Key messages

from the report include the statement that effective IPE has been shown to enable effective collaborative practice, which in turn strengthens health systems and improves health outcomes.

The report was prepared as the product of the WHO Study Group on Interprofessional Education and Collaborative Practice under the leadership of John H. V. Gilbert and Jean Yan and published in 2010. The purpose of the report is "…to provide policy-makers with ideas on how to *contextualize* their existing health system, *commit* to implementing principles of interprofessional education and collaborative practice, and *champion* the benefits of interprofessional collaboration with their regional partners, educators and health workers" (WHO, 2010, p. 11).

The WHO Study Group consisted of 25 experts from around the world divided into three groups working on interprofessional education, collaborative practice, and system-level supportive structures. Together they prepared the *Framework for Action on Interprofessional Education and Collaborative Practice*, which is based on reviews of literature, consultations, and original research. The group conducted informative activities including an international environment scan of IPE practices in 2008 via a descriptive questionnaire, a review of case studies, solicitation of expert comment and participation, and targeted literature reviews (WHO, 2010, pp. 53-55).

There were 42 countries represented by the respondents of the international scan. Results indicated that IPE was a compulsory component of many programs and many educational and health policy benefits were reported, however, staff were rarely formally prepared to deliver IPE, courses were short and variable, and routine evaluation of IPE impact on health outcomes was infrequent (WHO, 2010, p. 17). The authors reported, "there is now sufficient evidence to

indicate that interprofessional education enables effective collaborative practice which in turn optimizes health-services, strengthens health systems and improves health outcomes" (p. 18). The authors found that IPE is broadly influenced by factors driven by development, delivery, funding and management IPE as well as interprofessional curricula. The results of the WHO study group indicated that, "Effective interprofessional education relies on curricula that link learning activities, expected outcomes and an assessment of what has been learned" (pp. 24-25). Developing and sustaining IPE requires supportive administration, good communication, leadership and shared vision, staff development, and continuing staff support. (p. 24)

The WHO (2010) report challenges health systems around the world to begin their movement toward a collaborative workforce by assessing their own system, developing shared decision-making, and introducing planning across health and education systems at national, regional, and local levels. After the contextualization process, the WHO asks for commitment by leadership in health and education to work toward innovation in delivering IPE and collaborative practice. Suggestions include the introduction of IPE into all health related programs, the development of personnel policies to support collaborative practice, and the harmonization between funding streams to ensure no financial barriers to IPE exist. The final action component is the WHO request for the identification and support of IPE and collaborative practice champions. Actions for championing IPE include asking educational leaders to actively seek to embed IPE in related programs, the sharing of IPE experiences, and managerial support of health care delivery teamwork (pp. 38-40).

The primary limitation of the WHO (2010) report is the broad and sweeping scope. Research draws on a small number of studies with limited scope. The report is intended to

galvanize the world health community into action to jump start widespread effort to integrate IPE and collaborative practice and the call for action is by necessity very general, however, broad generalizations can be widely interpreted making their utility what the readers intend, not necessarily what the authors intend.

Canadian Interprofessional Health Collaborative: Competencies. In an effort to meet the goal of interprofessional education for collaborative patient practice the curriculum committee of the Canadian Interprofessional Health Collaborative (CIHC) produced a competency framework. The group was mandated to review literature, review existing competency frameworks related to IPE and IPC, and develop a framework for interprofessional collaboration to be implemented across Canada (Canadian Interprofessional Health Collaborative [CICH], 2010, p. 6).

The lead committee members of the working group were Carole Orchard and Lesley Bainbridge who worked with committee members drawn from individuals with expertise in interprofessional education and collaboration from across Canada. *A National Interprofessional Competency Framework* was published in 2010 and was produced to fill the need for clearly defined and measurable interprofessional education and care competencies (CIHC, 2010, p. 3).

The group used existing work accomplished between 2005 and 2008 as a starting point for their framework. They found commonalities, including patient-centered approaches, collaborative working relationships, teamwork, interprofessional communication, shared leadership, self-awareness, and evaluation, which influenced their foundations for the IPC framework (CIHC, 2010, p. 28). A literature review identified seven core competencies including problem-solving, decision-making, respect, communication, shared knowledge and

skills, patient-centered practice, and collaborative team-work. In evaluating the different approaches taken to achieve competencies, the group decided to utilize an integrative approach which they found incorporated skills acquisition, life-skills, and competency outcomes based learning by "integrating the knowledge, skills, attitudes, values and judgments within learning or practice contexts and applying these to each situation" (p. 28).

The authors developed a model of six interdependent competency domains. Their framework consisted of six domains, two of which support the other four: (1) interprofessional communication, and (2) patient/client/family/community-centered care, and four domains within the integrated whole, (3) role clarification, (4) team functioning, (5) interprofessional conflict resolution and (6) collaborative leadership. The two supporting domains (1 and 2) always influence the other four (CIHC, 2010). Under each domain a competency statement is articulated with descriptors and an explanation/rationale. Consideration of the complexity of the situation, the context of practice and quality improvement efforts is expected when applying this framework.

The expectation of the authors is that the competency framework will be used by a variety of stakeholders (CIHC, 2010). Educators can use the framework to provide structure for faculty development, learners can find activities meaningful in meeting their educational goals, regulators can find guidance in incorporation of interprofessional collaboration into education and practice, continuing professional development can incorporate IPE and enable practitioners/employers to enhance their collaborative practice. Additionally, the framework will assist health service delivery accreditors in assuring that organizational issues related to the

impact interprofessional collaboration has on services delivery and quality of patient care/safety are assessed.

Limitations of the CIHC study include the lack of evaluation of the expected outcomes. As these competencies are implemented across Canada it will be informative to have evaluations on their impact they have on each of the stakeholders listed above. The authors recognize that this document is not all encompassing.

> This then is a living document which the CIHC offers to colleagues in the global interprofessional community to work with, and to work on. We invite colleagues to share their experience and learning, so that to [sic] goal of a sound set of IP competencies might be achieved through collaborative global endeavour which recognizes linguistic and cultural differences. (CIHC, 2010, p. 3)

IPEC Report: Core Competencies. As an outgrowth of the need for quality improvement in the development of interprofessional collaborative practice in the United States, the Interprofessional Education Collaborative Expert Panel (IPEC) convened to develop core competencies. Experts in nursing, medicine, pharmacy, dental education, and public health, sponsored by the federally funded Interprofessional Education Collaborative, worked with each other to take discipline-specific educational objectives for the development of interprofessional collaborative practice and from these educational objectives, synthesize core competencies which could serve as a basis of the development of more systematic curricular approaches to teaching interprofessionality. The IPEC report states that the goal of interprofessional learning "is to prepare all health professions students for *deliberatively working together* with the

common goal of building a better patient-centered and community/population oriented United States health care system." (IPEC, 2011, p. 3)

IPEC was sponsored by the American Association of Colleges of Nursing, the American Association of Colleges of Osteopathic Medicine, the American Association of Colleges of Pharmacy, the American Dental Education Association, the Association of American Medical Colleges and the Association of Schools of Public Health. Two members from each organization worked together toward the development of a shared vision of team-based health care delivery and finance reform. Their goal was to combine their unique skill sets and perspectives to help "foster meaningful interprofessional learning experiences to support team-based care of the futures" (IPEC, 2011, p. 45). In May 2011, IPEC published their recommendation of a common set of core competencies that reflect the expert panel's consensus of those essential competencies relevant to the preparation of clinicians for interprofessional practice. Learning experiences and educational strategies that could be used in achieving interprofessional competence objectives were also included.

Interprofessional collaboration initiatives are in differing stages of development among the six professions involved in IPEC. According to the report, interprofessional collaboration in nursing is included in behavior expectations in baccalaureate, master's and doctoral education. In medical education, undergraduates are expected to demonstrate competence in communication skills, professionalism and systems-based practice, and residents are expected to work effectively as members of interprofessional team. Dentistry accreditation standards slated for adoption in 2013 contain language promoting interprofessional collaboration. Curricular guidance materials for pharmacy education contain many references to interprofessional collaboration. Public

Health recommends competency standards for both undergraduate and master's level education. Principles of interprofessional competencies are currently in the adoption process in the osteopathic medical field (IPEC, 2011).

The IPEC (2011) report identifies four domains for interprofessional collaborative practice: 1) values/ethics for interprofessional practice; 2) roles/responsibilities; 3) interprofessional communication; and 4) teams and teamwork (p. 15). Under each of these domains the authors enumerate specific competencies and related objectives. It is the stated intention that the core competencies would foster coordination among the health professions in embedding essential content into curriculum, guide curricular development and programmatic expectations, and provide an impetus for further investigation and dialogue in IPE (pp. 7-8).

IPEC (2011) developed their core competencies around the concept of interprofessionality in health care which they defined as, "integrated enactment of knowledge, skills, and values/attitudes that define working together across the professions, with other health care workers, and with patients, along with families and communities, as appropriate to improve health outcomes in specific care contexts" (p. 2). The authors examined models of the concept of interprofessionality, frameworks for interprofessional education and collaborative practice, and from these synthesized common competencies. They further examined the common competency of working in interdisciplinary teams.

The authors pointed out that "much remains to be understood about the optimum ways to assist students to learn interprofessional competencies. How particular activities nurture the values, knowledge or skills that undergird one or more of these competencies needs to be made explicit" (IPEC, 2011, p. 27). The report discussed several challenges to framing outcomes in

terms of competencies including the difficulties in their assessment. Additional challenges to the adoption and implementation of core interprofessional competencies included a discussion of lack of top administrative leadership, lack of potential partners for some schools, scheduling challenges, faculty development issues and credentialing body expectations.

