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Abstract

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Keywords

Occupational therapy student, simulation, standardized actors, emotionally charged scenario, interprofessional education

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ABSTRACT

Occupational therapy programs are incorporating simulation experiences more regularly into their curricula. However, there continues to be a need for more evidence demonstrating simulation benefits, particularly when various client populations, standardized actors, interpersonal skill practice, and multiple disciplines are incorporated into scenarios. The purpose of this qualitative descriptive study was to describe the meaning and impact of participating in an interprofessional simulation for occupational therapy students as part of their current academic preparation and future clinical practice in the hopes of increasing the participants' interpersonal and clinical reasoning skills. Study participants were entry-level occupational therapy doctoral students (N=64) and their written reflections represented the collected data. The interprofessional simulation involved standardized actors and challenged students' interpersonal skills as they responded to an unexpected and emotionally charged situation. Data were analyzed line by line and incident-to-incident, and ultimately organized into a categorical structure. There were four major categories: Simulation experience, Student meaning, Future clinical impact, and Multifactorial impact. Study results suggest: 1) occupational therapy students appreciate and benefit from simulation experiences; 2) standardized actors decrease familiarity for students and add realism; and 3) interprofessional education opportunities contribute to students' understanding of their own role and the roles of other disciplines. When designing simulation experiences, faculty should consider incorporating unexpected circumstances to challenge the student's interpersonal skills, using a combination of high fidelity simulations with standardized actors, and including as many disciplines as possible to fully reflect the diversity and extensive skills of the interdisciplinary team.

Introduction

Occupational therapy programs are incorporating simulation experiences more regularly into their curricula (Bethea et al., 2014). However, there continues to be a need for more evidence demonstrating the benefit of simulation, particularly when various client populations, standardized actors, interpersonal skill practice, and multiple disciplines are incorporated into the scenarios. The purpose of this qualitative descriptive study was to describe the meaning and impact of participating in an interprofessional simulation for occupational therapy students as part of their current academic preparation and future practice in the hopes of increasing the participants' interpersonal and clinical reasoning skills.

Background

Simulation is a well-established pedagogy that has been widely used to train medical and nursing students (McGahie et al., 2010). However, within the last decade, allied health programs, and more specifically occupational therapy programs, have begun incorporating simulation into their curricula (Bethea et al., 2014). During a simulation, students participate in a situation that mimics real-life clinical events for the purpose of practice and learning within a safe environment (Giles et al., 2014; Lateef, 2010).

In high fidelity simulations, an increased level of realism and authenticity is added, making the simulation experience even more clinically relevant (Ohtake et al., 2013; Shea, 2015). Realism is added through the intentional use of medical equipment (e.g. vitals monitors, hospital beds), standardized patients or actors, and scenarios that are unpredictable or unexpected (Pike & O'Donnell, 2010; Shea, 2015). Standardized patients or actors, who are unfamiliar to the students, are trained professionals who portray various roles within a simulation (Lindstrom-Hazel & West-Frasier, 2004). Through their interactions with the actors, the students experience true psychological emotions and are forced to respond to pressing, immediate demands (Herge et al., 2013; Shea, 2015; Springfield et al., 2018). Psychological fidelity is particularly essential during intense or unexpected simulations because eliciting the students' natural responses causes them to reflect on their actions, beliefs, and clinical judgement (Alinier, 2011; Cranton, 2006; Shea, 2015). Despite the recent growth in use and overall importance of incorporating simulations, there continues to be limited research available demonstrating the value and impact of this pedagogy specific to occupational therapy educational programs related to student learning outcomes and from the student perspective (Bethea et al., 2014; Gibbs et al., 2017; Herge et al., 2013). Additionally, more research is needed evaluating the use of standardized patients with occupational therapy students in various client populations and practice settings (Bennett et al., 2017; Cahill, 2015).

Literature suggests that simulation is an effective teaching pedagogy for increasing critical reasoning, problem solving, and decision-making in students (Bethea et al., 2014; Coker, 2010; Mieure et al., 2010; Richardson & Claman, 2014). Simulations also give students opportunities to practice their clinical skills and make mistakes, without inflicting true harm to clients, leading to decreased student anxiety and increased confidence (Bai et al., 2012; Cant & Cooper, 2010; Rutherford-Hemming, 2012). In

addition to the mentioned benefits, during simulations, students practice their interpersonal and professional skills, which are essential to being effective occupational therapists (Knecht-Sabres, 2013). The students' communication skills are challenged and strengthened as they interact with standardized patients and other healthcare professionals throughout the scenario (Bethea et al., 2014; Lateef, 2010; Ozelie et al., 2016; Springfield et al., 2018). Interpersonal and communication skills are arguably just as important for students to master as hands-on clinical skills. However, the majority of simulations focus on students' ability to perform technical skills related to evaluation and treatment (e.g. taking and monitoring vitals, performing bed mobility and transfers, teaching adaptive strategies, facilitating movement in a hemiplegic limb), as opposed to solely addressing communication and interpersonal skills (Coker, 2010; Coppola et al., 2019; Gibbs et al., 2017; Thomas et al., 2017). According to Borghi et al. (2016), there is sufficient literature which emphasizes the importance of client-centered care, centrality of empathy and necessity of understanding a client's point of view; however, there is a scarcity of studies that explore therapist-client interactions and student communication behaviors. To our knowledge, only one study, which was a quantitative feasibility study, has used simulation to address therapist-client interactions, without including a technical clinical skill component (Vegni et al., 2010).

Finally, simulations have been consistently used to provide interprofessional education opportunities for students. Interprofessional education involves students from at least two disciplines, who come together to solve complex problems by capitalizing on each profession's distinctive skills and perspectives (American Occupational Therapy Association, 2015). As the students interact, they "…learn about, from, and with each other to improve collaboration and the quality of care and services" (Centre for the Advancement of Interprofessional Education, 2016, p. 1). Evidence suggests that after participating in interprofessional learning simulations, students demonstrate an increased understanding of other healthcare professionals' roles, willingness to collaborate through teamwork and communication, and improved self-confidence and preparedness for clinical practice (Coppola et al., 2019; Thomas et al., 2017). As students discuss a patient case and determine the best course of action, they develop a stronger understanding of their own scope of practice, a deeper appreciation for other professions' scopes of practice, and identify areas of overlap (Coppola et al., 2019). Despite all the positive outcomes of interprofessional learning experiences during simulations, some students can become uncomfortable or uncertain as they interact with students they do not know or when one discipline dominates a simulation (Olson & Bialocerkowski, 2014; Shoemaker et al., 2011). While technically interprofessional education can take place when two disciplines are represented, there is a need for more studies that include multiple professions to represent healthcare's interprofessional nature more fully (Coppola et al., 2019).

