

2021 Year in Review: Interprofessional Education

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Summary

Interprofessional (IP) education is focused on learning about, from, and with other health care professionals in an effort to improve patient care and specifically patient safety. IP education does not diminish the importance of discipline-specific competencies but rather focuses on making the connections necessary to develop IP collaborative practice to improve the quality of health care. Research studies addressing IP education in both health profession students and health care professionals published during 2021 are reviewed. The studies explored improving attitudes toward IP education, improving communication and collaboration skills, and improving patient safety. Review of the recently published IP education literature reveals opportunities for respiratory therapy educators, researchers, managers, and clinicians to discover ways to develop IP collaborative practice to ultimately have an important impact on the outcome of the patients we serve. *Key words: interprofessional education; respiratory therapy education.* [Respir Care 2022;67(6):715–720. © 2022 Daedalus Enterprises]

Introduction

Respiratory therapy education is continually evolving to meet the demands and expectations of patient care, accreditation, credentialing, and higher education. Health professions education has transformed from discipline-specific training to now incorporating interprofessional (IP) education. The premise is that health professions students should learn together since they will be working together. And along those lines, IP collaboration for continuing competency training is being used by many health care facilities to guarantee communication and teamwork are prioritized

to ensure patient safety and decreased costs of care. This article will review IP education publications in the year 2021.

The Centre for the Advancement of Interprofessional Education defines IP education as 2 or more professions learning with, from, and about each other to improve collaboration and quality of care.¹ The concept of IP education largely arose from the patient safety movement initiated with the 1999 Institute of Medicine (IOM) report *To Err is Human*.² More than 20 years after publication of this landmark document, health care organizations are still struggling with issues related to patient safety. One of the most commonly cited culprits for challenges to patient safety is

communication among health care professionals. More specifically, it is the failure to communicate or the failure to communicate effectively that is highlighted. In addition, poor professional rapport is commonly blamed for the failure to communicate effectively.

The result was a recommendation in the IOM report that whenever possible health professional training programs and hospitals should establish interdisciplinary team training.² The IOM recommendation arises from the fact that people work together throughout health care in multidisciplinary teams in all settings. In an effective interdisciplinary team, members come to trust one another's judgments and expertise and acknowledge one another's safety concerns.

Methods

Both PubMed and the Cumulative Index of Nursing and Allied Health Literature were searched to identify articles for inclusion in this review. The keyword "interprofessional education" was used, and the search was limited to peer-reviewed randomized controlled trials, comparative studies, and observational studies published in the United States between January 1, 2021–October 1, 2021. Of the 66 articles that were originally identified in the search, 12 articles were retained and described below. The articles were related to applicable health professions trainees or patient care teams and had a research-related purpose and addressed research questions. During preliminary review, articles were found to include IP education and at least one additional relevant keyword as a subject heading, including IP collaboration, IP teamwork, IP communication, and IP collaborative practice. As a result, additional search terms were not utilized. Reviewed publications included reports on studies conducted with both health professions students (9 studies) and health care professionals (3 studies) as subjects; publications involving students will be reviewed first followed by publications involving practicing professionals.

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Review of Literature: Health Professions Students

Evaluating the Interprofessional Education Experience

Innis and Mack³ evaluated nursing students' experiences in an IP-simulated disaster exercise. Four hundred and fifty nursing, paramedic, pharmacy technician, personal care support, police, and fire students participated in a simulated disaster exercise with the goals of practicing clinical skills, collaboration, and IP communication. The disaster simulation was an explosion of unknown cause in a high-rise apartment building, and a survey was used to assess the experiences of the students. This publication only reports on the survey responses of the nursing students that participated.