IPEC (2011) reports that limitations to the study included the emphasis given to pre-licensure/pre-credentialing competency and training needs thus limiting the contribution health professions in general. The authors reported issues that may interfere with the educational approach of framing outcomes in terms of competencies, acknowledged their efforts as a modest beginning in improving relationships with the goal of improving health and health care in general, and recognized that the report did not address unique aspects of health professions or the common knowledge base that health professionals share. In addition, the authors recognized that the reported competencies do not encompass all health care workers or professional organizations. "Engaging other stakeholders will add broader scope and momentum to help transform the interprofessional education of health professionals for the future" (p. 37).

Summary. Interprofessional collaboration requires a synthesis of competencies across several skills domains. The adoption of specific competencies in collaborative health care will help inform educators, students, policy makers, practicing professionals, and health consumers on their respective roles. Interprofessional education is an important vehicle for attaining the goals of improved health care and health care systems through interprofessional collaboration.

Interprofessional Education

Interprofessional education initiatives are taking place in academic institutions around the globe and are seen as a vehicle for attaining goals of improved health care and health care

systems. The following three studies examine the effectiveness of IPE, identify key components for successful IPE and provide examples of best practice.

Cochrane review of interprofessional education. This review was undertaken to assess the effectiveness of IPE when compared to educational interventions where the health care professionals are educated separately and compared to no educational intervention at all. MEDLINE, CINAHL, and hand searching found a small number of studies and concluded that IPE improved how professionals worked together in some ways, however, more rigorous studies are needed (Reeves et al., 2009)

This Cochrane Collaboration Review was undertaken by Reeves, Zwarenstein, Goldman, Barr, Freeth, Hammick and Koppel and was published in 2009. The purpose of the review was to update a 2000 Cochrane IPE review and provide policy makers, educators and researchers with evidence regarding the effects of IPE as compared to education provided in a traditional uniprofessional venue (Reeves et al., 2009).

Studies considered in this review were randomized controlled trials, controlled before and after studies, and interrupted time series studies. Participants were health and social care professionals conducting IPE interventions. IPE interventions were defined as occurring when members of more than one health and/or social care profession learn interactively. The types of outcome measures were objectively measured or self-reported patient client outcomes and objectively measured or self-reported health care process measures (Reeves et al., 2009).

The reviewers conducted an extensive search to identify studies and reviewed 1801 abstracts from between the years 1999 and 2006. Out of these, 56 appeared to meet criteria and received full-text reviews. Six studies met all of the inclusion criteria, one rated as high quality,

the others rated as moderate quality using quality criteria recommended by Effective Practice and Organization of Care Group specialized register. The studies were analyzed and outcomes results presented in a narrative format (Reeves et al, 2009).

The authors found that IPE improved outcomes in several of the studies however caution that because of the small number and heterogeneity of suitable studies, no broad generalizations can be made. Reeves et al. (2009) concluded that, "Better research designs incorporating quantitative and qualitative data collection strategies would further address our understanding of how IPE leads to changes in practice [behaviors] and processes, and its most valuable applications" (p. 8). Three implications for research are articulated: 1) the evidence base for IPE would be improved by future randomized controlled studies with rigorous design; 2) IPE with respect to resource allocation should be examined; and 3) data collection strategies to provide insight into IPE's effect on healthcare processes and patient outcomes should be employed (p. 9).

Out of the six studies, all of them compared outcomes of IPE interventions with outcomes from no interventions, thus the author's goal of investigating IPE versus traditional education was not achieved. Additionally, the narrow methodological and outcomes criteria employed may have excluded otherwise informative studies.

Best evidence medical education systematic review. Interprofessional education evaluations were systematically reviewed to investigate outcomes and to discuss mechanisms influencing outcomes of IPE. The authors of this systematic review found that staff development in IPE facilitation is essential to effectiveness, IPE should recognize adult learning needs and provide IPE in a context related to the student's practice, and more evaluation is needed of IPE.

The reviewers for this systematic review include Barr, Freeth, Hammick, Koppel and Reeves was published in 2007. The purpose of the review is to help inform interprofessional education development and delivery through a comparison of different IPE interventions to examine outcomes "including the impact on the knowledge, skills and attitudes of the learner, and subsequent change in organizational practice and or benefits to patients/clients" (Hammick, Freeth, Koppel, Reeves & Barr, 2007, p. 5).

The research was conducted in the United Kingdom. Reviewers included research of interprofessional educational interventions among health care providers. They were interested in identifying published evidence to support the idea that "if individuals from different professions learn together they and their agencies will work better together, improving care and the delivery of service" (Hammick et al., 2007, p. 12), with the goal of impacting the future of interprofessional education. Twenty-one studies were reviewed.

The researchers used a systematic search strategy wherein abstracts and full papers found through Medline database were sifted, scrutinized, and each paper chosen read by at least two members of the team. Comparisons and summaries were condensed, scored and collated in a data file. Studies included in the review met the criterion "occasions when members (or students) of two or more professions learn with, from, and about one another" (Hammick et al., 2007, p. 16) and were on explicitly planned IPE experiences attended by learners from at least two professional health care groups.

The researchers utilized an adapted version of Kirkpatrick's 1967 four-level model of educational outcomes to analyze the outcomes of the selected studies (as cited in Hammick et al., 2007). This analysis and an iterative process among the group and peers were used to develop an

explanatory narrative. The researchers then used a model of presage, process, and product (3-P) originally described by J. Biggs in 1993, to assist in the refinement of the final narrative.

Conclusions from this systematic review include: IPE development is influenced by government actions; IPE contributes to knowledge and skills necessary for collaborative practice; staff development is a key influence in effective IPE; customization of IPE is important for positive outcomes; and IPE is used for quality improvement initiatives (Hammick et al., 2007). Limitations include the sole use of a Medline database search to find articles to review. This excludes studies that may not have been abstracted by Medline. Studies are also very disparate, making robust comparison difficult and may or may not contain outcomes that could contribute to health care systems service delivery changes.

Best practice models of IPE. Three best practice models of IPE were discussed for the purpose of informing other institutions that may be creating interprofessional curricula. An exemplary didactic program, community-based experience and an interprofessional-simulation experience were showcased and commonalities discussed with recommendations for best practices in IPE summarized.

The authors, Bridges, Davidson, Odegard, Maki, and Tomkowiak (2011) preface their discussion of three best practice models of IPE with an assertion that "skills in working as an interprofessional team, gained through interprofessional education, are important for high quality care" (¶ 4). The purpose of the paper was to further the development of collaborative and IPE experiences through the discussion of successful programs currently being implemented in the United States (Bridges et al., 2011).

Three types of IPE experiences were discussed. A didactic program consisting of a course offered by the Rosalind Franklin University of Medicine and Science (RFUMS), a community-based program at the University of Florida, and an interprofessional simulation experience available at the University of Washington (Bridges et al., 2011). The programs were described for the reader and included information on program objectives, content, and evaluation/revision processes (Bridges et al., 2011).

Rosalind Franklin University of Medicine and Science. RFUMS grouped students into 16-member interprofessional teams with a trained faculty or staff member mentor and required the team to take two courses together with the goal of using a collaborative approach in learning team-interaction, communication, service, evidence-based practice and quality improvement. In the first course, students attended nine 90-minute interprofessional small group sessions once per week, engaged in a community service project, and were offered a clinical experience. In the second course, taken concurrently with the first course, the impact of culture on healthcare delivery was taught. This course required the interdisciplinary team to develop a culturally appropriate patient education tool and to perform a patient interview. Evaluation was accomplished through focus group meetings both with students and mentors and curriculum changes are made based on this feedback.

University of Florida. The University of Florida offered a course titled Interdisciplinary Family Health, which was required of all first-year students in medicine, dentistry, pharmacy, nursing, physical therapy, and clinical, and health psychology as well as graduate students in nutrition. The course was based in the Office of Interprofessional Education and policy for the course was set by faculty representing each participating college. A two semester course,

students visited volunteer families in interprofessional teams of three students twice per semester and then met with their small group of four teams in two hour sessions to accomplish different tasks and learning objectives. "Our goals for the course are primarily to demonstrate to students the significant impact of environment and resources on health status, and emphasize the importance of interprofessional collaborative effort in providing services to patients" (Bridges et al., 2011, ¶ 24). Grading of the students was centralized however each college decided grading status. Program evaluations were conducted for the entire course and by discipline. Changes in the course were made each year based on these evaluations (¶ 28).

University of Washington. In 1997 the University of Washington created a center for interprofessional education and has been offering IPE activities to students since that time. More than 50 collaborative interprofessional courses have been offered to students and these, along with co-curricular service learning and experiential training activities, were offered to provide "a platform from which students from diverse health profession programs can learn 'with, from, and about' each other, outside of their program 'silos'" (Bridges et al., 2011, ¶ 32). Simulation experiences have been developed to promote professional teamwork. Curricular mapping assured that participating students were comparable in clinical preparation. Objectives of simulation were designed to develop skills and assess student's performance.

Bridges et al. (2011) recommended essential components of successful IPE programs and activities: 1) Administrative support, citing challenges in changing curriculum structure; 2) Faculty resources through interprofessional programmatic infrastructure to provide leadership, recruitment, and activity coordination; 3) dedicated and educated faculty; and 4) student acknowledgment (Bridges et al., 2011, ¶ 48).