In summary, the literature suggests there is an on-going need for simulation research studies: 1) demonstrating the value of simulation in occupational therapy programs, 2) collecting data from the student perspective, 3) involving standardized patients and actors, 4) utilizing varied patient populations, 5) focusing on communication and interpersonal skills in addition to technical skills, and 6) involving multiple professions.

This research study directly addressed the gaps presented in the literature by describing the impact of an interprofessional end of life simulation involving four healthcare disciplines using standardized actors with an emphasis on challenging occupational therapy students' communication and interpersonal skills. The purpose of this qualitative descriptive study was to describe the meaning and impact of participating in an interprofessional simulation for occupational therapy students as part of their current academic preparation and future practice in the hopes of increasing the participants' interpersonal and clinical reasoning skills.

Theoretical Foundations

Experiential learning, a signature pedagogy of occupational therapy education, requires students to be actively engaged in realistic clinical experiences as they learn by doing (Coker, 2010; Knecht-Sabres, 2013; Schaber, 2014). As students perform clinical skills, they transition from knowing classroom content to demonstrating personal competency through action, collaboration, and reflection, which is consistent with an adult learning model (Coker, 2010; Knowles, 1985). In addition to skill acquisition, from a constructivist and transformative learning theory perspective, as students engage in experiential learning opportunities, they attach meaning to these experiences by reflecting on how to integrate newly learned information with their current understanding and behaviors (Cranton, 2006; Merriam & Bierema, 2014; Rutherford-Hemming, 2012). This transformational learning can occur during simulations and the subsequent debriefing sessions. Students rely on their previous knowledge and experiences while simultaneously gaining new skills and abilities as the scenario unfolds, informing their future actions and behaviors as healthcare professionals (Cranton, 2006; Zigmont et al., 2011).

For this research study, students participated in a high fidelity simulation that contained unexpected elements and were provided an opportunity for subsequent reflection. These activities are reflective of experiential learning, constructivism, and transformative adult learning theories. Not only did the study participants gain new skills and abilities as they actively engaged in the simulation, but they also had the opportunity to integrate previous understanding with new knowledge through reflection.

Methodology

Research Design

This research was a qualitative descriptive study exploring the meaning and impact of participating in an interprofessional end of life simulation on occupational therapy students both presently and related to their future clinical practice. Approval was granted from Belmont University's Institutional Review Board.

Recruitment

Two consecutive cohorts of students enrolled in an entry-level occupational therapy doctoral program were invited to participate in the study. For the students who participated in the simulation experience one year prior to the data collection (first cohort of students), the first researcher sent an email via the cohort listserv inviting them

to participate in the study. The students responded to the request via Qualtrics survey, which included the informed consent and one question asking if they would allow their reflection to be included in the data collection.

For the students participating in the simulation in the same year as the data was collected (second cohort of students), the program's fieldwork coordinator assisted with recruitment. The first researcher solicitated the fieldwork coordinator's help to avoid any concerns of coercion as the students were enrolled in a course with the first researcher as an instructor. The fieldwork coordinator described the study purpose, offered the students the opportunity to sign the informed consent forms, and to indicate whether their reflections could be included in the data collection. Recruitment for the second cohort was completed prior to the students' participation in the simulation experience. For both cohorts, students were encouraged to contact the first researcher to ask any clarifying questions before signing the informed consent or agreeing for their de-identified reflections to be included in the study.

Data Collection

Methods and Instrumentation

Following participation in the simulation and debriefing sessions, all students, regardless of whether they were participating in the research study, completed a reflection, which was due at the end of the simulation day. The reflection prompt was: "Reflect on the meaning/impact of participating in the interprofessional simulation on you now and for your clinical practice. Be sure to reflect on the experience versus just retelling me what happened in the simulation (I know the scenario!)." Reflection was chosen for the study instrumentation because it is essential to experiential learning. As students reflect, they develop awareness and insight into the skills and knowledge gained through the learning activity, which can enhance their future clinical practice (Herge et al., 2013; Howard et al., 2011; Mandrusiak et al., 2014). Assignments were submitted via the university's learning management system and graded for completion. Only the reflections of those who agreed to participate in the study were de-identified and included in the data analysis.

To avoid additional concerns of coercion, only after the final grades were submitted for the second cohort, did the first researcher download the reflections of participating students from the university's learning management system and copy them into a separate document in preparation for the data analysis process. Student names were removed from the document.

Data Analysis

Data analysis was conducted primarily by two members of the research team with two others assisting with coding intermittently. There were as many as four coders at a time but never less than two. Therefore, no individual coding occurred, which improved consistency and agreement in the data analysis process. Because the primary investigator was also the course instructor, there may have been an expectation for the participants' reflections to report specific information; however, the first researcher

acknowledged this possibility and the presence of multiple coders helped to minimize the potential bias. The second researcher, who was one of the two primary data analyzers, has expertise in qualitative research and is a health care provider. The first researcher and other primary analyzer is an occupational therapist. The combination of an experienced qualitative researcher and researcher from the same discipline as the participants increased their sensitivity to meaning in the data. According to Corbin and Strauss (2015), sensitivity allows the researchers to "pick up on relevant issues" (p. 78) and tends to grow when one is immersed in the data. Printed responses to the post-experience reflections constituted the raw data.

Qualitative procedures from Corbin and Strauss (2008, 2015) and Charmaz (2014) informed the data analysis. The students' answers to the semi-structured, open-ended refection prompt provided the raw data. Responses were reviewed line by line with data being coded or named by the researcher in a process called open coding (Corbin & Strauss, 2015). The most frequent and/or relevant codes were sorted using a process called focused coding (Charmaz, 2014). Once data became more voluminous, similar situations found in the student responses were compared for similarities and differences in a process referred to as incident-to-incident coding (Charmaz, 2014). These procedures allowed the researchers to break the data into meaningful and manageable pieces and sort them for the development for themes that emerged.

