Developing Simulation-based Interprofessional Education: Nursing and SLP Students
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Abstract

The World Health Organization recommends interprofessional training for health care students to create a collaborative practice-ready workforce. Yet students in health profession programs remain educated in silos, and communication problems among health care personnel have been implicated as a cause of most patient errors by the American Association of Critical Care Nurses, Institute of Medicine, and Joint Commission. These organizations recommend that health care professionals receive training in educational programs that develop effective interdisciplinary communication skills. The purpose of this mixed methods pilot study was to assess student learning from a newly implemented interprofessional simulation scenario that addressed identification and management of patients with swallowing difficulties. The authors recruited 45 nursing and speech-language pathology students. Two instruments were used to measure quantitative outcomes including the Simulation Design Scale and the Student Satisfaction and Self Confidence in Learning questionnaire. The results were statistically significant for both surveys. Qualitative data were obtained during simulation debriefing sessions, and were coded and analyzed. Two emergent themes indicated that IPE simulation experiences are valued by students from both disciplines. The authors recommend incorporating IPE simulation in the curriculum for health care educational programs.

Introduction

Students in health profession programs are traditionally educated in silos. Upon graduation, they are expected to function as part of a health care team, collaborating with others to care for patients from admission to discharge. It is hard to imagine a winning team composed of individuals with complementary and essential skills who have not practiced working together.

Communication problems among health care personnel have been implicated as a cause of most patient errors (American Association of Colleges of Nurses [1-4], Joint Commission [5,6]). According to the Joint Commission [5,6], communication breakdowns were the leading root cause of sentinel events between 1995 and 2006. To resolve this situation, the Joint Commission issued National Patient Safety Goals to improve the effectiveness of communication among caregivers and recommended creating a culture that encourages team training. The American Association for Critical Care Nurses [7] also recommends that teams have access to educational programs that develop critical communication skills.

Communication problems among health care personnel have been implicated as a cause of most patient errors by the American Association of Critical Care Nurses, Institute of Medicine, and Joint Commission. These organizations recommend that health care professionals receive training in educational programs that develop effective interdisciplinary communication skills. The purpose of this mixed methods pilot study was to assess student learning from a newly implemented interprofessional simulation scenario that addressed identification and management of patients with swallowing difficulties. The authors recruited 45 nursing and speech-language pathology students. Two instruments were used to measure quantitative outcomes including the Simulation Design Scale and the Student Satisfaction and Self Confidence in Learning questionnaire. The results were statistically significant for both surveys. Qualitative data were obtained during simulation debriefing sessions, and were coded and analyzed. Two emergent themes indicated that IPE simulation experiences are valued by students from both disciplines. The authors recommend incorporating IPE simulation in the curriculum for health care educational programs.

Keywords:
Swallow Screen, Dysphagia, Interprofessional Education, Simulation, Nursing, Speech-Language Pathology

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The purpose of the study was to pilot the new IPE simulation training which focused on the identification and management of patients with swallowing difficulties and to assess the following learning outcomes: (a) Recognize the signs and symptoms of dysphagia and the importance of communication and teamwork in preventing aspiration, (b) Recall teamwork and communication strategies, (c) Recognize or restate team skills, (d) Put into practice those team skills that they have encountered during the course in a simulated clinical environment, and (e) Increase preparedness for working as part of a collaborative ready health workforce. The focus of this paper will report on the students’ self-reported learning experience to the piloted simulation scenario.

Methods

This is a mixed methods study that involved simulated team-based Interprofessional (STBIP) activities between pre-licensure nursing students in a baccalaureate and second year speech-language pathology graduate students at a four year state university in California. IRB approval was obtained, and purposeful sampling was used to recruit participants. All first semester nursing students (n=80) and third semester graduate SLP students (n=16) were eligible to participate, and invited via email to participate in the study. A total of 45 students volunteered to participate in the STBIPe study, including 16 SLP students (35%) and 29 nursing students (65%).

A simulation scenario using a two-phase unfolding case was created for nursing and SLP students. In Phase 1, students from both disciplines received a case report and completed a chart review. The nursing students were instructed to perform a physical assessment and complete a nursing swallow screening. A retired educator who was a stroke survivor served as the standardized patient with aphasia, apraxia of speech, and left-sided hemiparesis. Phase I ended after the patient failed the swallow screen, and a debriefing session immediately followed. Phase II began with the nurses requesting an order for a swallowing evaluation. Once ordered, the SLP students administered a complete clinical bedside swallowing evaluation and determined the appropriate dysphagia diet for the patient. This clinical decision signaled the end of Phase II and a final debriefing session completed the scenario.