One limitation of this study was the highly subjective method of choosing which studies were exemplary. Strengths of each study were considered. However, including challenges would have provided the reader with additional valuable insight. Other than identifying commonalities, no discussion was found on methods authors used to determine how the components of IPE programs were deemed to contribute to their success.

Summary. The research literature indicates that IPE improves patient care outcomes, health care outcomes and increases collaborative practice. Key themes included the need for administrative support and faculty development. Limitations included small numbers of studies with varying degrees of rigor. More scholarly studies are needed to understand the impact of IPE on collaboration and patient care outcomes.

Faculty and IPE

The following three articles discuss some of the faculty issues relevant to IPE programs. The silo mentality prevalent in health care education represents a barrier and highlights the need for academic leadership in overcoming systemic obstacles to IPE development. Faculty development is necessary as is further study of successful faculty development initiatives and faculty play a role in influencing the development and the outcomes of IPE.

Silo mentality. Disciplinary pedagogies make finding a common language and creating dialogue that is required for interprofessional learning to take place difficult (Smith & Clouder, 2010). Each of the health care disciplines has its own culture and norms and a strong hierarchy exists both within and between the different professions. Smith and Clouder (2010) suggest the lack of clear objectives and evidence of effectiveness contribute to the slow response to calls for

greater interprofessional collaboration and there is a comfort level in maintaining disciplinary territoriality that is difficult to overcome.

Smith and Clouder (2010), in a chapter written for *Interprofessional E-Learning and Collaborative Work: Practices and Technologies,* discuss the challenges to interprofessional and interdisciplinary learning and demonstrate that successful IPE and interdisciplinary learning require fundamental changes to both curriculum and organizations delivering the curriculum. The chapter serves as an introduction to the larger work and provides the reader with a global understanding of challenges to IPE, rationale for implementing IPE considering those challenges, and factors that facilitate IPE.

The authors draw on published literature to explore issues impacting IPE and the disciplinary tradition of demarcating specialty sub-disciplines as knowledge becomes more complex is cited as a complicating factor. This territorial practice impedes communication between and within disciplines and highlights the need for finding a common language for open dialogue (Smith & Clouder, 2010). Structural challenges identified by Smith and Clouder (2010) include the hierarchically stratified health care system culture and its resistance to change, conceptual confusion, faculty attitudes, costs of curriculum change, and professional regulation. The socialization process within disciplines promotes professional commitment and solidarity but impedes collaboration across disciplines. Cost, resource sharing and other practical challenges were additional reasons cited as posing barriers.

Collaborative practices are becoming an imperative in the health professions due to need for improvement in quality of health care, the increasing complexity of health care, as well as cost containment needs (Smith & Clouder, 2010). Factors that facilitate collaborative and

integrative learning include support for curriculum and structural organization change and developing faculty/staff commitment to IPE.

Smith and Clouder (2010) conclude their chapter with the assertion that wholesale commitment by institutions of higher education is necessary if students are to be prepared for health care industry challenges. This work is adds to the body of IPE knowledge by synthesizing literature relevant to the topic and presenting it in a readable, concise format. A weakness of this format is its highly subjective nature. It cannot be overlooked that the conclusions drawn by the authors would benefit from studies specifically directed toward testing their veracity.

Faculty development. Challenges to the implementation of IEP in the health sciences include logistical challenges in inclusion of students from different colleges, faculty not possessing the skills necessary for successful IPE, and curricular challenges in identifying those topics suitable for teaching in IPE settings. Buring et al. (2009) provide suggestions for overcoming these challenges.

The first goal of Buring et al. was to "differentiate and characterize the different educational environments where our schools/colleges are located" (p. 1). The second goal was to describe faculty and clinician development programs focusing on key elements of IPE, ideal attributes and characteristics of IPE educators, and components of successful IPE.

The authors described five models of pharmacy education and discussed IPE opportunities with partners from different disciplines dependent on the model. Colleges of Pharmacy are found in fully integrated academic centers as well as in schools where no other health education is provided. The development of IPE has different challenges and opportunities depending on the environment in which the program is situated (Buring et al., 2009, p. 2).

A faculty development program begins with identifying the needs of the faculty involved (Buring et al., 2009, p. 5). Faculty may not have the knowledge, skills, and values required to be successful teaching in an IPE environment. "The healthcare system has a historical hierarchy among healthcare professionals that may yield power struggles when planning and teaching in an interprofessional curriculum" (p. 5). Identifying the areas of need common to the faculty can help tailor training. Competencies for faculty in interprofessional teaching mirror the interprofessional competencies needed by students and include commitment to IPE, understanding roles across professions, positive role modeling, group dynamics, facilitation expertise, diversity values, and thorough understanding of active learning methodology. The authors included a table of resource references to assist with faculty development in these areas as well as a table listing references to articles representing best practices in IPE. Of additional interest is a table listing ideal attributes and characteristics of interprofessional educators, which could be of assistance in the development of faculty training goals.

Conclusions of the article include the assertion that while IPE may be easier to deliver at academic institutions with many health professions available, it is possible at any school or college; it is important to include faculty development when implementing IEP; and IPE initiatives should be evaluated and outcomes shared in a scholarly venue (Buring et al., 2009).

Buring et al. (2009) intended their work to be used to overcome some of the barriers to IPE. Suggestions made by the authors were not necessarily tested in any rigorous fashion, but were gleaned from a variety of published works. Implementing suggestions and analyzing outcomes would add a further dimension to the work and increase its utility.

Faculty attitudes. Faculty attitudes are believed to be a barrier to successful implementation of IPE. Curran, Sharpe, and Forristall (2007) conducted a study wherein faculty in medicine, nursing, pharmacy and social work were surveyed to identify specific attributes that might impact IPE and interprofessional teamwork.

Curran, et al. (2007) administered a survey with Likert scale components. Attitudes toward health care teams was measured with a 14 item scale adapted from Heinemann, Schmitt, and Farrell (2002), attitudes toward interprofessional education was measured with a 15 item scale adapted from Parsell and Bligh (1999), and attitudes toward interprofessional learning were measured with a 13 item scale adapted from Gardner, Chamberlin, Heestand and Stowe (2002). The study was conducted at St. John's Memorial University in Newfoundland, Canada where all faculty in medicine, nursing, pharmacy and social work were given surveys and 194 of the 308 surveyed responded (Curran et al., 2007).

Each of the three subscales was analyzed with a 1-way between groups analysis of variance (ANOVA) and a posthoc Scheffé test. A 2-way ANOVA between groups was then performed between groups for each of the subscales. *Attitudes towards interprofessional health care teams* subscale results indicated that the mean score for medical faculty was significantly lower than nursing faculty. Female faculty and faculty with prior IPE experience scored higher. Female medical faculty and medical faculty of both genders with prior IPE experience also scored significantly higher than male medical faculty and medical faculty with no experience. *Attitudes towards interprofessional education* results indicated that the overall mean score of medical faculty was significantly lower than nursing faculty. Higher mean scores were also found for female faculty and faculty with prior IPE experience. Medical faculty with prior IPE

experience scored significantly higher than those without prior IPE experience. *Attitudes towards interprofessional learning* indicated that the overall mean score of medical faculty was significantly lower than the mean nursing faculty score. Between groups, female faculty with prior experience had the highest score and medical faculty of both genders with prior experience had significantly higher scores than those without prior IPE experience (Curran, et al., 2007).

Overall, findings suggest that gender and prior experience with IPE impact faculty attitudes toward IPE. Given the significant investment of resources necessary to effect meaningful changes in current norms and ways of working, identifying factors influencing the development and success of IPE initiatives is important. Curran et al. (2007) concluded that, "In terms of IPE evaluation, the findings also highlight the importance of measuring baseline attitudinal constructs as part of systematic evaluative activities when introducing new IPE initiatives within academic settings."

This study's primary utility is identifying those attitudes affecting IPE implementation within the academic setting researched. While the results are interesting and highlight need for further inquiry, generalization beyond the academic community researched would not be meaningful or appropriate.

Summary. Factors that facilitate collaborative and integrative learning include support for curriculum and organizational change. Included in this is faculty and staff development. Designing faculty and staff development strategies represents a challenge and baseline attitudes are an important consideration. More scholarly studies are needed since the literature available for review describes studies that are small in scope and limited in generalizability.

Summary

Competence in interprofessional collaboration has been a health professions curricular goal since the early 1900s. Collaborative practice strengthens health systems and improves health outcomes. Interprofessional education is seen as a vehicle for developing competence in collaborative practice. Interprofessional education initiatives are taking place in academic institutions around the globe and while there is a need for scholarly initiatives to provide more rigorous studies of the outcomes of IPE, existing literature indicates that IPE improves patient care outcomes, health care outcomes and increases collaborative practice. The implementation of IPE often requires changes in curricular design and is a departure from traditional health care education. Therefore, administrative support and faculty training and support are essential for a successful transition.

At the College of Nursing, Health and Human Services at Indiana State University there is an interest in expanding interprofessional education. A study of baseline attitudes of faculty and administration could help inform planning of initiatives directed toward the implementation of new IPE thereby increasing their likelihood for producing positive outcomes.

Chapter 3

Methodology

The purpose of this study was to identify attributes that may affect implementation of interdisciplinary education through the examination of attitudes toward interprofessional collaboration and interprofessional education. This study followed a mixed quantitative/qualitative model using a comparative descriptive design and a qualitative analysis of one open ended question. A survey to collect data designed to measure attitudes toward interprofessional health care teams, interprofessional education, and interprofessional learning was administered to faculty and administration of a midwestern health science college. The data were analyzed using descriptive and inferential statistics.

