Walden University

College of Education

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2019

Abstract

Perceptions of Higher Education Health Science Faculty on Debriefing After Simulation-Based Activities

by

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MS, San Jose State University, 2001

BS, San Jose State University, 1990

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Health science faculty striving to be academically competitive can adopt debriefing after simulation-based activities to help transition occupational therapy and physical therapy students from classroom skills to clinical competence. The purpose of this qualitative study was to discover the perceptions and experiences of health science faculty during and after their adoption of debriefing after simulation-based activities. The theory of diffusion and experiential learning theory were used as a conceptual framework. The research questions related to the perceptions and experiences of faculty from their training sessions and implementing debriefing sessions after simulation-based activities in their courses and how these experiences related to their adoption of debriefing. A university-wide e-mail was used to recruit participants. Twelve participants who met the selection criteria of current employee, received debriefing training, and utilized debriefing in their courses volunteered. Virtual interviews, memo notes, and reflexive journaling were collected, analyzed, and coded to identify themes. The faculty's perceptions and experiences of learning were initially critical and skeptical; for trialing, faculty were nervous and awkward; for adopting and experimenting, faculty were curious to learn different techniques; and for overall perceptions, faculty felt debriefing was a valuable teaching style that increased student learning and performance. This study helps fill the gap and contributes to positive social change in health science academia by providing insights to innovative teaching strategies that promote improved clinical competence in health science students.

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Dedication

To my soul-mate Cory and my children: Avalon, Sidney and Triton. Thank you for letting me take over the kitchen island. Fernweh for a new island so Ja Ha Ma!

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Chapter 1: Introduction to the Study

Introduction

Debriefing after simulation-based activities is an emerging innovation in health science education used for guiding the transition of students' classroom knowledge into clinical skills (Bethea, Castillo, & Harvison, 2014). Understanding the innovation-decision process provides increased insights into faculty development needs, so curriculum writers can design more and better experiential teaching opportunities in health science education (Cheng et al., 2015; Landeen et al., 2015). Such insight may also help ensure that prelicensed occupational therapy and physical therapy students receive the best education possible to facilitate their shift of classroom knowledge into clinical skills required for safe clinical practice.

This chapter presents a summary of research literature related to health science education with debriefing after simulation-based activities. This summary also includes the significance of faculty perceptions of the innovation-decision process and experiences of using debriefing after simulation-based activities. This chapter also includes details about the study such as the problem being addressed; the purpose; definitions; assumptions, delimitations, and limitations; and the significance of the study.

Background

In health science education, debriefing strategies after simulation-based activities allows time for learners to reflect on experiences and process actions and procedures for future situations (Cheng et al., 2016). To provide the best training for occupational therapy and physical therapy students, faculty can adopt debriefing strategies after

simulation-based activities. Nursing and medical educational literature has suggested the advantages and benefits of using debriefing strategies after simulation-based activities to facilitate nursing and medical student transitions from classroom knowledge to clinical skills (Hall & Tori, 2017; Paige, Arora, Fernandez, & Seymour, 2015; Reierson, Haukedal, Hedeman, & Bjork, 2017; Sawyer, Eppich, Brett-Fleegler, Grant, & Cheng, 2016).

There has been an increase in searches for effective teaching strategies by nursing faculty and administrators due to the reports of nursing students lacking adequate critical thinking and clinical judgement skills at the time of graduation (Carson & Harder, 2016; Sabei & Lasater, 2016). Although initially expensive for administrators and time-consuming for faculty, simulation-based activities followed with debriefing has been shown to increase these sought out skills in nursing students (Carson & Harder, 2016; Dreifuerst, 2015; Sabei & Lasater, 2016). Other faculty disciplines, such as medicine (Hull, Russ, Ahmed, Sevdalis, & Birnbach, 2017), ophthalmology (Staropoli et al., 2018), occupational therapy (Bethea et al., 2014), and physical therapy (Sabus & Macauley, 2016) have also adopted this teaching delivery, with similar results of students obtaining more clinically required skills.

Literature has indicated that the use of debriefing in occupational therapy and physical therapy education has been in earlier stages. Adequate research has been lacking regarding higher education occupational therapy and physical therapy faculty perceptions and experiences of using debriefing strategies after simulation-based activities (Bethea et al., 2014; Sabus & Macauley, 2016). The identified gaps addressed in this study include

the unknown innovation-decision process of using debriefing strategies after simulation-based activities, and the unknown experiences of occupational therapy and physical therapy higher education faculty from conducting debriefing sessions. The perceptions and experiences of these faculty members are important to understand for potential change in higher education health science programs. Findings may contribute to a more relevant and complete body of knowledge for higher education administrators to use in designing faculty development workshops and health science curriculum for occupational therapy and physical therapy programs.

Problem Statement

An innovation in occupational therapy and physical therapy higher education programs is the use of hospital-style simulation centers to teach a range of required therapy skills. With this innovation comes the need for health science faculty to modify their instruction to include debriefing sessions after simulation-based activities (Dufrene & Young, 2014; Nash & Harvey, 2017; Saylor, Wainwright, Herge, & Pohlig, 2016). Debriefing is a vital component of simulation-based pedagogy, as it enables students to transform classroom knowledge into clinical skills (Decker et al., 2013; Reierson et al., 2017). Higher education simulation-based experiences do not effectively transfer learning into the clinic without debriefing sessions facilitated by trained faculty (Nash & Harvey, 2017). Faculty trained in effective debriefing activities empower learners to analyze and synthesize thoughts and actions from a simulation-based experience as well as interpret the thoughts and actions that can translate into potential future clinical practice (Dufrene & Young, 2014; Saylor et al., 2016).