Corbin and Strauss' (2015) recommended labeling system (categories, concepts, properties, dimensions) was used for assigning names to codes. All codes were initially open codes. Frequent and/or highly relevant open codes were eventually labeled "concepts." Characteristics that helped define the concepts were termed "properties." "Dimensions" described variations in the properties, which helped to further explicate meaning and provide a more detailed description of concepts (Corbin & Strauss, 2015). During analysis, when it made sense to do so, concepts were grouped. Consistent with Corbin and Strauss' (2015) recommendations, concepts were placed under higher level and more abstract concepts called "categories."

For example, in the category of "Student Meaning," the concept "Experiencing Emotions" emerged many times. In some cases, while it was clear that the participants experienced emotions during the simulation, it could not be further defined based on the actual data. Therefore, in those instances no further attempt to define the concept could be made while remaining true to the participant's words. However, in other cases, the participant chose to explain further; therefore, properties and dimensions of "Experiencing Emotions" emerged. Based on the participants' rich explanations, the property of "Internal Struggles" occurred. The property of "Internal Struggle" was further subdivided into dimensions when participants provided even deeper descriptions. So, the concept of "Experiencing Emotions," had the property of "Internal Struggles," and in some cases, more specific dimensions of "Multiple Responsibilities," feeling as if they had to "Mediate" between parties, and the need to "Avoid Personal Bias." "In vivo" codes were used in cases where the participants' actual words conveyed particularly powerful language that were best captured verbatim (Corbin & Strauss, 2015).

There were 657 open codes. After coding and analysis were complete, some concepts that were felt to be similar were combined or subsumed under other concepts to allow for the sifting of large amounts of data and to avoid over-fragmentation of like concepts. In some cases, the concepts were combined, and in others, what were initially thought to be concepts, were determined to be properties of concepts as the analysis progressed, and they were re-ordered and noted. The final categories (higher-level more abstract concepts) were based on data, and the actual reflection prompt posed to students (since the targeted prompt naturally drove the findings to some degree). A final categorical structure was created from the data and the concepts, properties and dimensions that emerged informed the categorical structure and were arranged within the overall categorical areas that they were best suited to. Refer to Tables 1-4 to view the labeling system used.

To increase rigor, coding consistency, credibility, and for possible assessments of transferability, a complete audit trail of every concept name assigned was maintained and referred to frequently. The researchers also kept a memo system recording all important decisions made throughout the process. The audit trail and memos are available upon request to increase credibility and transparency of the analysis process.

Simulation Description

During the first semester of their second year, the occupational therapy students participated in an interprofessional simulation alongside physical therapy, nursing, and social work students. This simulation was a component of their clinical studies course, which had the overall aim of helping students develop clinical reasoning and thinking skills by synthesizing and applying information in case-based and experiential learning.

In the simulation scenario, the patient, who had a do-not-resuscitate order, had been hospitalized with a respiratory infection requiring ventilator support due to a long-standing diagnosis of AIDS. The patient's partner from a same-sex relationship was the patient's power of attorney. Both the patient's partner and estranged parent were at the patient's bedside. During the simulation, the patient's condition unexpectedly deteriorated, resulting in the patient's parent and partner disagreeing on the level of care to be provided. Ultimately, the patient died and the emotionally charged family members became aggressive, confrontational, and upset towards each other and towards the students. The patient was a mannequin, and the family members were played by standardized actors. The standardized actors were unfamiliar to the students.

In advance of the simulation, the standardized actors were sent a script, which was developed by simulation staff and faculty members. The script included the simulation scenario, suggested interactions with the students, and expected outcomes. On the day of the simulation, the standardized actors also received a briefing, provided by a faculty member, to confirm that all actors understood the simulation purpose and expected interpersonal exchanges between the spouse, parent, and students. Most of the standardized actors had been involved in the simulation for several years; therefore, they were very knowledgeable about the intricacies and nuances of the simulation and how to interact with the student participants.

Each occupational therapy student was paired with a physical therapy student for the simulation experience. The nursing and social work students floated between "multiple rooms" and were available to assist the therapy students as needed. In preparation for participating in the simulation, the occupational therapy students were told they would be working with a physical therapy counterpart to conduct an initial evaluation of a patient in an acute care setting and that nursing and social work team members would be available to them. They were also instructed to review their code of ethics. Just prior to the simulation, the occupational therapy and physical therapy student pairs reviewed the patient's medical record and developed a plan for conducting the patient's initial evaluation. While the therapy students planned to conduct an initial evaluation with the patient, they quickly realized that the simulation objective was to respond appropriately and ethically to meet the needs of the patient and family members by using each interdisciplinary healthcare team members' unique skills and abilities.

Following the simulation, students participated in a 30-minute debriefing session, within small interdisciplinary groups, facilitated by trained faculty members. The faculty members' training consisted of one hour of debriefing training with a combination of didactic teaching and practice in facilitation. During the debriefing sessions, the facilitators used a debriefing script, which was developed by a simulation staff member, to promote standardization. The script included recommended questions and prompts to encourage student discussion related to reactions/feelings, analysis/understanding of the simulation content and student concerns, and summary/learning application.

To address logistical challenges of conducting an interdisciplinary simulation (e.g., coordinating student schedules, availability of various disciplines, space limitations, rising numbers of student cohorts), the simulations occurred on a Saturday in multiple rounds over a three-and-a-half-hour timespan, with each student participating in simulation activities for 65 minutes. Each round consisted of nine simulations being conducted simultaneously, three per simulation lab.

Results

Participants

A total of 64 entry-level occupational therapy doctoral students, gathered from two different cohorts, participated in the study by allowing their reflections to be included in the data collection. The reflections were completed during the students' first semester of their second year within their educational curriculum.