In discussing methodology in this chapter, the participants are described first, including a the steps taken to assure compliance with the College of Graduate and Professional Studies at Indiana State University (ISU) requirements related to the study's inclusion of human subjects. A description of the survey instrument will follow and will contain a discussion of the survey's validity, mode of administration, and methods used in evaluation. A summary of the methodology used for the study will conclude this chapter.

Participants

The participants of the study were the faculty and administration associated with the Midwestern health science college. All members of the faculty and administration associated with the Department of Advanced Practice Nursing, the Department of Applied Health Sciences,

the Department of Applied Medicine and Rehabilitation, the Department of Baccalaureate Nursing, the Department of Baccalaureate Nursing Completion, the Department of Kinesiology, Recreation, and Sport, and the Department of Social Work were given the opportunity to participate. In addition, administrators from the regional medical school and university academic administrators within the educational setting were asked to participate.

Procedures for the Review of Research Involving Human Subjects

Requirements for compliance with the College of Graduate and Professional Studies at Indiana State University (ISU) were met through the submission of the ISU Institutional Review Board forms for approval after the successful defense of this master's thesis proposal. Included was an Application for Review of Research Involving Human Subjects and the Exempt Review Research Categories Form B.

Survey Instrument

Attitudes towards health care teams, interprofessional education, and interprofessional learning were measured utilizing a survey by Curran, Sharpe, and Forristal (2007) comprised of three separate Likert-scales. Attitudes towards interprofessional health care teams subscale is comprised of 14 items, attitudes towards interprofessional education has 15 items, and attitudes towards interprofessional learning in the academic setting has 13 items. Permission to use the survey instrument was granted via correspondence with Dennis Sharpe (personal communication, August 1, 2011).

The attitudes towards interprofessional health care teams subscale was adapted by Curran et al. (2007) from an instrument originally published by Heinmann, Schmitt, and Farrell (2002). The original instrument contains 20 items and was designed as a research measure of general

attitudes about health care teams. Reliability and validity testing of the original instrument was extensive resulting in internal consistency reliability of .83 and a content validity index of .95 for appropriateness of items. The authors state that the instrument is in the public domain with a request that the authors receive reliability and validity data or a copy of raw data (Heinmann et al., 2002).

The attitudes towards interprofessional health care teams subscale was adapted by Curran et al. (2007) from Parsell and Bligh (1999). The original instrument was comprised of 19 items and reported an internal consistency of 0.9. It was developed from outcomes of shared-learning to assess health care students' attitudes toward interprofessional learning. Curran et al. (2007) modified the instrument and included 14 items. This author was unable to locate the authors of the original instrument.

The attitudes towards interprofessional learning in the academic setting subscale was adapted by Curran et al. (2007) from Gardner, Chamberlin, Heestand, and Stowe (2002). The original instrument was a researcher developed scale designed to test college administrators attitudes and opinions about the perceived value of interdisciplinary education. It contained 15 items and content was validated by a panel of experts. Permission to use the instrument was granted via correspondence with Stephanie Gardner, the lead researcher (personal communication, August 22, 2011).

The three subscales consist of a total of 42 Likert-scale items utilizing a five-point rating, where 1 = *strongly disagree* and 5 = *strongly agree*. Items were randomly ordered. The instrument will be administered through Qualtrics survey software online. A composite attitude score for each subscale in the survey will be determined by summing the responses from the

statements. Missing data were handled by mean substitution. Demographic information about the participants was also collected related to gender, age, ethnicity, discipline, and experience with interprofessional education. One open ended question was included asking "What aspect of interprofessional education do you feel is the most important?"

The survey instrument collected information to identify participant's academic discipline, number of years in higher education, primary academic role, and gender. The participant had the option to provide their name and contact information for entry in the drawing or to be provided a digital copy of the analysis of the survey.

Procedures

Faculty and administrators who were potential participants were identified through the college and were sent an email announcing the survey. This email included information about the incentive of a $100 gift certificate drawing from all survey participants at the conclusion of the survey. Five days after the initial email announcement the link to the survey was sent via email. Participants were given instructions on the survey's completion and notified that the survey would close in 10 days. A reminder of the drawing for the incentive of a $100 gift certificate was included. The wording of these emails was tested with three peers to assure clarity prior to dissemination. After 10 days the survey closed and the data were collected from the Qualtrics site. The name of one of the participants of the survey was drawn from a hat by a disinterested party within five days of the close of the survey and the winner notified.

Data Analysis

Data were analyzed using descriptive and inferential statistics. Data collected from Qualtrics at the end of the survey were imported into Statistical Package for the Social Sciences

(SPSS) Statistics Software, Version 19. A 1-way, between groups analysis of variance (ANOVA) and posthoc tests were conducted on the faculty and administration groups for each of the subscales. Descriptive statistics including range, mean and standard deviation were reported. A 2-way ANOVA was conducted to examine relationships between scores related to gender, discipline, or prior experience. The answers to the question, "What aspect of interprofessional education do you feel is the most important?" was coded and organized into a limited number of themes and issues through item-by-item review. Quotations were selected from the responses that illuminated the themes and issues that emerged to be reported in the results.

Chapter 4

Results

As stated in Chapter 1, the purpose of this study was to examine attitudes toward interprofessional collaboration and interprofessional education to identify attributes that may affect implementation of interdisciplinary educational efforts by health and human services faculty at a Midwestern university. This chapter is organized in terms of the specific research questions posed in Chapter 1. The first section discusses the attitudes of faculty and administrators towards interprofessional education and the second section discusses the differences between faculty and administration toward interprofessional education. The third discusses the open-ended question. All sections incorporate discussion of the implication of the findings with respect to challenges and opportunities to interprofessional education in this academic setting.

Attitudes of faculty and administrators towards interprofessional education

Survey

A total of 133 surveys designed to collect data to measure attitudes towards interprofessional health care teams, interprofessional education, and interprofessional learning were emailed to potential participants at Indiana State University on February 28, 2012. (See Appendix A.) Of these surveys, 42 were returned for a 32% return rate by the survey's close on March 6, 2012. Two of the surveys returned had no responses to any of the scale questions, therefore were omitted from the results. One survey was omitted from the attitudes of

interprofessional learning in the academic setting subscale due to missing data in all items. There were 8 instances of data missing at random. These missing data were handled by mean substitutions. Although survey requests were sent to the Indiana University School of Medicine housed at the Landsbaum Center and affiliated with Indiana State University, no responses from the discipline of Medicine were returned.

The survey was comprised of : (1) a respondent demographics section; (2) a 13-item Likert scale adapted from Heinemann, Schmitt, and Farrell (2002) designed to measure attitudes towards interprofessional health care teams; (3) a 15-item Likert scale adapted from Parsell and Bligh (1999) designed to measure assess attitudes towards interprofessional education; (4) a 13-item Likert scale adapted from Gardner, Chamberlin, Heestand, and Stowe (2002); and (5) one open-ended question designed to solicit respondents' opinions on the most important aspect of interprofessional education. All the Likert scales had a 5-point rating with 1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree or disagree*, 4 = *agree*, and 5= *strongly agree*.

Data were analyzed using Statistical Package for the Social Sciences (SPSS) Statistics Software, Version 19. Faculty/administrators from nursing comprised 42.5% (n = 17) of respondents; followed by Applied Medicine and Rehabilitation, 22.5% (n = 9); Kinesiology, Recreation, and Sport, 20% (n = 8); Applied Health Sciences, 7.5% (n = 3); and social work, 7.5% (n = 3). Experience in higher education ranged from: less than one year, 10% (n = 4); 1-3 years, 17.5% (n = 7); 4-10 years , 25% (n = 10); 11-20 years, 25%(n= 10); to more than 20 years, 22.5% (n = 9). Respondents identified their primary roles as 36 faculty and 4 administrators. No expertise or some familiarity with interprofessional education yielded 28 (70%) respondents and 12 (30%) of the respondents reported being experienced in

interprofessional education. Males comprised 25% (n = 10) of the respondents; females comprised 75% (n = 30). (See Appendix B, Table B1) A reliability analysis using Cronbach's α revealed that the (.85), the attitudes towards interprofessional education (.90), and the attitudes toward interprofessional learning in higher education (.87) scales all had high internal consistencies.

Attitudes towards health care teams

Table 1 summarizes the individual items and overall mean across disciplines within the College of Nursing, Health, and Human Services at Indiana State University for the attitudes towards interprofessional health care teams. Overall, respondents from the social work discipline had the highest scores (M = 4.64, SD = .25) and Kinesiology, Recreation, and Sport had the lowest scores (M = 3.82, SD = .39).

Attitudes towards interprofessional education

Table 2 summarizes the individual items and overall mean across disciplines within the College of Nursing, Health, and Human Services at Indiana State University for the attitudes towards interprofessional education subscale. Overall, respondents from Applied Health Sciences had the highest scores (M = 4.84, SD = .04) and Kinesiology, Recreation, and Sport had the lowest scores (M = 3.99, SD = .38).

Attitudes towards interprofessional learning in the academic setting

Table 3 summarizes the individual items and overall mean across disciplines within the College of Nursing, Health, and Human Services at Indiana State University for the attitudes towards interprofessional education subscale. Overall, respondents from social work had the

highest scores (M = 4.36, SD = .25) with Kinesiology, Recreation, and Sport having the lowest scores (M = 3.50, SD = .62).