Quantitative data were collected using Likert scale surveys to evaluate student experiences at the end of the IPE simulation. Qualitative data were collected using reflective questions regarding student simulation experiences. The simulation debriefing sessions were recorded, transcribed and analyzed for emerging themes. The scenario was beta-tested twice, revised, and later published on the California Simulation Alliance site [22].

Results

Analysis included descriptive statistics for demographic data, and Spearman’s rho nonparametric correlation was used with both instruments. Cronbach’s alpha reliability coefficient for the instruments employed will also be presented. All analysis used the Statistical Package for the Social Sciences (SPSS) version 22.0.

Qualitative data including the participants’ comments regarding their IPE experience were recorded during the simulation debriefing session.
Participants Demographics: Data indicated that the majority of the participants were female (80%). The participants' ages ranged from 20-55 years, with a mean age of 28 years. The majority of participants reported English as their primary language (80%), and 50% of the participants reported speaking other languages at home. Figure 3 represents data related to ethnic distribution of IPE participants.

Statistical Analysis
To evaluate student satisfaction with the simulated IPE experience and student self-confidence with implementing the learned clinical skills. To that end, the participants completed two Likert-scale instruments including the Simulation Design Scale (SD) and the Student Satisfaction and Self Confidence in Learning (SSSC) instrument. The internal consistency of both instruments was determined using Cronbach's alpha with the following results: SD (α = .911) and SSSC (α = .841).

Spearman's rho nonparametric correlation test for relationships between scores for both scales (SD and SSSC) were analyzed. The two instruments had multiple subscales using a 5 point Likert-type scale with 1 being "strongly disagree" to 5 being "strongly agree." The SD scale also had two categories of questions; one asked for an assessment rating of satisfaction, the second asked the participant to rate the importance of each item (Table 1).

Simulation design (SD)
Spearman's rho correlation coefficient was significant at the 0.01 level of confidence for the following student-reported items:

- Simulation cues were appropriate and geared to promote understanding
- Felt supported in the learning process
- Were encouraged to explore all possibilities of the simulation
- Simulation provided the opportunity to set patient goals
- Received constructive feedback
- Obtained instructor guidance/feedback that increased knowledge

Qualitative analysis
Recorded simulation debriefing sessions were transcribed and analyzed in search for recurrent themes. The resultant two themes included Valuing the simulation learning experience and The importance of interprofessional communication and teamwork (Figure 4).

Emerging Themes

Theme 1: Valuing the Simulation learning experience
- SLP: "For me we had a lot of classroom teaching but not practical application. It is incredibly critical and important to see the practical side of it.

Table 1: Simulation instrumentation mean ratings by participants on a five point scale (N=45).

<table>
<thead>
<tr>
<th>Instrument</th>
<th>#of item subscale</th>
<th>M Assessment Rating</th>
<th>M Importance Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simulation Design</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective/Information</td>
<td>5</td>
<td>4.23</td>
<td>4.67</td>
</tr>
<tr>
<td>Support</td>
<td>4</td>
<td>4.60</td>
<td>4.60</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>5</td>
<td>4.46</td>
<td>4.46</td>
</tr>
<tr>
<td>Feedback/Reflection</td>
<td>4</td>
<td>4.83</td>
<td>4.82</td>
</tr>
<tr>
<td>Fidelity(Realism)</td>
<td>2</td>
<td>4.76</td>
<td>4.87</td>
</tr>
<tr>
<td>Student Satisfaction/Self Confidence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction with Learning</td>
<td>5</td>
<td>4.571</td>
<td>NA</td>
</tr>
<tr>
<td>Self Confidence</td>
<td>8</td>
<td>4.41</td>
<td>NA</td>
</tr>
</tbody>
</table>

Rating Scale: 1=lowest rating, 5=highest rating; NA=Not Applicable.
Interprofessional education simulation experiences are valued by students in terms of self-reported satisfaction with learning and increased self-confidence. IPE is endorsed by multiple national and international organizations as well as multidisciplinary accrediting agencies. Consequently, health care educators should consider integrating interprofessional activities such as simulation training to prepare future health care professionals to join the collaborative practice-ready health workforce.

The authors recommend replication of the study using a larger sample size and integrating additional health care disciplines.

In addition, future research surveying nursing schools and SLP programs to elicit data regarding nurse swallow screen training and collaborative IPE education curriculum should be conducted.

Competing Interests

The authors have no competing interests with the work presented in this study.

Funding

The study was partially funded by the CSUS, Graduate Diversity Program Faculty Development Grant.

References


