

## **Critical Review: Traditional versus interprofessional education: Impact on attitudes of health care professionals.**

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This paper presents a critical review, examining the impact of the attitudes between health care professionals who received a traditional education versus health care professionals who received an interprofessional education (IPE). Overall, current research provides insufficient evidence as to whether there is a positive impact in the health care sector as a result of health care professionals' attitudes and education style. Further work first involves finding a common language surrounding the concept of IPE among health care disciplines. Only then can true research be done to examine the benefits of traditional education vs. IPE.

### ***Introduction***

According to The World Health Organization (WHO), Interprofessional Education (IPE) is, "the process by which a group of students or workers from the health-related occupations with different backgrounds learn together during certain periods of their education, with interaction as the important goal, to collaborate in providing promotive, preventive, curative, rehabilitative, and other health-related services" (WHO, 1998). Health care professionals' working collaboratively is not a new practice and neither is the concept of IPE. During formal education, future clinicians are exposed to working with their peers both within and across disciplines. However, the extent of exposure varies from institution to institution and the learning process and expectations of working within group-based settings also vary depending on educators, learners, policies, and practices. Traditional education, on the other hand, is education that is primarily lecture-based and does not intentionally include students from various health-related occupations learning together (Schmidt Vermeulen, & Van der Molen, 2006).

### ***Objectives***

The primary objective of this paper is to critically evaluate existing literature regarding the impact of the attitudes between health care professionals who received a traditional education versus an IPE. The secondary objective is to propose evidence-based practice recommendations for future research.

### ***Methods***

Computerized databases, including Google Scholar, PubMed, MEDLINE, and Web of Science were searched. The following key terms were used: (interprofessional education) AND (health care) AND ([traditional education] OR [university

education]) AND ([attitudes] OR [outcomes]). The search was limited to articles published in English between 1995 and 2007.

### ***Selection Criteria***

Studies selected for inclusion in this critical review paper were required to investigate the attitudes, knowledge, and behaviour/skills between health care professionals who received a traditional education versus health care professionals who received an interprofessional education. Because of ambiguity in the terminology, search strategies were kept broad in order to avoid study exclusion and no limits were set on the demographics of research participants for outcome measures. References of relevant articles and previous reviews were also searched. While there were several abstracts reviewed prior to inclusion, final inclusion decisions were based on outcome measures, which examined attitudes, knowledge, and behaviour/skills. Four full-text articles that met the inclusion criteria were reviewed.

### ***Results***

Goelen, De Clercq, Huyghens, and Kerckhofs (2006) measured the improvement in attitudes towards interprofessional collaboration of undergraduate medical, nursing and physiotherapy students who participated in a module that consisted of five problem-based learning (PBL) seminars, which took place over two academic years in their undergraduate curricula. The control group consisted of students from a single profession and the intervention group was comprised of an evenly distributed number of students from each profession. The modules consisted of five 2-hour seminars and included real patients as triggers. In total, 177 students ( 26 females and 47 males; age range = 19-24) were recruited into the study and each student was assigned to 1 of 16

seminar groups. All participants attended the complete module, eight in control mode and eight in intervention mode.

The Luecht et al. (1990) Interdisciplinary Education Perception Scale (IEPS) was employed to measure the attitudes between the professions. The IEPS's four subscales were perceived autonomy competence within one's own profession' (factor 1); understanding the relative need for interdisciplinary co-operation as it impacts one's own profession' (factor 2); perception of actual co-operation between one's own profession and other professions' (factor 3), and understanding (or willingness to understand) the value of other professions (factor 4). The evaluation included responses from patients, faculty, and students and all comments were examined for indications of adverse effects of the use of patients in this setting. In order to test differences before and after the intervention, a non-parametric test was used. The IEPS scores of 149 (84%) of the participants were analyzed. The scores of 14 participants from both the control and intervention groups were excluded due to failure to complete two sets of questionnaires (before and after each module). The authors found significant improvements in the overall attitudes of male students (representing each discipline) in the intervention group, and in their attitudes about competence and autonomy of individuals in one's own profession in the intervention group as a whole. Scores revealed that there was a slight decline among the female students' attitudes and the authors also found that there were no significant improvements in the control group.

The authors suggest that implementing an interprofessional educational module that does not take up an extensive amount of student and faculty time may have a positive long-term effect in the undergraduate curricula and the use of real patients as triggers provide a valuable contribution to the students' education.

Remington, Foulk, and Williams (2006) summarized literature pertaining to interprofessional education (IPE) interventions within the health care professions in order to provide information to clinical educators involved with, or considering IPE initiatives. Specifically, the authors addressed the question: what educational interventions for health professions trainees are likely to enhance learner-based outcomes (knowledge, skills, and behavior) relevant to the provision of interprofessional care?