Table 1

Summary of mean scores on attitude towards health care teams scale by discipline

Scale item	Nursing[a]	Applied Health Sciences[b]	Applied Medicine & Rehabilitation[c]	Kinesiology, Recreation, & Sport[d]	Social Work[e]	Overall[f]
1	4.47 ± .62	4.67 ± .58	4.33 ± 1.32	4.00 ± .93	5.00 ± .00	4.40 ± .87
2†	2.53 ± 1.01	2.67 ±1.16	2.56 ± .73	2.75 ± .89	2.67 ± 1.16	2.60 ± .90
3	4.71 ± .47	5.00 ± .00	4.11 ± 1.27	4.13 ± .35	5.00 ± .00	4.50 ± .75
4	4.41 ± .71	4.00 ± 1.00	4.22 ± .83	3.88 ± .83	5.00 ± .00	4.27 ± .78
5	4.12 ± 1.05	4.33 ± .58	4.11 ± .60	3.50 ± .93	4.33 ± .58	4.03 ± .89
6†	1.71 ± .99	2.00 ± .00	2.00 ± .71	2.38 ± .74	2.33 ± 1.53	1.98 ± .89
7	4.24 ± .75	4.00 ± .00	3.78 ± .68	3.50 ± .54	4.33 ± .58	3.98 ± .70
8	4.65 ± .49	5.00 ± .00	4.44 ± .53	4.13 ± .64	5.00 ± .00	4.55 ± .55
9†	1.71 ± .59	1.67 ± .58	2.00 ± .71	2.38 ± .74	1.00 ± .00	1.85 ± .70
10	4.35 ± .61	4.67 ± .58	4.33 ± .71	3.88 ± .64	5.00 ± .00	4.33 ± .67
11	4.65 ± .49	5.00 ± .00	4.11 ± .60	4.13 ± .35	5.00 ± .00	4.48 ± .55
12	4.24 ± .83	5.00 ± .00	4.11 ± .78	3.87 ± .64	4.67 ± .58	4.22 ± .77
13	4.65 ± .49	5.00 ± 00	4.22 ± .83	4.13 ± .35	5.00 ± .00	4.50 ± .60
Overall mean††	4.35 ± .41	4.49 ± .09	4.09 ± .41	3.82 ± .39	4.64 ± .25	4.22 ± .45

Note. Values are $M \pm SD$. Item descriptions can be found in Appendix 1, Table A2.

[a]$n = 17$. [b]$n = 3$. [c]$n = 9$. [d]$n = 8$. [e]$n = 3$. [f]$N = 40$.

†Negatively worded item

†† Negatively worded items were reverse-scored to calculate the overall mean scores.

Table 2

Summary of mean scores on attitude towards interprofessional education scale by discipline

Scale item	Nursing[a]	Applied Health Sciences[b]	Applied Medicine & Rehabilitation[c]	Kinesiology, Recreation, & Sport[d]	Social Work[e]	Overall[f]
14	4.41 ± .62	5.00 ± .00	4.67 ± .50	4.13 ± .64	4.33 ± .57	4.45 ± .60
15†	1.71 ± .92	1.67 ± .58	1.78 ± .44	2.25 ± 1.04	2.00 ± 1.0	1.85 ± .83
16	4.29 ± .69	5.00 ± .00	4.56 ± .53	3.88 ± .35	4.67 ± .58	4.35 ± .62
17	4.65 ± .69	5.00 ± .00	4.56 ± .53	4.13± .36	5.00 ± .00	4.58 ± .55
18	4.65 ± .49	5.00 ± .00	4.67 ± .71	4.00 ± .76	5.00 ± .00	4.58 ± .64
19	4.18 ± .64	4.33 ± .58	4.22 ± .83	3.63 ± .92	4.33 ± .58	4.10 ± .74
20	4.35 ± .49	4.67 ± .58	4.00 ± .71	3.75 ± .71	4.67 ± .58	4.20 ± .65
21†	1.76 ± .91	1.33 ± .58	2.38 ± 1.12	1.88 ± .64	1.67 ± .58	1.87 ± .88
22	4.41 ± .62	5.00 ± .00	4.44 ± .53	4.25 ± .46	4.67 ± .58	4.45 ± .55
23	4.41 ± .62	5.00 ± .00	4.22 ± .44	3.88 ± .64	4.33 ±.58	4.30 ± .61
24	4.13 ± .70	4.67 ± .58	4.25 ± .66	4.00 ± .76	4.67 ± .58	4.22 ± .68
25	4.38 ± .78	5.00 ± .00	3.78 ± 1.30	4.14 ± .83	4.67 ± .58	4.26 ± .93
26	4.50 ± .61	5.00 ± .00	4.50 ± .50	4.14 ± .37	5.00 ± .00	4.51 ± .54
27	4.63 ± .48	5.00 ± .00	4.44 ± .53	4.07 ± .57	5.00 ± .00	4.53 ± .54
28	4.32 ± .68	5.00 ± .00	4.44 ± .53	3.86 ± .39	5.00 ± .00	4.37 ± .62
Overall mean††	4.39 ± .45	4.84 ± .04	4.31 ± .38	3.99 ± .38	4.64 ± .23	4.34 ± .44

Note. Values are *M* ± *SD*. Item descriptions can be found in Appendix 1, Table A3.

[a]*n* = 17. [b]*n* = 3. [c]*n* = 9. [d]*n* =8. [e]*n* =3. [f]*N* = 40.

†Negatively worded item

†† Negatively worded items were reverse-scored to calculate the overall mean scores.

Table 3

Summary of mean scores on attitude towards interprofessional learning in the academic setting

Scale item	Nursing[a]	Applied Health Sciences[b]	Applied Medicine & Rehabilitation[c]	Kinesiology, Recreation, & Sport[d]	Social Work[e]	Overall[f]
29	4.06 ± .85	3.68 ± .58	4.22 ± .44	4.00 ± .76	4.68 ± .58	4.10 ± .72
30	4.50 ± .52	5.00 ± .00	4.44 ± .53	3.75 ± .70	5.00 ± .00	4.41 ± .64
31	4.44 ± .82	5.00 ± .00	4.67 ± .50	3.88 ± .99	5.00 ± .00	4.46 ± .79
32	3.53 ± .88	3.33 ± .58	3.67 ± .71	2.88 ± .64	4.00 ± 1.0	3.45 ± .82
33	3.63 ± .81	3.67 ±.58	3.75 ± .83	2.88 ± .64	4.00 ± 1.00	3.53 ± .82
34	4.38 ± .72	4.67 ± .58	4.44 ± .73	3.88 ± .83	4.67 ± .58	4.33 ± .74
35	3.38 ± .89	4.00 ± 1.00	3.67 ± .71	2.88 ± .64	3.67 ± .58	3.41 ± .82
36	3.56 ± .89	4.33 ± .58	3.56 ± .88	3.00 ± .76	4.33 ± .58	3.56 ± .88
37†	1.50 ± .63	1.33 ± .58	1.78 ± .67	2.25 ± .89	1.00 ± .00	1.67 ± .74
38	4.69 ± .48	4.67 ± .58	4.78 ± .44	4.38 ± .52	5.00 ± .00	4.67 ± .48
39†	3.06 ± 1.24	2.67 ± .58	2.89 ± .93	2.75 ± 1.04	3.33 ± 1.15	2.95 ± 1.05
40	4.00 ± 1.03	4.00 ± .00	3.89 ± .78	3.75 ± .71	5.00 ± .00	4.00 ± .86
41†	2.63 ± .96	2.67 ± .58	3.56 ± .88	2.75 ± 1.04	2.33 ± 1.53	2.85 ± 1.01
Overall mean††	3.92 ± .52	4.13 ± .18	3.91 ± .28	3.50 ± .62	4.36 ± .25	3.88 ± .50

Note. Values are *M* ± *SD*. Item descriptions can be found in Appendix 1, Table A4.

[a]*n* = 16. [b]*n* = 3. [c]*n* = 9. [d]*n* =8. [e]*n* =3. [f]*N* = 39.

†Negatively worded item

†† Negatively worded items were reverse-scored to calculate the overall mean scores.

Open-Ended Question

Three main themes emerged from the written answers (N = 30) to the question, "What aspect of interprofessional education do you feel is the most important?": (1) The importance of interprofessional education in students' development of an understanding of the roles of different disciplines (n = 9); (2) the role of interprofessional education in the development of collaborative skills across disciplines (n = 9); and (3) interprofessional education's contribution to the development of respect between disciplines (n = 7).

Differences between faculty and administration toward interprofessional education

Attitudes towards health care teams

A 1-way, between groups analysis of variance (ANOVA) found that discipline had a significant effect on attitudes towards health care teams, $F(4, 35) = 4.10$, $p = .008$, $\omega^2 = .24$. A Games-Howell post-hoc analysis revealed that Kinesiology, Recreation, and Sport (M = 3.82) had significantly lower scores than nursing (M = 4.35), Applied Health Sciences (M = 4.49) and social work (M = 4.64). All comparisons were significant at $p < .05$.

A between groups comparison additionally revealed that, on average, men scored lower (M = 3.96) than women (M = 4.30) in attitudes towards health care teams, $t(38) = -2.20$, $p = .034$, two-tailed, $r = .36$. The 95% confidence interval for the mean difference of -.34 was -.65 to .03.

A 2-way between-groups ANOVA was conducted and found no significant differences between the disciplines and scores on the attitudes towards health teams scale related to years worked in academia, academic role, experience with interprofessional education, or gender.