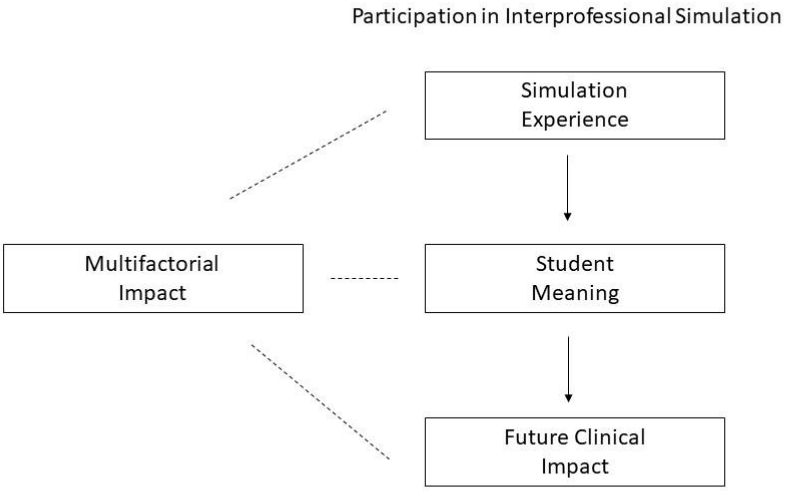
Qualitative Results

Categories

Categories (higher-level concepts), which helped to sort data according to the reflection prompt, were employed, and the results are explicated according to the categorical structure used to sort them. Refer to Figure 1 which depicts the overall thematic structure.

Figure 1

Thematic Structure



There were four major categories: Simulation experience, Student meaning, Future clinical impact, and Multifactorial impact. Simulation experience pertained to data that seemed most relevant to the specific simulation experience. Data relevant to the current meaning of the experience according to the participants was categorized as “student meaning” and data impacting the students’ future clinical practice was categorized under “future clinical impact.” Finally, because some concepts carried meaning across the three previously mentioned categories, a more inclusive category named multifactorial impact was used. The categories of student meaning, and future clinical impact were relatively large compared to the other two categories; however, considering the reflection prompt, this may have been expected.

Simulation Experience

Data related to the simulation experience directly were placed in a category ultimately named “Simulation experience.” Many students expressed a clear appreciation for the experience, and therefore, this became a concept. Properties of this concept included students finding the simulation to be a good way (mode) of learning. In some cases, the debriefing sessions that followed the simulation experiences were specifically mentioned as contributing to the students’ learning. There were some comments from participants that captured their appreciation for the experience very powerfully. One participant said, “I felt challenged to think hard about why I acted the way I acted, why I said what I said, and why I did what I did.” Others seemed to suggest they benefitted from participating in the simulation. One participant summed up the experience by saying, “This was a powerful simulation that taught me a lot…” Other concepts under

the simulation experience category included the degree to which the students felt the simulation was a safe environment in which to learn and practice important skills. While in school, students tend to believe there will always be a clean clear answer to clinical and ethical dilemmas; however, through experiential learning, students come to understand that this is not always the case. One participant realized that "…there is no magic answer that will solve the problem." Refer to Table 1 for concepts, properties and dimensions related to this category.

Table 1

Category: Simulation Experience

Categorical Structure

Concepts	Properties	Dimensions
Appreciation for experience		
	Mode of learning, Debriefing	
Safe learning environment		
Situation assessment		

In Vivo Exemplars:

- "I felt challenged to think hard about why I acted the way I acted, why I said what I said, and why I did what I did."
- "I am still processing and still reeling from the simulation, but I feel it was so important. I didn't realize how essential it was for my learning until we had completed it."
- "…there is no magic answer that will solve the problem."

Student Meaning

The category of "Student meaning" emerged as participants communicated what participating in the simulation experience meant to them. Repeatedly the participants reported experiencing many emotions throughout the simulation, which was to be expected considering the simulation scenario included aspects of death and dying, ethical challenges, and emotionally charged interactions. Some students described experiencing emotions without providing further explanation; however, others experienced specific emotional states. Properties of "Experiencing emotion" were sadness, helplessness, frustration, feeling lost, scared and even panicky. One participant shared "This intense situation gave me a feeling of the need to run from it." Another felt a strong level of discomfort and suggested they felt like "a deer caught in the headlights." Another common property was the internal struggle students felt as they suggested the dimensions of "Multiple responsibilities," including professionally mediating between those involved, "Avoiding personal bias," and compartmentalizing their feelings.

Through self-assessment, some students also recognized that despite experiencing some difficult emotions during the simulation, they felt “Comfortable” and that the efforts they made to meet the needs of the patient and family members were “Well-done.” Beyond self-assessment, the students also were engaged in significant “Self-regulation.” They regulated their “Emotions” and in some cases shared that they were internally “Handling emotions.” Refer to Table 2 for concepts, properties and dimensions related to “Student meaning.”

Table 2

Category: Student Meaning

Categorical Structure

Concepts	**Properties**	**Dimensions**
Experiencing emotions		
	Sadness, Helpless, Frustrating, Confused, Scared, Panic, Awkward, Feeling awful, Lost, Guilt, Multiple feelings, Compartmentalizing personal experiences, Overwhelmed	
	Discomfort	Self
	Overwhelmed Internal struggle	
		Multiple responsibilities, Mediating, Avoiding personal bias
Self-assessment		
	Well done, Comfortable	
Simulation	Difficult	
Self-regulation		
	Emotion, Handling emotions	

In Vivo Exemplars:

- “…I felt like I was just sitting in someone else’s grieving process. I felt like I was intruding, and I felt useless.”
- “This intense situation gave me a great feeling of the need to run from it.”
- “I can describe my feelings in two words: confused and powerless.”
- “I feel other people’s feelings very deeply. It’s currently two hours after the simulation and I still feel very emotional and guilty.”

- "…in the given moment I felt sort of helpless and my anxiety wanted to fill the silence with words."
- "…it was hard not to choose a side."
- "…I felt like a deer caught in the headlights…"
- "…to realize how important it is to not internalize other people's anger or grief as a health professional."
- "…it is better to give people space rather than to try to be in the middle of their grieving."
- "In this situation of death and screaming family members, I do not want to be by myself."
- "…wow, I really don't know what I'm doing."