The authors narrowed their search to include control trials, which contained a minimum of two health-related disciplines, one being medicine. Of the studies they identified, the authors came to a consensus on reviewing 13 reports, which varied in design, with the majority being pretest/posttest controls that sought to explore the positive outcomes of IPE on attitudes, knowledge and behaviors/skills. The authors allowed for inclusion of various types of education training and teaching models, which contained controls and required that each intervention be described in detail so that it could be reproduced in other environments. Participants in the studies reviewed included: undergraduate, graduate, postgraduate students, and practicing clinicians.

Attitudes were assessed toward other disciplines, own discipline, teams, training, and roles in varying settings (i.e. rural) and consisted of a number of populations (i.e. aging). While behaviours and skills were measured via observation and self-reports, they targeted skill areas that included: communication, team, problem-solving, and group interaction skills.

From their intensive review of the studies, the authors concluded that there is little evidence that IPE has an effective, measurable influence on health care processes. A weakness identified in the literature reviewed was the diversity in terminology related to interprofessional care, which may have resulted in exclusion of some studies. The limit to studies involving medical learners may have also played a role in study limitations. Therefore, future research that employs control groups and validated in order to be measured for short and long-term improvements related to learners' attitudes and knowledge would prove useful for detecting trends. This report provides little evidence in the attitudinal outcomes of participants and despite funding from government, philanthropic, and academic institutions, IPE is limited within the training of health care professionals.

Pollard, Miers, Gilchrist, and Sayers (2006) carried out a three-year longitudinal study to examine the effects of a pre-qualifying interprofessional curriculum provided to students from 10 health and social care programs on attitudes and opinions about working in collaborative learning and working environments.

Questionnaires were administered to students when they entered the faculty, after participation in the second-year, at qualification, and after nine months'

practice as qualified health or social care professionals. The study included three groups: Students from all 10 programs, Students from adult, child and mental health nursing and, Final-year students enrolled in a uniprofessional curricula.

In order to assess the students' attitudes, three questionnaires were administered: The Entry-level Interprofessional Questionnaire (ELIQ); The Interim Interprofessional Questionnaire (IIQ), and; The Final Interprofessional Questionnaire (FIQ). The four scales that were used included: the Communication and Teamwork Scale, that assessed their own skills in their area of practice; the Interprofessional Learning Scale, which measured respondents' attitudes towards IPE; the Interprofessional Interaction Scale, which measured opinions about interaction between health and social care professionals; and the Interprofessional Relationships Scale, which measured perceptions of their relationships with colleagues from their own and other disciplines.

There were 581 students (76.9%) from all 10 programs and 132 (70.6%) from nursing who completed the FIQ. Of the respondents, 526 (69.8%) also completed the ELIQ. All three questionnaires (ELIQ, FIQ, and IIQ) were completed by 468 students (61.9%). While scores were compared between respondents and non-respondents to the FIQ, composition was also compared in order to account for differences in age, gender, education, previous work history, and nursing students were compared based on their program type (degree or diploma). The authors found that there were no differences between scale scores when the students entered the program. However, after the first year, scores on the FIQ demonstrated an increase in the students' outlook on interprofessional relationships. Further analysis revealed that this positive outlook only applied to nursing students. Upon entry, it was noted that of the most students who completed all three questionnaires had positive attitudes about their own communication, teamwork, interprofessional skills, and their opinions about interaction with other health care disciplines were neutral. At the end of the study, their attitudes on their own performance increased and attitudes toward interprofessional interaction grew more negative. This trend was also noted in students who had completed the ELIQ and the FIQ. All three questionnaires were completed by 250 students (67.7%) in the final year of the uniprofessional curricula. The data demonstrated that this group had a similar outcome as all other students in the study. There were no differences for communication,

teamwork, and interprofessional interaction. However, cohort this group was less positive about their own professional relationships compared to the other groups.

The authors suggest that the lack of difference at qualification related to communication and teamwork may suggest that students overestimated their skills at entry. With respect to neutral and negative attitudes to IPE that were the result at the end of the study, the authors hypothesized that their initial attitudes were unrealistic and idealistic about collaboration in general. The author's findings suggest an IPC does have an effect on students' attitudes, particularly with regard to their positive perception of their own professional relationships, however the evidence in this study proved limited.

Salvatori, Berry, and Eva (2007) examined 136 health professional students who participated in two-year interprofessional education (IPE) pilot studies. The students participated in an education model that combined learning strategies that included: problem-based, self-directed, small-group, clinical placement, and IPE tutorials. During the two-year project period, 13 IPE initiatives, which included tutorial and resource sessions, were delivered up to three times per year. In order for the project to be implemented the following criteria had to have been met: a critical mass of interprofessional learners were available, dates overlapped so that students would benefit from maximum participation. Project participants included students from: medicine, nursing, occupational therapy, physiotherapy, and midwifery. The students who participated were invited based on their motivation, interest, and potential to mix interprofessionally. Projects included tutors, who used a co-tutor model, which encompassed two different professionals who used role-modeling of interprofessional collaboration as a means of training.

In order to evaluate the projects, the Interprofessional Education Perception Scale (IEPS), which measured changes in student perceptions of interprofessional learning and collaboration, was administered pre- and post-experience. Students were asked to maintain weekly journals in order to document and reflect on their experiences.