Attitudes towards interprofessional education

A 1-way, between groups ANOVA found that discipline had a significant effect on attitudes towards interprofessional education, $F(4, 35) = 3.28$, $p = .022$, $\omega^2 = .17$. A Games-Howell post-hoc analysis revealed that Applied Health Sciences ($M = 4.84$) had significantly higher scores than nursing ($M = 4.39$), Applied Medicine and Rehabilitation ($M = 4.31$) and Kinesiology, Recreation, and Sport ($M = 3.95$). All comparisons were significant at $p < .05$.

A 2-way between-groups ANOVA was conducted and found no significant differences between the disciplines and scores on the attitudes towards interprofessional education scale related to years worked in academia, academic role, experience with interprofessional education, or gender.

Attitudes towards interprofessional learning in the academic setting

A 1-way, between groups ANOVA found that discipline had no significant effect on attitudes towards interprofessional learning.

A between groups comparison revealed that, on average, respondents who reported no, or some experience in interprofessional education scored lower ($M = 3.74$) than those who reported being experienced in interprofessional education ($M = 4.24$), $t(37) = -3.15$, $p = .003$, two-tailed, $r = .46$. The 95% confidence interval for the mean difference of -.51 was -.83 to -.18.

A 2-way between-groups ANOVA was conducted and found no significant differences between the disciplines and scores on the attitudes towards interprofessional learning scale related to years worked in academia, academic role, experience with interprofessional education, or gender.

Chapter 5

Discussion

As an aid to the reader, the final chapter of this thesis restates the research problem and reviews the methods used in the study. The major sections of this chapter summarize the results and discuss their implications.

Review of the Study

Summary of Research Problem

As stated in Chapter 1, instructional reforms are needed to meet society's increased need for collaboration in the health care field. Academia has barriers to collaborative practices including territorialism and tenure/publication considerations. Cooperative learning strategies, such as those utilized in interprofessional education initiatives, are seen as part of instructional reforms needed in the 21st century. However, changing curricula can be challenging. In order for curricular change to be successful, faculty needs should be carefully considered. Limited research on attitudes and influences on attitudes toward interprofessional education curriculum represent a challenge to implementation of curricular change.

The purpose of this study was to examine the attitudes towards interprofessional education with the goal of identifying attributes that may affect the implementation of curricular change. Data were collected to measure attitudes towards interprofessional health care teams, interprofessional education, and interprofessional learning within the academic setting. This survey was administered to faculty and administration of the College of Nursing, Health, and Human Services at a Midwestern university.

Summary of Methods

Data collected included demographics of discipline, role in academia, years of experience in academia, experience level with interprofessional education, and gender. The survey was comprised of three subscales. The attitudes toward interprofessional health care teams had 13 Likert-scale items, the attitudes towards interprofessional education had 15 Likert-scale items, and the attitudes towards interprofessional learning in the academic setting had 13 Likert-scale items. One additional open-ended question, "What aspect of interprofessional education do you feel is the most important?" was included. Data were analyzed using descriptive and inferential statistical methods. Analysis of variance (1-way ANOVA) between groups, t-tests, and 2-way ANOVAs were employed.

Summary of Results

A total of 133 surveys were emailed to potential participants, 42 were returned for a 32% return rate. Nursing represented 42.5% (n =17) of respondents; Applied Medicine and Rehabilitation, 22.5% (n = 9): Kinesiology, Recreation, and Sport, 20% (n = 8); Applied Health Sciences, 7.5% (n = 3); and social work, 7.5% (n = 3). There were 36 faculty and 4 administrators. There were 28 (70%) respondents indicating little or no experience with interprofessional education, and 12 (30%) reported being experienced or having advanced expertise. Men represented 25% (n =10) of the sample, women represented 75% (n = 30).

In the attitudes towards health care teams subscale, social work respondents had the overall highest scores (M = 4.64, SD = .25) and Kinesiology, Recreation, and Sport had the overall lowest scores (M = 3.82, SD = .39) of the disciplines. A 1-way ANOVA found that discipline had a significant effect on attitudes towards health care teams, $F(4, 35) = 4.10$,

p = .008, ω^2 = .24. A Games-Howell post-hoc analysis revealed that Kinesiology, Recreation, and Sport (M = 3.82) had significantly lower scores than nursing (M = 4.35), Applied Health Sciences (M = 4.49) and social work (M = 4.64). All comparisons were significant at $p < .05$. A between groups comparison additionally revealed that, on average, men scored lower (M = 3.96) than women (M = 4.30) in attitudes towards health care teams, $t(38) = -2.20$, p = .034, two-tailed, r = .36. The 95% confidence interval for the mean difference of -.34 was -.65 to .03.

In the attitudes towards interprofessional education scale, Applied Health Sciences respondents had the highest overall scores (M = 4.84, SD = .04) with Kinesiology, Recreation, and Sport having the lowest overall scores (M = 3.99, SD = .38). A 1-way ANOVA found that discipline had a significant effect on attitudes towards interprofessional education, $F(4, 35) = 3.28$, p = .022, ω^2 = .17. A Games-Howell post-hoc analysis revealed that Applied Health Sciences (M = 4.84) had significantly higher scores than nursing (M = 4.39), Applied Medicine and Rehabilitation (M = 4.31) and Kinesiology, Recreation, and Sport (M = 3.95). All comparisons were significant at $p < .05$.

In the attitudes towards interprofessional learning in the academic setting subscale, overall, respondents from social work had the highest scores (M = 4.36, SD = .25) with Kinesiology Recreation and Sport having the lowest scores (M = 3.50, SD = .62). No significant difference was found between the mean scores of the individual disciplines however a between groups comparison revealed that, on average, respondents who reported no, or some experience in interprofessional education scored lower (M = 3.74) than those who reported being experienced in interprofessional education (M = 4.24), $t(37) = -3.15$, p = .003, two-tailed, r = .46. The 95% confidence interval for the mean difference of -.51 was -.83 to -.18.

The open ended question, "What aspect of interprofessional education do you feel is the most important?" analysis yielded three themes: (1) The importance of interprofessional education in students' development of an understanding of the roles of different disciplines (n = 9); (2) the role of interprofessional education in the development of collaborative skills across disciplines (n = 9); and (3) interprofessional education's contribution to the development of respect between disciplines (n = 7).

Discussion

Research Question: Attitudes of faculty and administrators toward interprofessional education

The findings of this survey indicate that attitudes are largely positive toward interprofessional education within the College of Nursing, Health, and Human Services. The overall mean score of the attitudes towards health care teams subscale (M = 4.22, SD .45), and the attitudes towards interprofessional education subscale (M = 4.34, SD .44) indicate faculty and administrators have substantial agreement with many of the basic premises of interprofessional education.

Items in the attitudes toward health care teams subscale (see Appendix A, Table 1) correlate to assessing attitudes towards collaborative teamwork with respect to the delivery of quality patient care, in understanding roles of other disciplines, and in communication. The Interprofessional Education Collaborative Expert Panel (IPEC, 2011) report identified the core competency of teamwork in collaborative practice as, "Apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan and deliver patient-/population-centered care that is safe, timely, efficient, effective, and equitable" (p. 25).

The data indicate that faculty and administrators at Indiana State University School of Nursing, Health, and Human services do have positive attitudes towards teamwork in collaborative practice. These attitudes could be an asset to the process of curricular change targeting the strengthening of the development of teamwork competencies in health professions students.

Items in the attitudes toward interprofessional education subscale (see Appendix A, Table 2) included assessing attitudes toward learning roles and responsibilities of other health care disciplines as well as the development of communication skills through interprofessional education. Two core competencies for interprofessional collaborative practice highlighted in the IPEC (2011) report included the domains of roles/responsibilities and communication. IPEC states that "learning to be interprofessional requires learning how professional roles and responsibilities complement each other in patient-centered and community/population oriented care" (p. 20). Additionally, the development of communication skills specific to interprofessionalism enhances the health care worker's ability to provide effective interprofessional care. The data collected on the interprofessional education subscale indicate that faculty and administration surveyed have positive attitudes towards these interprofessional skills. This provides opportunity for strengthening curricula to enhance student competencies in these areas.

Respondents in the attitudes towards interprofessional learning in the academic environment had overall lower scores than on the other subscales (M = 3.88, SD .50). Items on this subscale (see Appendix A, Table A3) targeted attitudes towards teaching and learning in interprofessional settings. Some individual items that received lower mean scores were "Faculty like teaching to students in other academic departments" (M = 3.41, SD .82), "Interprofessional

courses are logistically difficult" (*M* = 3.05, *SD* 1.05, reverse scored), and "Students like courses taught by faculty from other academic departments" (*M* = 3.53, *SD* .82). These coupled with high mean scores on "Interprofessional learning should be a goal of this campus" (*M* = 4.46, *SD* .79) and "Interprofessional efforts require support from campus administration" (*M* = 4.67, *SD* .48) suggest that faculty and administration believe in the importance of interprofessional education, however, they are less sure of the feasibility of providing interprofessional learning opportunities in the current academic environment.

Differences in attitudes of faculty and administration towards interprofessional education

In the attitudes towards health care teams subscale, a Games-Howell post-hoc analysis of a 1-way ANOVA revealed that Kinesiology, Recreation, and Sport (*M* = 3.82) had significantly lower scores than nursing (*M* = 4.35), Applied Health Sciences (*M* = 4.49) and social work (*M* = 4.64), although it cannot be said that those scores imply a negative attitude toward health care teams. The Games-Howell analysis is accurate for pairwise comparison when sample sizes are unequal, as in the case with these data. While there could be many reasons for this disparity, identifying the differing attitudes could have bearing on the development of interprofessional education efforts specific to this realm of expertise. Certainly, these data could be beneficial in identifying a need for further investigation of programmatic differences and faculty needs. As stated in the review of literature section, Buring et al. (2009) recommend the development of interprofessional education initiatives only after careful consideration of the environment and needs specific to the faculty.