Future Clinical Impact

There were two large concepts under the category of "Future clinical impact:" "Room to grow" and "Evidence of growth." "Room to grow" had many well-described properties including the need for "Self-compassion," "Desiring more role confidence," greater skills in "Conflict resolution," being "More assertive," and "Knowing what to say." Under being "More assertive," students described the need for greater assertiveness with their "Interprofessional partners" and with "Family."

In addition to describing areas where they needed more growth, students also recognized actions taken during the simulation that demonstrated "Evidence of growth." "Evidence of growth" as a concept was found to have properties of reflexive learning that occurred during the debriefing sessions (Reflexive learning debrief) and "Being flexible." The students were required to demonstrate flexibility, leading to dimensions of cognitive flexibility (Cognitive) and flexibility in response to the unexpected simulation circumstances (Unexpected). Additionally, the students recognized that they needed to be "Prepared for high stress situations" and to approach "Ethical practice" in a new way. One participant summed up the "Evidence of growth" concept well by stating, "….I did not expect to see as much overlap as I did, and to take away so many things that I saw others do that I want to do myself in future practice. The IPE members informed my practice." Refer to Table 3 for details related to the "Future clinical impact" category.

Table 3

Category: Future Clinical Impact

Categorical Structure

Concepts	Properties	Dimensions
Room to grow		
	Self-compassion, Language awareness, More feedback, Conflict resolution, Body language, Do things differently, Advocating for role, Desiring more role confidence, Ongoing reflection	
	More assertive	
		Interprofessional partners, Family
	Knowing what to say	
		Family
Evidence of growth		
	Reflexive learning debrief, Prepared for high stress situations, Ethical practice	
	Being flexible	
		Cognitive, Unexpected

In Vivo Exemplars:

- "I often found myself saying the first thing that came to mind, instead of really asking myself if this was the right thing to say."
- "…I did not expect to see as much overlap as I did, and to take away so many things that I saw others do that I want to do myself in future practice. The IPE members informed *my* practice."
- "Since I've left the simulation, I've realized that maybe being the human, myself, was what I should've done."

Multi-factorial Impact

The final major category was "Multifactorial impact." Concepts within this category were determined to be less cleanly placed into one category but instead impacted multiple categories. Therefore, the researchers felt compelled to create a unique category for those concepts that had a broader impact. For example, a concept may have been meaningful to a participant currently, but also may have an impact on their future clinical practice.

The “Multifactorial impact” category contained several main concepts with the two most prominent being happenings or perceptions that led to “Role confusion” as simulation circumstances caused students to question their roles as the scenario unfolded. The properties and dimensions of this concept were confusion about their own role as an occupational therapist, specifically related to their “Scope of practice,” and the confusion that evolved from not clearly understanding the roles of their interprofessional partners (Interprofessional partners). Occasionally, students also described having to compartmentalize their “Personal experience” derived from their own lives or the lives of their loved ones as that contributed to their lack of role clarity.

Despite the students experiencing “Role confusion,” another prominent concept of “Role clarifying” emerged from the data. By participating in the simulation, the students reported a new clarity to their own roles and the roles of others. Properties of this concept included clarifying their own roles (Self) as well as those of their interprofessional partners (Interprofessional partners). For example, after realizing that the simulation was not going to require their typical evaluation skills, one participant stated, “…I took on the role of comforter.” Additional important properties related to “Role clarifying” included the need to “Remain professional’ in difficult circumstances, the use of “Therapeutic silence,” and the importance of “Active listening.”

There were many instances of data in which the participants learned through this educational opportunity how important their interprofessional partners will be to them in their eventual clinical practice, expressed in the concept of the “Importance of interprofessional partners.” Important properties and dimensions within this concept were their noting the “Effective actions” of their partners, and the repeated use of the word “Teamwork.” The following are some examples: “It felt good to know that I did not have to carry the entire burden…,” and “The team approach was better than anything I could have come up with on my own.” Alternatively, there were some participants that felt disappointed with the level of support their interprofessional partners provided. One participant noted, “I thought the role of the nurse would be responsible for moving us to the next step after the patient had died, but she simply left after telling us the patient died.”

Other concepts within the “Multifactorial impact” category were “Client centeredness” and “Family centeredness.” Some students focused on either representing the dying patient’s wishes or on addressing the family members; however, other students were able to flow back and forth as necessary to meet the most pressing demands. Data were clear that throughout the simulation, there were times when more than technical medical care was needed and instead the students needed to provide emotional, spiritual, and communication support. Refer to Table 4 for a summary of concepts, properties, and dimensions under this category.

Table 4

Category: Multifactorial Impact

Categorical Structure

Concepts	Properties	Dimensions
Role confusion		
	Self	
		Scope of practice
	Interprofessional partners, Personal experience	
Role clarifying		
	Self	
		Scope of practice, Expansion
	Interprofessional partners	
		Expansion, Unmet expectation
	Remain professional, Role limitation, Therapeutic use of self, Active listening, Therapeutic silence	
Importance of interprofessional partners		
	Effective actions, Collaboration	
	Teamwork	
		Communication, Non-verbal communication
Client centeredness		
Family centeredness		

In Vivo Exemplars:

- "I thought the role of the nurse would be responsible for moving us to the next step after the patient had died but she simply left after telling us the patient died."
- "…just looking at each other and sharing a glance we were able to divide and conquer."
- "It felt good to know that I did not have to carry the entire burden, and that part of it could be lifted through having supportive professionals alongside me."
- "I think it is those moments that break you down and take you out of your comfort zone that create real working teams."
- "The team approach was better than anything I could have come up with on my own..."

- "…embracing the gift of interprofessional collaboration and support."
- "…know when to step in and when to take a back seat."
- "…the DNR gave me a sense of comfort to an extent."
- "…I took on the role as comforter."
- "I realized the line boarding our scope of practice can quickly become blurry in an emotionally charged situation."

Discussion

The purpose of this qualitative descriptive study was to describe the meaning and impact of participating in an interprofessional simulation for occupational therapy students as part of their current academic preparation and future practice in the hopes of increasing the participants' interpersonal and clinical reasoning skills. This study's results contribute to the growing body of literature by demonstrating the value of using simulation within occupational therapy educational programs from the student perspective, including standardized actors within high fidelity simulations, focusing on communication and interpersonal skills, and incorporating multiple professions within simulations.