Overall, the nursing student participants were highly satisfied with the experience, believed the disaster simulation demonstrated the importance of IP practice, and reported learning about the importance of communication with patients and collaboration with other providers. The authors concluded that the nursing students learned about IP collaboration and communication and stated that there is a need for future research to focus on the impact of this educational event on nursing students' future practice.³

Training to Improve Attitudes Toward Interprofessional Education

Three articles were included in this section on improving attitudes toward IP education. Murray⁴ evaluated the impact of IP simulation on readiness for IP learning in health professions students. IP simulation has been shown to have positive effects on the collaborative attitudes of health professions students. The author developed an IP communication simulation that involved nursing students reporting on a change in status for a patient with asthma with increasing distress and work of breathing to a medical student or physician assistant student using the Situation-Background-Assessment-Recommendation (SBAR) communication framework. SBAR is a useful structure for a critical conversation to facilitate prompt and appropriate communication and is relatively widely used in health care institutions. The author used the Readiness for Interprofessional Learning Scale (RIPLS) before and after the simulation to assess attitudes and perceptions to determine readiness for IP learning of the student participants. The RIPLS is a 19-item Likert scale instrument that includes subscales on teamwork and collaboration, negative and positive professional identity, and roles and responsibilities. Increasing scores indicate increasing readiness for IP education. The RIPLS has been previously determined to have high internal consistency.

Involvement in an IP communication simulation had a positive impact on students' RIPLS scores, meaning there were significant differences between before and after RIPLS scores with a medium effect size, and the median score for all participants increased pre to post. The IP communication simulation increased the participant's readiness for continued IP education and improved the participant's attitudes toward other professions. The author recognized that there is a need to determine if understanding and applying core concepts like IP communication are likely to have subsequent effects on the quality of patient care.⁴

Page et al⁵ explored student perceptions and attitudes toward IP education using a case study assignment. Sixty-five nursing, athletic training, dietetics, occupational therapy, and speech-language pathology students developed an assessment and plan for a patient with an acute physical injury with neurological impairment designed to require input from all programs of study. The students completed the assessment and plan in a face-to-face interaction. The authors used the same RIPLS instrument both before and after the students completed the case study activity. They also had the students complete a self-reflection essay on the benefits and problems associated with IP collaboration. To analyze the data from the self-reflection, the authors followed standard practice for coding and theme identification for qualitative data.

Data analysis indicated that the RIPLS total, teamwork and collaboration subscale, and professional identity subscale scores increased pre to post. The themes identified in the analysis of the reflective essays mirrored the increase in RIPLS subscale scores in that the students expressed a deeper understanding and appreciation of their own role in patient care in addition to the role of other disciplines and the value of teamwork in achieving optimal patient care. In terms of future research opportunities, the authors acknowledged a need to determine if IP education during degree-granting education will impact patient care and practice, similar to the previous article.⁵

In the final article in this section, Saadi et al⁶ evaluated the effectiveness of high-fidelity simulation training versus role play for improving IP attitudes toward mental and physical comorbidities. The comorbid presence of obesity, diabetes, and cardiovascular disease is common in severe mental illness like schizophrenia, bipolar disorder, and major depressive disorder. Appropriate care for these patients requires an integration of services and IP collaborative practice. This research aimed to evaluate the effectiveness of simulation training versus didactic and role play-based training for improving the IP attitudes of health professions students. Both the simulation and the didactic course with role play were delivered in person and had the same goals: to develop skills, attitudes, and confidence in relation to IP collaboration across mental-physical comorbidities. The simulation utilized standardized patients and

high-fidelity simulators for patient assessment, whereas the didactic course used peer role play.