In the attitudes towards health care teams, there also existed a significant difference between men's and women's scores, with the overall score of men lower (*M* = 3.96, *SD* .46) than

those of women (M = 4.30, SD .41). It is known that gender differences do exist in faculty teaching styles (Laird, Garver, & Niskodé, 2007), so it was not surprising to find that men and women faculty had different perceptions of interprofessional education. One difference Laird discussed is women faculty's affinity for active teaching practices. Given the active nature of interdisciplinary teamwork, teaching practice differences provides one possible reason for the finding of gender differences in attitudes towards health care teams. Further investigation into this area may be beneficial in planning faculty interprofessional education development activities.

In the attitudes towards interprofessional education subscale, the respondent's discipline was found to have had a significant effect on attitudes, $F(4, 35) = 3.28$, $p = .022$, $\omega^2 = .17$. A Games-Howell post-hoc analysis revealed that Applied Health Sciences (M = 4.84) had significantly higher scores than nursing (M = 4.39), Applied Medicine and Rehabilitation (M = 4.31) and Kinesiology, Recreation, and Sports (M = 3.95). Because of the small number of Applied Health Sciences respondents (n = 3), this finding is of limited utility in planning future interprofessional education initiatives. All of the scores in this subscale, as discussed above, showed a positive attitude of faculty and administration towards interprofessional education, especially with respect to the importance of understanding collaborative roles and developing communication skills needed for interprofessional endeavors.

Respondent's discipline had no significant effect on attitudes towards professional learning in the academic environment, however previous experience in interprofessional education did have an effect. On average, faculty and administrators who reported no, or some experience in interprofessional education scored lower (M = 3.74) than those who reported being

experienced in interprofessional education (M = 4.24), $t(37) = -3.15$, $p = .003$, two-tailed, $r = .46$. This subscale targeted attitudes interprofessional teaching and learning in academia and the scores were overall lower than the other two subscales. As discussed above, the findings suggest that faculty and administration believe in the importance of interprofessional education, however, they are less sure of the feasibility of providing interprofessional learning opportunities in the current academic setting. Those respondents with no or little experience had lower scores, indicating that they do perceive more systemic and logistic difficulties than those people with more experience in delivering interprofessional education. This may be important in planning faculty development opportunities.

One of the main themes that emerged from the question, "What aspect of interprofessional education do you feel is the most important?" was the importance of interprofessional education in students' development of an understanding of the roles of different disciplines (n = 9). One response, "Students learning about other professions and their roles" is an exemplar. The IPEC (2011) states that being able to understand and articulate one's own role, and the roles of others is a core competency for collaborative practice. These responses indicate that the faculty and administration are in agreement with this expert panel.

The second theme that emerged was the role of interprofessional education in the development of collaborative skills across disciplines (n = 9). The response, "Opportunity for students from other disciplines to learn from, and about each other; to learn how to utilize specialized knowledge from each discipline – how to collaborate." This response incorporates the first theme and then elaborates it into learning collaborative techniques. IPEC (2011) states that collaborative practice is essential for improving the safety and quality of patient care and it

would appear, from both the attitudes revealed in the subscales and the open-ended question responses that the faculty and administration at Indiana State University agree with its importance.

The third theme that emerged was interprofessional education's role in the development of respect between disciplines (n = 7). The expert panel who authored IPEC (2011) state that "Mutual respect and trust are foundational to effective interprofessional working relationships for collaborative care delivery across the health professions" (p. 18). This sentiment is echoed in the survey response, "Learning that health care is often a 'team sport' and we need to understand and respect other disciplines" (see Appendix B).

It would seem that there is faculty and administrator support at Indiana State University for many of the basic tenets undergirding the IPEC (2011) report. As stated earlier in this paper, the IPEC (2011) report listed recommendations of a common set of core competencies that reflect the expert panel's consensus of those essential competencies relevant to the preparation of clinicians for interprofessional practice. This alignment between the faculty and administration's views of important aspects of interprofessional competencies and the IPEC report competencies suggest that this document may be useful in curricular development of interprofessional education at this institution.

Relationship of study to previous research

The survey questions used in this research were used in the study by Curran et al. (2007), discussed earlier in the Review of Literature section of this paper. The Curran et al. (2007) study differed from this study both in larger numbers of respondents (N = 190) and in composition of disciplines surveyed. Their study was conducted at a health sciences college in a large Maritime

university with a medical school and they had a large number of medicine faculty respond. This author's study was conducted at a health science College in a medium-sized Midwestern university with no medical school and the Curran et al. (2007) study found that discipline, gender, and prior experience with interprofessional education appeared to be key attributes related to positive attitudes towards interprofessional education. The current study also found that discipline, gender, and prior experience in interprofessional education affected attitudes towards interprofessional education.

Limitations of study

The primary limitation of this study was the low number of respondents ($N = 42$). This represented a 32% return rate which may, or may not be a representative sample of the entire faculty and administration of this University, leaving the possibility of both Type 1 and Type 2 statistical errors. The return rate may have been affected by the timing of the survey. The survey was only open for 7 days and those days were during the week prior to the University scheduled Spring Break. One professor indicated that faculty in her department were simply too busy finalizing student-related matters during that week to respond to the survey.

Another limitation may have been the length of the survey. The estimated time for completion was 15 minutes and all but 3 respondents completed it in 15 minutes or less, however one respondent indicated that she did not finish the survey due to its length. Respondents for this survey were solicited from only one institution therefore these results cannot be generalized to other institutions.

Implications for further research

Further research may involve designing faculty development training in interprofessional education utilizing existing knowledge of underlying attitudes towards collaborative interprofessional education and evaluating training effectiveness in changing attitudes. Additional research may involve the process of changing curriculum to integrate more interprofessional education as well as the development of more cross-discipline courses. This may further the knowledge base in faculty development for expansion of interprofessional education both at this institution and in other institutions.

The lower scores on the scale measuring interprofessional learning within the academic setting indicate that further research into the reasons that faculty and administration have a less positive attitude toward the implementation of interprofessional education may be beneficial. Identifying causes for this lack of confidence would contribute to the identification of specific training needs.

The differences between men's and women's teaching styles and the impact this may have on interprofessional education may yield additional valuable insight into interprofessional education.

Conclusions

Faculty and administrator attitudes towards interprofessional education appear to be largely positive, especially with respect to teamwork, the importance of understanding collaborative roles, and developing communication skills needed for interprofessional endeavors.

There appears to be less confidence in the feasibility of providing interprofessional learning opportunities in the current academic setting.

Discipline, gender, and experience in interprofessional education were all significant attributes to overall attitudinal responses towards interprofessional education. Gender and experience differences also revealed attitudinal differences that could be important when considering specific needs of faculty and administration in planning faculty development activities in interprofessional education.

The open-ended question yielded three themes that align with core competency recommendations from the expert panel of the IPEC (2011) report. This alignment suggests that the IPEC (2011) core competency recommendations may be well received by faculty and administration at this institution and be useful in curricular development.

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Appendix A: Survey Items

Demographic Questions

1. What best describes your academic discipline ?

    Nursing (1)

    Applied Health Sciences (2)

    Applied Medicine and Rehabilitation (3)

    Kinesiology, Recreation, and Sport (4)

    Social Work (5)

    Medicine (6)

    Other (7)

        Please write in your academic discipline_____

2. How many years have you been working in higher education?

    Less than one year (1)

    1-3 years (2)

    4-10 years (3)

    11-20 years (4)

    More than 20 years (5)

3. What is your primary academic role?

    Instructor (1)

    Assistant Professor (2)

    Associate Professor (3)

    Full Professor (4)

Professional Staff (5)

Administrator (6)

Other (7)

Please provide your role_____

4. How would you describe your current expertise in interprofessional education?

   No expertise (1)

   Some familiarity (2)

   Experienced (3)

   Very experienced (4)

   Expert in interprofessional education (5)

5. Gender:

   Male (1)

   Female (2)

Open-ended question

The question "What aspect of interprofessional education do you feel is most important?" was asked.

Subscales

The attitudes towards interprofessional health care teams scale was adapted by Curran, Sharpe, and Forristal (2007) from Heinmann, Schmitt, and Farrell (2002). The original instrument was comprised of 20 items. Table A1 lists the items utilized in this author's study.

The attitudes towards interprofessional education subscale was adapted by Curran et al. (2007) from Parsell and Bligh (1999). The original instrument was comprised of 19 items. Table A2 lists the items utilized in this author's study.

The attitudes towards interprofessional learning subscale was adapted by Curran et al. (2007) from Gardner, Chamberlin, Heestand, and Stowe (2002). The original instrument was comprised of 15 items. Table A3 lists the items utilized in this author's study.