Throughout the data, the students expressed an appreciation for the simulation experience, both the simulation itself and the debriefing session that followed. The simulation was an effective teaching pedagogy which provided the students with an experiential learning activity within a safe learning environment to practice their skills (Coker, 2010; Giles et al. 2014; Knecht-Sabres, 2013; Pike & O'Donnell, 2010; Schaber, 2014). However, the uniqueness of this end of life scenario was a departure from the simulation experiences that occupational therapy students typically participate in during their educational programs. Aspects of the simulation such as the unexpected circumstances (e.g. physical decline and eventual death of a patient, emotionally charged interactions between family members) and the inclusion of standardized actors contributed to the realism and psychological fidelity of the simulation (Alinier, 2011; Cranton, 2006; Herge et al., 2013; Lateeff, 2010; Lindstrom-Hazel & West-Frasier, 2004; Shea, 2015; Springfield et al., 2018). These unpredictable and perhaps even jarring circumstances are the types of situations that students often talk about in the classroom and may encounter in future fieldwork rotations and/or clinical practice but do not typically get to practice in simulations. While all the students may not have responded in the way they wanted or needed to, through the debriefing sessions and subsequent reflection, students considered how to integrate these new experiences with current behaviors and understanding leading to transformational learning, evidenced by an identification of areas for room to grow and evidence of growth (Cranton, 2006; Merriam & Bierema, 2014; Rutherford-Hemming, 2012; Zigmont et al., 2011). Perhaps occupational therapy programs need to consider how they can incorporate more unexpected situations or end of life scenarios into their simulation experiences. While these types of situations may not happen regularly in clinical practice, when they do occur, students will be more prepared to personally handle their own emotions and effectively interact with clients.

Also, the interactions with the standardized actors were different than other practice sessions the students had experienced, where students role play with faculty members or fellow students. The presence of the standardized actors, who were unfamiliar to the students, forced the students to confront real internal and external emotions, such as fear, helplessness, frustration, or sadness, that they might not have experienced before within a clinical setting. They were also challenged in their communication and interpersonal skills as they navigated the emotionally charged situation as the situation was not centered around the typical focus of demonstrating technical skills, demonstrating skills in assertiveness and conflict resolution (Bethea et al., 2014; Lateef, 2010; Ozelie et al., 2016; Springfield et al., 2018).While some students were pleased with the way they handled the situation, believing they effectively employed their therapeutic use of self, others felt challenged in knowing what to say or how to compartmentalize their own feelings while simultaneously trying to meet the pressing needs of their clients. However, by experiencing this type of situation first-hand, during their educational time, the students felt better prepared for future challenging encounters. This was role clarifying to the students as they recognized that as occupational therapists sometimes their role will be to address family needs, and be empathetic, present, and perhaps even silent. Occupational therapy programs regularly provide experiential learning activities for their students; however, instructors need to consider how they can incorporate standardized patients or actors into their experiences as they contribute significantly to the realism and more consistently reflect interactions that occur in practice settings.

Finally, participation in the simulation provided the students with an opportunity to interact with other healthcare professionals. While interprofessional education technically takes place when there are at least two disciplines included, for this simulation, there were three other disciplines represented in this simulation. Involving multiple disciplines within an interprofessional simulation is an identified need in the literature and contributes to the students' fuller understanding of interdisciplinary practice and the skills and scope of practice of other disciplines (Coppola et al., 2019; Thomas et al., 2017). By including social work and nursing, two disciplines that are not as readily incorporated in simulations involving occupational therapy students, the participants specifically gained a greater understanding about the scope of practice and appreciation for the skills of these professions, beyond handling medical needs and discharge planning (Coppola et al., 2019; Thomas et al., 2017). While students are often told about the importance of teamwork and collaboration to promote best practice and patient care, through the simulation, the students experienced this type of camaraderie and cooperation and expressed an appreciation of having others to rely on (Centre for the Advancement of Interprofessional Education, 2016; Thomas et al., 2017). Consistent with the literature, though not a prevalent occurrence, some students seemed to dominate while others desired to be more assertive (Olson & Bialocerkowski, 2014; Shoemaker et al., 2011). While there may be logistical challenges with incorporating several disciplines within an interprofessional simulation, educational programs should consider involving more than just one profession, to enhance student exposure to and appreciation for all members of the healthcare team. Also, experiencing perceived hierarchy or domination within the healthcare team may be

something that students will experience in future practice. Therefore, learning to be more assertive by clearly communicating and demonstrating occupational therapy's unique role and contributions is something that can be practiced within interprofessional experiences.

Implications for Occupational Therapy Education

This study describes the meaning and impact of participating in an interprofessional simulation for occupational therapy students. Study results suggest that students benefit when interprofessional simulations involving standardized actors and interpersonal skills practice are incorporated into educational programming. The following suggestions/recommendations are offered to encourage this pedagogy:

- Simulation scenarios should include opportunities for students to practice both technical skills (e.g. transfers, bed mobility, taking vitals) and interpersonal skills (e.g. communication, conflict resolution, regulating personal emotions).
- Simulation scenarios can be designed to include situations/circumstances that students might not regularly see in clinical practice (e.g. end of life, hostile/emotionally distraught family members, unresponsive patient requiring intervention by the rapid response team, patient experiencing a fall or injury during treatment session) but should be equipped to handle emotionally.
- Educational programs should seek out interprofessional education opportunities with disciplines that occupational therapy does not typically interact with but are part of the multidisciplinary team in order to broaden student understanding of roles and scopes of practice (e.g. social work, nutrition/dietetics, chaplaincy, music therapy, pharmacy). This may require reaching out to programs across campuses or outside of the institution.
- If an educational program does not have an established standardized actor program, instructors could contact local acting organizations and/or theater, drama, or musical theater programs to solicit help. Having trained professionals as opposed to instructors or fellow classmates playing roles, will add to the realism of the simulation experience.
- Instructors could contact faculty in other health related disciplines to see if they would be willing to share developed cases. These cases could be modified to help ease the burden of case development and may lead to future interprofessional education opportunities.
- Not all occupational therapy programs have access to established and robust simulation programs; however, simulation can be done on a small scale. Instructors who are looking to start incorporating simulations within their courses are encouraged to contact other occupational therapy faculty for case ideas, ways to begin, and tips on how to execute simulations on a small or non-existent budget.