The RIPLS was once again completed before and after participation in either activity. Those that participated in the simulation demonstrated significantly improved attitudes toward IP practice in areas of shared learning, communication, teamwork, and problem-solving. However, those that participated in the didactic course with role play demonstrated no change in attitude toward IP learning. The authors make the case that IP simulation should be included in health professions curricula due to its engaging learning stemming from immersion in an IP collaborative practice environment, and they believe the improvements in attitudes toward IP learning may be explained by the realistic nature of simulated scenarios that other training methods are not able to offer. The authors also discuss the need for future research to determine if these simulation findings translate into IP skills in the health care workplace.⁶

Training to Improve Interprofessional Communication

Raurell-Torreda et al⁷ considered the effectiveness of a training intervention to improve communication between and awareness of team roles. In this study, 114 nursing and medical students were randomly assigned to participate in either a role-play simulation that utilized the SBAR communication framework or to participate in a lecture on teamwork and communication. Both the role-play simulation and the lecture involved a patient in the emergency department in shock. Both groups completed 2 data collection instruments post intervention. The KidSIM Team Performance Scale assesses ability to identify the student's role as well as the roles of other health care professionals and ability to communicate between team members. The scale has been shown to have high internal consistency and intraclass correlation and is composed of 11 items, 5 related to role identification and 6 related to communication. The Clinical Simulation Evaluation Tool (CSET) evaluates patient assessment, patient intervention, patient safety, and critical-thinking skills. The CSET has high intraclass correlation and also has criterion-related validity with the Lasater Clinical Judgment Rubric.

Data analysis indicated that post-intervention scores for the role-play simulation were improved on both instruments, leading the authors to conclude that role-play simulation using the SBAR communication framework improved student's awareness of their own and other team members' roles, led to greater confidence in their patient assessments, allowed for implementation of optimal patient interventions, and ultimately led to an enhanced capacity to share key information with IP team members. The authors also included a recommendation to include IP simulation in health professions education and identified a need to

determine if the development of IP teamwork and communication skills during training will translate to their future careers.⁷

Training to Improve Interprofessional Collaboration Skills

A study by Lach et al⁸ describes a unique IP case competition. Students were assigned to an IP team, provided an overview of the expectations, and given a deadline to review the case and to develop and present a plan of care. IP teams met either virtually or in person. The cases used in the competition were very detailed and designed to include complex patient and family situations with physiological and psychological issues to engage a wide range of disciplines. Following presentation of the plan of care, faculty judges scored the plan using a 25-item rubric based on the Interprofessional Education Collaborative (IPEC) key core competencies for IP practice, which include values/ethics for IP education and inclusion of multiple disciplines, an IP comprehensive patient-centered care plan, team communication and collaboration, and quality and innovation of the care plan.

Following the competition, students indicated they felt positive about their teams' IP collaboration, and they appreciated the opportunity to practice working with other professionals in an educational environment they considered safe as they prepared for future practice. The authors noted that the highest-scoring teams presented a comprehensive plan with evidence of valuing the skills of multiple disciplines and focusing on patient/family needs. In addition, all teams scored high on all IPEC competencies, leading the authors to conclude that students learned valuable lessons in group dynamics, team-based care, and geriatric care principles and to acknowledge the need to explore whether the same IPEC competencies are ultimately applied in clinical practice.⁸

Training to Improve Patient Safety

The authors of the next study wanted to assess whether their introductory Team Simulation and Fearlessness in Education (TeamSAFE) program improved student knowledge of effective teamwork skills, impacted their perception of their own teamwork skills and preparedness for teamwork in clinical practice, and augmented their understanding of the roles and responsibilities of different health care team members.⁹ TeamSAFE includes online modules and an in-person simulation workshop. The program was delivered to 959 students from 7 different health professions. A TeamSTEPPS assessment was administered before and after the TeamSAFE program. TeamSTEPPS is an Agency for Healthcare Research and Quality teamwork system or framework for health care facilities that focuses on communication,

leadership, situation monitoring, and mutual-support competencies. The authors also conducted a thematic analysis of open-ended responses to questions about perceptions of teamwork skills collected following the TeamSAFE program. Findings suggest that the TeamSAFE program was effective in improving knowledge of teamwork skills, improving student self-perception of teamwork skills and practice readiness, increasing understanding of the roles and responsibilities of students from different health professions, and understanding the importance of patient safety.⁹

Measurement of Interprofessional Communication

Many of the above studies highlight that many health professions educators recognize the need for increased opportunities to practice IP communication skills in the curriculum. Baird et al¹⁰ wanted to specifically prepare students for the critical communication that must occur during patient handoff. The authors also recognized that both teaching and evaluating these communication skills are a challenge. In their search for an instrument to evaluate communication skills, they identified the original Health Communication Assessment Tool (HCAT). It was a 24-item, Likert scale with high internal consistency and inter-rater reliability. Since the original instrument was developed, additional studies have determined that adapted 22-item and 15-item HCAT instruments are also valid and reliable.