Table A1

Attitudes towards interprofessional health care teams items

Number	Scale item
1	Patients/clients receiving interprofessional care are more likely than others to be treated as whole persons
2	Developing an interprofessional patient/client care plan is excessively time-consuming
3	Interprofessional learning should be a goal of this campus
4	The interprofessional approach makes the delivery of care more efficient
5	Developing a patient/client care plan with other team members avoids errors in delivering care
6	Working in an interprofessional manner unnecessarily complicates things most of the time
7	Working in an interprofessional environment keeps most professionals enthusiastic and interested in their jobs
8	The interprofessional approach improves the quality of care to patients/clients
9	In most instances, the time required for interprofessional consultations could be better spent in other ways
10	The interprofessional approach permits health professionals to meet the needs of family caregivers as well as patients
11	Having to report observations to a team helps team members better understand the work of other health professionals
12	Hospital patients who receive interprofessional team care are better prepared for discharge than other patients
13	Team meetings foster communication among members from different professions or disciplines

Table A2

Attitudes towards interprofessional education items

Number	Scale item
14	Interprofessional learning will help students think positively about other health care professionals
15	Clinical problem solving can only be learned effectively when students are taught within their individual department/school
16	Interprofessional learning before qualification will help health professional students to become better team-workers
17	Patients would ultimately benefit if health care students worked together to solve patient problems
18	Students in my professional group would benefit from working on small-group projects with other health care workers
19	Communications skills should be learned with integrated classes of health care students
20	Interprofessional learning will help to clarify the nature of patient problems for students
21	It is not necessary for undergraduate health care students to learn together
22	Learning with students in other health professional schools helps undergraduates to become more effective members of a health care team
23	Interprofessional learning among health care students will increase their ability to understand clinical problems
24	Interprofessional learning will help students to understand their own professional limitations
25	For small-group learning to work, students need to trust and respect each other
26	Interprofessional learning among health professional students will help them to communicate better with patients and other professionals
27	Team-working skills are essential for all health care students to learn
28	Learning between health care students before qualification would improve working relationships after qualification

Table A3

Attitudes towards interprofessional learning in the academic setting

Number	Scale item
29	Interprofessional learning better utilizes resources
30	It is important for academic health center campuses to provide interprofessional learning opportunities
31	Interprofessional learning should be a goal of this campus
32	Students like courses taught by faculty from other academic departments
33	Students like courses that include students from other academic departments
34	Faculty should be encouraged to participate in interprofessional courses
35	Faculty like teaching to students in other academic departments
36	Faculty like teaching with faculty from other academic departments
37	Interprofessional efforts weaken course content
38	Interprofessional efforts require support from campus administration
39	Interprofessional courses are logistically difficult
40	Faculty should be rewarded for participation in interprofessional courses
41	Accreditation requirements limit interprofessional efforts

Appendix B: Data

Table B1
*Demographic Characteristics of Participants (*N *= 40)*

Characteristic	*n*	%
Discipline		
Nursing	17	43
Applied Health Sciences	3	8
Applied Medicine and Rehabilitation	9	23
Kinesiology, Recreation, and Sport	8	20
Social Work	3	8
Years of Experience in Higher Education		
<1	4	10
1-3	7	18
4-10	10	25
11-20	10	25
>20	9	23
Primary Role		
Instructor	11	28
Assistant Professor	10	25
Associate Professor	10	25
Full Professor	2	5
Professional Staff	2	5
Administrator	4	10
Professor Emeritus	1	3
Experience with interprofessional education		
None or Some	28	70
Experienced	12	30
Gender		
Male	10	25
Female	30	75

Note. Totals of percentages are not 100 for every characteristic because of rounding.

Open-ended question

Responses to the open-ended question, "What aspect of interprofessional education do you feel is the most important?"

1. Understanding the role other professionals play in a holistic approach the wellness and life enrichment.
2. Training course instructors
3. Students learning about other professions and their roles
4. Opportunity for students from other disciplines to learn from, and about, each other; to learn how to utilize specialized knowledge from each discipline - how to collaborate.
5. Teaching students together didactically, then sending them out as IP teams during their clinicals.
6. Each profession learns about the other professions and if they work as a team they can make administrative changes possible that are needed to assist patients as opposed to working in isolation.
7. The experience of working with someone with a related but different background toward a common goal.
8. Respect for interprofessional team members
9. Learning how various disciplines work together to address the patient holistically
10. With all of the diversity interprofessionalism offers we all need to be able to function in and out of this team.
11. IPE has been around longer than we realize, but we need to expand it now.

12. Learning respect for all members of the health team
13. Learning that health care is often a "team sport" and we need to understand and respect other disciplines.
14. Learning what other health care team members are able to do when providing care for patients. Additionally, it is important to plan care for patients in an inclusive manner - all disciplines have strengths and insights that can improve patient outcomes.
15. Communication; working as a health team toward the goal of good client outcome; role clarification of self and others; respecting other team members and their roles; recognizing that there is some overlap in health professions roles and knowing when to refer to a content expert.
16. Learning about the standard of care/practice in other disciplines.
17. Working as a team, learning other profession's perspectives, communication skills
18. Administrative support for cross department teaching. Release of time without complicated dollar swapping between departments.
19. Just do it, the faculty will come around. We need to esteem one another for what we know, not what we don't know. This will allow all of us to learn building a stronger network of faculty. Teaching is not a done deal, it is lifelong learning at its best.
20. Discovering the roles other disciplines in caring for patients. Communication among professions is essential as well.
21. Communication skills.
22. Collaboration,...and the patient

23. Building relationships among faculty to better understand each discipline while working together on course content is crucial so that accreditation standards can be met as well as student needs.
24. One is not better than the other.
25. Exposure to students to real life experiences
26. The chance to interact with other disciplines and understand the roles of other health team members in patient care.
27. Nursing, medical students, respiratory therapists, social workers, nutritionists, physical and occupational therapy, pharmacy students, and radiology students.
28. All aspects are important.
29. The communication of perspective from various health professions. I feel that students and faculty should learn about the role of other professions in health promotion. Regardless of the profession, students and faculty from different professions should show respect towards each other.
30. Learning to see other perspectives on patient care.

Appendix C: Correspondence

Correspondence from Drs. Curran and Sharpe

From: annh@mun.ca [annh@mun.ca]
Sent: Monday, August 15, 2011 9:40 AM
To: vcurran@mun.ca; Chris Delnat
Subject: RE: IPE attitudes survey

Hello Christine,

Please find attached a copy of the survey used by Drs. Curran and Sharpe in the research cited in Curran, V. R., Sharpe, D. & Forristall, J. (2007). Attitudes of health sciences faculty members towards interprofessional teamwork and education. *Medical Education*, *41*(9), 892-896.

Thank you.

Ann Hollett, MA

Research Coordinator, Interprofessional Health Education

Centre for Collaborative Health Professional Education

Faculty of Medicine

Health Sciences Centre, Room 2901

St. John's, NL

A1B 3V6

Phone: 709-777-8806

Fax: 709-777-6576

From: Curran, Vernon
Sent: August 2, 2011 9:48 AM
To: Chris Delnat
Cc: Hollett, Ann
Subject: RE: IPE attitudes survey

Hi Christine, I am forwarding your request to the Research Coordinator with our Centre who is on holidays until mid-August so you may not receive anything until that time. Where did you enjoy swimming when you did live here? Do you recall?

Vernon Curran, PhD

Director of Academic Research and Development

Professor of Medical Education

Room # 2901

Faculty of Medicine

Memorial University

St. John's, NL

A1B 3V6

Fax: (709) 777-6576

Tel: (709) 777-7542

From: Chris Delnat [mailto:cdelnat@sycamores.indstate.edu]
Sent: August-01-11 3:54 PM
To: Curran, Vernon
Subject: IPE attitudes survey

Dear Dr. Curran,

I am an emergency dept. nurse doing my MS in Nursing Education at Indiana State University and I'm interested in conducting a faculty survey of attitudes toward interprofessional education. I came across an article in *Medical Education* describing your work in this area. I would like to use your adapted survey questions in my study and I am seeking permission.

Re: FW: IPE attitudes survey
dsharpe@mun.ca
Sent:Monday, August 01, 2011 5:02 PM
To: Chris Delnat

Chris, I have no problem with you using the surveys.
DS
Quoting Chris Delnat <cdelnat@sycamores.indstate.edu>:

> Dear Dr. Sharpe,
>
> I sent the following to Dr. Curran. I hope to gain your permission as well.

>
> thank you,
>
> C. Christine Delnat, BS RN
> Graduate Student
> Advanced Practice Nursing
> 812-251-5011
> _____
> From: Chris Delnat
> Sent: Monday, August 01, 2011 2:23 PM
> To: vcurran@mun.ca
> Subject: IPE attitudes survey
>
> Dear Dr. Curran,
>
> I am an emergency dept. nurse doing my MS in Nursing Education at Indiana
> State University and I'm interested in conducting a faculty survey of
> attitudes toward interprofessional education. I came across an article in
> Medical Education describing your work in this area. I would like to use
> your adapted survey questions in my study and I am seeking permission.
>

Correspondence with Dr. Stephanie Gardner

Re: Attitudes article, 2002
Gardner, Stephanie [GardnerStephanieF@uams.edu]
Sent:Monday, August 22, 2011 12:44 PM
To: Chris Delnat

Yes, good luck!

Sent from my iPhone

On Aug 22, 2011, at 12:28 PM, "Chris Delnat" <cdelnat@sycamores.indstate.edu> wrote:

Dear Dr. Gardner,

I am a graduate student at Indiana State University conducting research on faculty attitudes toward interdisciplinary education. I am seeking permission to use your Likert Scale questions you developed for your 2002 article published in *Advances in Health Science Education.*

May I use your scale for a faculty/administration survey? I would be happy to share my results with you.

Thank you so much for your consideration,

Chris D

C. Christine Delnat, BS RN
Graduate Student

Advanced Practice Nursing
812-251-5011