At the end of the study, students completed a project evaluation form. This form included self-reports, learning outcomes, and feedback of the project. The IEPS was completed by 62 students at pre-test and while most students also completed the rating scale at the end of the project, post-test results that were not complete were not included in the analysis. The

authors used a pre- and post-test sample of matched pairs of students (N = 27). To determine the internal consistency of the scale from the IEPS pre-test scores, Cronbach's alpha was calculated. Pre-tests scores revealed a Cronbach's alpha score of 0.75 and the post-test Cronbach's alpha score of 0.87.

Reliability was further tested through a group of students (N = 7), who completed two pre-tests and a Cronbach's alpha 0.91 was found. Finally, both pre- and post-test data were revealed normal distribution after going through the Kolmogorov-Smirnov test. In order to match scores to the larger group of participants, a one-way analysis of variance (ANOVA) was conducted on pre-test scores. The difference in perceptions among students was assessed via a mixed-design ANOVA on both pre- and post-test scores.

The result of the study revealed that there was no change in student perceptions relating interprofessional collaboration between the pre- and post-tests. During the projects, student participation was voluntary, and the authors suggest that because there were no formal guidelines for participation, volunteer bias existed and results should therefore be received with caution. The lack of change in students' perception may have been the result of variance between each student's learning objectives, interest, previous experience, and participation. While most students deemed the experience as positive and would recommend the IPE program to other students, the data revealed that students with a background in rehabilitation studies had a more positive outlook on interprofessional collaboration compared to the medical students who participated in the study. This study revealed that students enjoyed their experience and gained new understanding of other health care professionals.

#### ***Weaknesses of the Research***

During an extensive review of the literature comparing outcomes of traditional education and IPE, it became clear that there were several closely related terms that organizations, such as education institutions, specific health care institutions, researchers, and professionals use in order to define or expand on the concept of IPE. And, while there were many definitions of IPE, it was apparent that there is a need for a shared language and interpretation of IPE goals and definition, which would alleviate the many questions surrounding IPE ambiguity in the literature. As well, the studies reviewed adopted varying degrees and styles of IPE modules, with most producing data that was contingent on several factors (age, gender, previous

work history, etc.) which produced data that was not sufficient enough to produce trends in the literature.

#### ***Conclusions***

IPE is not a new concept for researchers and professionals in the health care sector. However, after conducting a comprehensive review of the literature pertaining to IPE, it became clear that among the proponents of IPE initiatives, there is a lack of clarity surrounding the concept of IPE. There were several definitions of IPE that span disciplines and geographic locations. Although there may have been overlap in the terminology used to define IPE, in many instances terms were used interchangeably. For example, terms such as 'team-approach' and 'collaboratively' were used in some definitions while other definitions used, 'multi-disciplinary' and 'group-based.' While there were frequent interchanging of terms, their meanings varied in interpretation both 'within' and 'across' health care professionals. (Barr, 2005) IPE was developed in order to meet the challenges of creating a common platform on which health care professionals would be able to work as a team. However, in the literature there is evidence that mounting barriers exist with the successful implementation of IPE programs, with the first barrier being lack of uniformity with varying definitions of IPE around the world. (Shewchuk, RM., et al, 2005)

While the definitions may be agreed upon within groups, there are several structural and attitudinal barriers that exist with IPE, making it harder to create common grounds. They include: scheduling challenges, variations in learners' age, education level, and clinical experience, differences in academic policies, government legislation, creating testable environments, financing and funding, and complexity of design in order for IPE to be seen as an asset. When trying to create a common platform for all health care professionals, the barriers go far beyond creating a common language - it is a culture that is being formulated. Therefore, assessing the attitudes, knowledge, and behaviour/skills between health care professionals who received a traditional education versus health care professionals who received an IPE is a task that nears impossibility at this point in time.

Another challenge is that the intended audience has differing interpretations of what IPE is. In order to develop effective education strategies, there must be agreed upon goals that educators, learners, and professionals understand. It is not enough that discipline-specific goals are formulated for groups of

schools or within a particular organization because while the learning done in a protected environment may be transferred, it may not be maintained because of the lack of uniformity. (Institute Of Medicine, 2003).

### ***Recommendations***

Although the available literature suggests the potential for IPE to improve health care practice, further recommendations can be made for future research. Based on the evidence it is recommended that future research be conducted to provide a more consistent and representative view of the implementation of IPE and investigating underlying attitudinal barriers among health care professionals.

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The following three recommendations make up a recipe for successful IPE understanding and implementation. First, a global definition of IPE should exist that encompasses every health care discipline. This definition should be detailed enough so that it leaves no room for interpretation is Second, IPE should be comprised of a common set of goals that every discipline can adhere to. Third, the development and implementation of universal IPE modules to students and professionals would generate more the desired effects of IPE on the health care industry. However, in order to achieve this, further research must be conducted comparing the attitudinal outcomes of health care professionals who received a traditional education versus those learners who received an IPE.

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