To further refine and decrease the time for assessment, the researchers developed a 9-item adapted HCAT instrument to evaluate health care professions student communication during an in-person patient hand-off simulation with standardized patients. The adapted HCAT evaluates the student's ability to respond to complaints, to clarify any miscommunications regarding treatment plans, and to validate the feelings of the patient. Analysis of inter-rater reliability and internal consistency measures in addition to factor analysis indicates that the 9-item HCAT is reliable, valid, and effective. The authors concluded that the adapted HCAT is a tool health professions educators can use in situations with time constraints, like simulations, to assess and ultimately coach students on improving critical communication skills.¹⁰

Interprofessional Telemedicine Training

The SARS-CoV-2 pandemic, also known as COVID-19, has highlighted the need for health care professionals to possess basic interviewing and counseling skills in a telemedicine setting. Pre-COVID-19 pandemic, telemedicine had been shown to improve access to health care, and the use of telemedicine during the COVID-19 pandemic grew exponentially to meet demands for access to health care during restrictions on in-person activities. Rosasco et al¹¹

evaluated the development of telemedicine interviewing skills using telepresence robots. The authors recruited 43 students from physician assistant, medicine, nursing, dietetics, paramedicine, and pharmacy programs to participate. All students received training in contextual interviewing before being randomly assigned to either the group interviewing an in-person standardized patient or the group interviewing a telepresence robot.

The Self-Efficacy in Patient Centeredness Questionnaire and the Communication Skills Attitude Scale were administered before and after. Both instruments have been previously established as valid. Results indicate that there was no difference in scores of self-efficacy or communication skills between the group interviewing a standardized patient and the group interviewing the telepresence robot. The authors concluded that both groups were comfortable and competent in patient interviewing regardless of patient interface. The authors believe these results may reflect study participants' increased familiarity with communicating with other persons online, and also the increased prevalence of electronic device use in day-to-day life, leading to increasing comfort in communicating electronically, especially since the participants ranged in age from 18–29. The authors also recommended developing and evaluating curricula to train health care professionals in the skills needed to provide telemedicine since it is likely that use of telemedicine will continue to expand.¹¹

Review of Literature: Health Care Professionals

Evaluation of Interprofessional Communication

Massa et al¹² conducted an observational study of the hand-off practices, preferences, and educational experiences of clinicians working in an urban academic medical center, including nurses, surgery and anesthesia residents, nurse practitioners, physician assistants, and certified registered nurse anesthetists. Standardized operating room-to-ICU hand-off procedures had been previously implemented using the handoffs and transitions in critical care process at the facility. The researchers wanted to investigate the IP communication backgrounds, IP communication training, and potential IP variability in hand-off activities among the participants as well as the impact of these on the operating room-to-ICU hand-off procedure. The authors utilized an investigator-created survey regarding communication training during degree-granting education, on-the-job communication training, and various hand-off practices. Participants were also asked to describe clinical details they mention or listen for during patient handoff.