Limitations and Future Research

While these study results contribute some new ideas to the existing body of literature, there are several limitations. First, despite faculty efforts to standardize the experience for all students by providing scripts and communicating with the standardized actors about the purpose and expectations of the simulation, there may have been some variation in the standardized actors' interactions with the students. Some actors may have focused their emotions at the students while others directed their exchanges at each other. The actors also displayed a wide range of emotions (e.g. withdrawal, extreme sadness, anger, frustration), based on the students' responses and their creativity. Another way the simulation experience may have varied across groups was the dynamics within the therapy student teams and the availability of the nursing and social work professionals as they were attending to multiple beds at a time. These variations may have influenced the students' responses on the meaning and impact of participating in the interprofessional simulation. Also, while two cohorts of students were included in this study to increase the number of participants, the participants were recruited from one university, limiting the transferability of this study. Finally, while attempts to avoid coercion and the influencing of student responses were made in a variety of ways (e.g. recruitment done by another faculty member, data not accessed until after final grades released, assignment graded for completion only), the students may have felt pressured to participate in the study or write their reflections in a way to impress or receive a good grade rather than express their true thoughts as the primary investigator was also the course instructor.

Opportunities for future research include replication of this simulation scenario at another university or with a different combination of disciplines represented. Also, a quantitative approach could be taken to objectify the meaning and impact of participation by having participants complete pre and post simulation experience measurements related to interprofessional education, emotional responses, and knowledge about end of life care and ethical practice. The other student populations who participated in the same simulation experience could complete the same reflection and the data could be analyzed looking for similarities and differences in student meaning and impact based on discipline. Finally, occupational therapists who are current practitioners could participate in the same simulation and comparisons could be made to see if there are differences in communication and interprofessional skills or changes over time when experiencing unexpected or emotionally charged situations.

Conclusion

Simulation is increasingly being used within occupational therapy education programs as one way of providing students with opportunities to practice their skills within a safe environment. While students regularly participate in predictable simulations that test specific technical skills, this study suggests that occupational therapy students both appreciate and benefit from simulation experiences that provide unexpected and perhaps even intense circumstances. These types of situations require them to shift their focus and rely on their communication and interpersonal skills to provide effective care. Also, exposing occupational therapy students to an end of life scenario which includes death and dying may help students appreciate the nuance of these situations

and be beneficial in uniquely preparing students for clinical practice. The inclusion of standardized actors in the simulation scenarios as opposed to mannequins, other students or faculty members decreases familiarity for students and adds to the level of realism. Interprofessional education opportunities contribute to the students' understanding of their own roles and the roles of other disciplines. Therefore, faculty should consider how they can include as many disciplines as possible to fully reflect the diversity and extensive skills of the interdisciplinary team.

References

Alinier, G. (2011). Developing high-fidelity health care simulation scenarios: A guide for educators and professionals. *Simulation & Gaming, 42*(1), 9-26. https://doi.org/10.1177/1046878109355683

American Occupational Therapy Association. (2015). Importance of interprofessional education in occupational therapy curricula. *American Journal of Occupational Therapy,69*(suppl 3), 1–14. https://doi.org/10.5014/ajot.2015.696S02

Bai, X., Duncan, R. O., Horowitz, B. P., Graffeo, J. M., Glodstein, S. L., & Lavin, J. (2012). The added value of 3D simulations in healthcare education. *International Journal of Nursing Education,* 4(2), 67–72. http://www.ijone.org/

Bennett, S., Rodger, S., Fitzgerald, C., & Gibson, L. (2017). Simulation in occupational therapy curricula: A literature review. *Australian Occupational Therapy Journal, 64*(4), 314–327. https://doi.org/10.1111/1440-1630.12372

Bethea, D. P., Castillo, D. C., & Harvison, N. (2014). Use of simulation in occupational therapy education: Way of the future? *American Journal of Occupational Therapy, 68*, S32–S39. https://doi.org/10.5014/ajot.2014.012716

Borghi, L., Johnson, I., Barlascini, L., Moja, E. A., & Vegni, E. (2016). Do occupational therapists' communication behaviours change with experience? *Scandinavian Journal of Occupational Therapy, 23*(1), 50-56. https://doi.org/10.3109/11038128.2015.1058856

Cahill, S. M. (2015). Perspectives on the use of standardized parents to teach collaboration to graduate occupational therapy students. *American Journal of Occupational Therapy, 69*(Suppl. 2), 6912185040. https://doi.org/10.5014/ajot.2015.017103

Cant, R. P., & Cooper, S. J. (2010). Simulation-based learning in nurse education: Systematic review. *Journal of Advanced Nursing, 66*, 3–15. https://doi.org/10.1111/j.1365-2648. 2009.05240.x

Centre for the Advancement of Interprofessional Education. (2016). *Statement of purpose.* https://www.caipe.org/resource/CAIPE-Statement-of-Purpose-2016.pdf

Charmaz, K. (2014). *Conducting grounded theory: A practical guide through qualitative analysis* (2nd ed.). Sage Publications Ltd.

Coppola, A. C., Coppard, B. M., & Qi, Y. (2019). Impact of participation in an interprofessional acute care high-fidelity simulation for occupational and physical therapy graduate students. *Journal of Allied Health, 48*(4), 248-256. https://www.asahp.org/journal-of-allied-health

Coker, P. (2010). Effects of an experiential learning program on the clinical reasoning and critical thinking skills of occupational therapy students. *Journal of Allied Health, 39*(4), 280-286. https://www.asahp.org/journal-of-allied-health

Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). SAGE Publishing.

Corbin, J., & Strauss, A. (2015). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (4th ed.). SAGE Publishing.

Cranton, P. (2006). *Understanding and promoting transformative learning: A guide for educators of adults.* Jossey-Bass.