Responses to survey questions regarding previous training were dichotomized into adequate and not adequate for data analysis. And the authors grouped open-ended question responses into thematic categories and calculated

frequencies for each thematic category by clinician group. The adequacy of hand-off training from their degree-granting education was significantly different among groups but was not different for on-the-job hand-off training. However, all clinician groups reported relatively low adequacy of on-the-job hand-off training. The categories that were most often mentioned in open-ended questions about clinical details included in hand-off communication were history, medications, fluid inputs and outputs, procedural details (which were mentioned more frequently by operating-room personnel), and plans for the patient (which were mentioned more frequently by ICU personnel).¹²

Most of the clinicians, irrespective of their professional background, did not believe their educational and on-the-job training were adequate preparation for operating room-to-ICU patient handoffs. Clinicians expressed support for incorporating IP communication training into formal educational programs to improve hand-off teamwork and effectiveness and to aid in understanding communication needs and priorities of other professions before starting clinical practice. The authors expressed a need to develop methodologies to promote IP communication training, which may include IP operating room-to-ICU hand-off training sessions and simulations that explicitly focus on the needs and priorities of each of the professions involved.¹²

Evaluation of Interprofessional Patient Safety Training

The first article in this final section describes how IP evidence-based fall prevention training programs can be a route to address the continued high rate of falls and fall sequelae among older adults. Zimmerman et al¹³ reported on a training program designed by an IP team and delivered to an IP team working at an all-inclusive elder care center. Topics covered included the rationale for fall prevention and management, defining a fall, fall risk factors, clinical assessment of fall risk, IP interventions, IP teamwork, and post-fall care plan development. The purpose of this study was to investigate program quality, learning and self-efficacy gains, and intended behavioral changes regarding fall prevention. The authors collected both quantitative and qualitative data focused on satisfaction with the training, learning, and behavior.

Participants completed a 48-item before-and-after knowledge questionnaire and a self-efficacy/confidence assessment. Following the intervention, participants also completed open-ended questions regarding changes in decision-making, risk factors, and intended behavior changes. Significant increases in knowledge and self-efficacy were realized pre-to-post intervention. Responses to open-ended questions were organized into themes and subcategories, and participants indicated that they would improve communication across the care

team, think beyond their own scope of practice for causes of falls, be more engaged in fall assessment, and work on developing team-based fall assessment tools. The authors acknowledged that there is a need to determine if the intended behavioral changes identified by participants were actually realized in practice and a need to determine if any implemented changes are sustained over time.¹³

The final article reviewed is by Chiu et al¹⁴ from New York-Presbyterian Hospital. Early in the COVID-19 pandemic, New York hospitals faced incredible challenges and disruptions that required changes to practice and innovation. The article describes the formation and efficacy of an IP prone positioning team at one facility. The prone positioning team was formed to address several issues related to increasing nursing and respiratory therapist workloads and decreasing physical therapy and occupational therapy demand in the ICU. The prone positioning team included 29 physical therapists, occupational therapists, and nurses reassigned to serve 240 beds in 14 ICUs during March, April, and May 2020. Team training included reviewing literature on the efficacy of prone positioning; watching instructional videos with step-by-step directions illustrated; and repetitive practice with a mannequin with an endotracheal tube, central line, radial artery line, chest tube, and urinary catheter in place.

Prone positioning ordered by a pulmonary/critical care attending triggered a response by the team. In the roughly 7 weeks of data reported, there were no incidents of central venous catheter or airway loss. Recorded adverse events included the loss of 2 peripheral intravenous lines and one facial pressure injury, and no staff members were injured. Overall, the authors concluded that the IP training and collaboration of the prone positioning team members allowed for quick deployment and helped to enhance the safety and efficiency of proning interventions at their facility. The study demonstrated that the rapid creation of an IP team during a crisis is a feasible, safe, and efficient alternative to adding to the workload of overworked nursing and respiratory therapy staff.¹⁴

Summary

Both educator and clinician researchers are exploring the value of IP education for improving patient care. Educators cited a continued need for research to assess the long-term impact of IP education delivered during degree-granting professional programs, and clinicians cited a need for more training in IP communication during and after degree-granting education. It seems that IP education, and specifically

IP communication, is an excellent area for collaboration among respiratory therapy educators, researchers, managers, and clinicians to ultimately have an important impact on the outcome of our patients.

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