Gibbs, D. M., Dietrich, M., & Dagnan, E. (2017). Using high fidelity simulation to impact occupational therapy student knowledge, comfort, and confidence in acute care. *Open Journal of Occupational Therapy, 5*(1). https://doi.org/10.15453/2168-6408.1225

Giles, A., Carson, N., Breland, H., Coker-Bolt, P., & Bowman, P. (2014). Use of simulated patients and reflective video analysis to assess occupational therapy students' preparedness for fieldwork. *American Journal of Occupational Therapy, 68*(Suppl. 2), S57–S66. https://doi.org/10.5014/ajot2014.685S03

Herge, E. A., Lorch, A., DeAngelis, T., Vause-Earland, T., Mollo, K., & Zapletal, A. (2013). The standardized patient encounter: A dynamic educational approach to enhance students' clinical healthcare skills. *Journal of Allied Health, 42*(4), 229-235. https://www.asahp.org/journal-of-allied-health

Howard, V. M., Englert, N., Kameg, K., & Perozzi, K. (2011). Integration of simulation across the undergraduate curriculum: Student and faculty perspectives. *Clinical Simulation in Nursing, 7*(1), e1-e10. https://doi.org/10.1016/j.ecns.2009.10.004

Knecht-Sabres, L. J. (2013). Experiential learning in occupational therapy: Can it enhance readiness for clinical practice? *Journal of Experiential Education, 36*(1), 22-36. https://doi.org/10.1177/1053825913481584

Knowles, M. S. (1985). Applications in continuing education for the health professions: Chapter five of *Andragogy in action*. *Journal of Continuing Education in the Health Professions, 5*(2), 80-100. https://doi.org/10.1002/chp.4760050212

Lateef, F. (2010). Simulation-based learning: Just like the real thing. *Journal of Emergencies, Trauma, and Shock, 3,* 348–352. https://doi.org/10.4103/09742700.70743

Lindstrom-Hazel, D., & West-Frasier, J. (2004). Preparing students to hit the ground running with problem-based learning standardized simulations. *American Journal of Occupational Therapy, 58*(2), 236-239. https://doi.org/10.5014/ajot.58.2.236

Mandrusiak, A. M., Isles, R., Chang, A. T., Low Choy, N. L., Toppenberg, R., McCook, D., Smith, M. D., O'Leary, K., & Brauer, S. G. (2014). Senior physiotherapy students as standardized patients for junior students enhances self-efficacy and satisfaction in both junior and senior students. *BMC Medical Education, 14,* 105. https://doi.org/10.1186/1472-6920-14-105

McGaghie, W. C., Issenberg, S. B., Petrusa, E. R., & Scalese, R. J. (2010). A critical review of simulation-based medical education research: 2003– 2009. *Medical Education 44*(1): 50-63. https://doi.org/10.1111/j.1365-2923.2009.03547.x

Merriam, S., & Bierema, L. (2014). *Adult learning: Linking theory to practice*. Jossey-Bass.

Mieure, K. D., Vincent, W. R., III, Cox, M. R., & Jones, M. D. (2010). A high-fidelity simulation mannequin to introduce pharmacy students to advanced cardiovascular life support. *American Journal of Pharmaceutical Education, 74,*

22. https://doi.org/10.5688/aj740222

Ohtake, P. J., Lazarus, M., Schillo, R., & Rosen, M. (2013). Simulation experience enhances physical therapist student confidence in managing a patient in the critical care environment. *Physical Therapy, 93*(2), 216-228. https://doi.org/10.2522/ptj.20110463

Olson, R., & Bialocerkowski, A. (2014). Interprofessional education in allied health: A systematic review. *Medical Education, 48*(3), 236–246. https://doi.org/10.1111/medu.12290

Ozelie, R., Both, C., Fricke, E., & Maddock, C. (2016). High-fidelity simulation in occupational therapy curriculum: Impact on level II fieldwork performance. *The Open Journal of Occupational Therapy, 4*(4). https://doi.org/10.15453/2168-6408.1242

Pike, T., & O'Donnell, V. (2010). The impact of clinical simulation on learner self-efficacy in pre-registration nursing education. *Nurse Education Today,* 30(5), 405–410. https://doi.org/10.1016/j.nedt.2009.09.013

Richardson, K. J., & Claman, F. (2014). High-fidelity simulation in nursing education: A change in clinical practice. *Nursing Education Perspectives, 35*(2), 125–127. https://doi.org/10.1097/00024776-201403000-00012

Rutherford-Hemming, T. (2012). Simulation methodology in nursing education and adult learning theory. *Adult Learning, 23*, 129–137. https://doi.org/10.1177/1045159512452848

Schaber, P. (2014). Conference proceedings – Keynote address: Searching for and identifying signature pedagogies in occupational therapy education. *American Journal of Occupational Therapy, 68,* S40-44. https://doi.org/10.5014/ajot.2014.685S08

Shea, C. (2015). High-fidelity simulation: A tool for occupational therapy education. *Open Journal of Occupational Therapy, 3*(4). https://doi.org/10.15453/21686408.1155

Shoemaker, M. J., Beasley, J., Cooper, M., Perkins, R., Smith, J., & Swank, C. (2011). A method of providing high-volume interprofessional simulation encounters in physical and occupational therapy education programs. *Journal of Allied Health, 40*(1), e15–e21. https://www.asahp.org/journal-of-allied-health

Springfield, E., Honnery, M., & Bennett, S. (2018). Evaluation of a simulation clinic for improving occupational therapy students' perceptions of interaction with parents and infants. *British Journal of Occupational Therapy, 81*(1), 51–58. https://doi.org/10.1177/0308022617736504

Thomas, E. M., Rybski, M. F., Apke, T. L., Kegelmeyer, D. A., & Kloos, A. D. (2017). An acute interprofessional simulation experience for occupational and physical therapy students: Key findings from a survey study. *Journal of Interprofessional Care, 31*(3), 317–324. https://doi.org/10.1080/13561820.2017.1280006

Vegni, E., Mauri, E., D'Apice, M., & Moja, E. A. (2010). A quantitative approach to measure occupational therapist–client interactions: A pilot study. *Scandinavian Journal of Occupational Therapy, 17*(3), 217–224. https://doi.org/10.3109/11038120903147956

Zigmont, J. J., Kappus, L. J., & Sudikoff, S. N. (2011). The 3D model of debriefing: Defusing, discovering, and deepening. *Seminars in Perinatology, 35*(2), 52-58. https://doi.org/10.1053/j.semperi.2011.01.003