Because debriefing is a deliberate process, clinical educators and higher education faculty require a specific skill set to debrief (Dufrene & Young, 2014). Literature has addressed the effectiveness of faculty conducting debriefing sessions (Bethea et al., 2014; Dufrene & Young, 2014; Sabus & Macauley, 2016; Saylor et al., 2016), various debriefing methods (Ayres et al., 2015; Bong et al., 2017; Kolbe, Marty, Seelandt, & Grande, 2016; Krogh, Bearman, & Nestel, 2016), and student perceptions from debriefing sessions (Beischel, 2013; Oxelmark, Amoroe, Carlzon, & Rysedt, 2017). For example, Kim and Kim (2017) discussed the rapid adoption of trained nursing educators debriefing after simulation-based activities. However, little research has been conducted on the perceptions and experiences among occupational therapy and physical therapy faculty who have had to undergo training and adjust their teaching delivery to include debriefing sessions. This research helped to fill the gap in understanding the perceptions and experiences among these higher education health science faculty trained to conduct debriefing sessions. I addressed this gap in knowledge by exploring faculty perceptions of debriefing activities and their experiences when applying learned postsimulation debriefing strategies.

Purpose of the Study

The purpose of this qualitative study was to explore the perceptions and experiences of higher education health science faculty during and after their adoption of debriefing after simulation-based activities. The intent of my research was to increase awareness on the process of adopting and use of simulation and debriefing activities in health science education.

Research Questions

Research questions focus the study and guide how the study is conducted (Maxwell, 2009). The focus of this approach was the perceptions of the faculty as they described their experiences with training, conducting, and experimenting with debriefing sessions.

Research Question 1: What are the perceptions of higher education health science faculty trained in effective debriefing strategies when they incorporate debriefing sessions after simulation-based activities?

Research Question 2: What are the perceptions of higher education health science faculty during their experiential training on how to conduct effective debriefing sessions?

Research Question 3: What do higher education health science faculty experience when putting their training of conducting debriefing sessions into practice?

Research Question 4: How did the experiences of learning how to effectively debrief and initial trials of conducting debriefing sessions relate to faculty's adoption of incorporating debriefing sessions after simulation-based activities?

Conceptual Framework for the Study

A combination of Rogers's (2003) theory of diffusion and Kolb's (1984) experiential learning theory was used as the contextual lens to frame this study on the perceptions and experiences of health science faculty conducting debriefing sessions after simulation-based activities. According to Rogers (2003), a person begins with an awareness of an innovation, develops an attitude for the innovation, decides whether to adopt or discard the innovation, implements the innovation, and finally endorses the

decision on the innovation. Rogers (2003) stated the "rate of adoption is the relative speed with which an innovation is adopted by the members of a social system" (p. 221) and the "individuals' perceptions of these attributes predict an innovation's rate of adoption" (p. 265). Hence, the more experiences and training the faculty have, the more likely they are to continue to use debriefing in their courses and to promote its use in health science curricula.

Additionally, learning is an ongoing, holistic process that begins with an experience and ends with the person applying the newly learned information (Kolb, 1984). Kolb (1984) claimed that adult learning passes through four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation (1984). When learning how to use innovative teaching techniques, such as effective debriefing after simulation-based activities, health science faculty have been exposed to this cycle. Initially, faculty would use debriefing session templates (concrete experience). Then, faculty could reflect on their experience of leading the debriefing session (reflective observation). Next, the reflections may have caused new ideas or modifications to the debriefing template for their individual courses (abstract conceptualization). Finally, the faculty can apply their new ideas during new debriefing sessions (active experimentation). The success or failure of the experiential learning process may influence how faculty adopt the process of using postsimulation debriefing sessions in their courses. For example, a health science faculty is more likely to use effective debriefing strategies if the training mirrors the optimal cycle of experiences for adult learners (Kolb, 1984). The theoretical frameworks of Rogers (2003) and Kolb

helped explain the health science faculty's usage and perceptions of debriefing strategies after simulation-based activities as they relate to their learning experiences.

Nature of the Study

I used a basic qualitative approach method of inquiry, which supported the exploration of the perceptions and experiences of health science faculty who were conducting debriefing sessions after simulation-based activities (see Creswell, 2013; Merriam, 2009; Patton, 2015; Worthington, 2013; Yin, 2016). A basic qualitative research study is used to explore how people interpret or make sense of their lives and experiences (Merriam, 2009). Qualitative studies can also be used to uncover best practices (Worthington, 2013), which for this study was debriefing approaches, procedures, and methods of qualified health science faculty. This approach provided opportunities for me to gain insight into the perceptions and experiences of health science faculty of conducting debriefing sessions after simulation-based activities, as basic qualitative research can discover truths, contribute to theory and find patterns or themes (Patton, 2015).

Recorded semistructured interviews captured the data of 12 health science faculty who conducted debriefing sessions. The recorded interviews were transcribed and transposed into text files. Descriptive analysis was used to describe the participants' perceptions and experiences and coded for looking for underlying themes from the faculty's responses.

Definitions

Debriefing: "Interactive discussions or conversations after events to explore actions and thought processes, promote reflective thinking, and identify strategies to improve future performances" (Eppich, Mullan, Brett-Fleegler, & Cheng, 2016, p. 201).

Diffusion: "The process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 2003, p. 35).

Experiential learning: "The process whereby knowledge is created through the transformation of experience" (Kolb, 1984, p. 38).

Faculty: For the purpose of this research, faculty refers to the occupational therapy and physical therapy faculty employed by the approved university at the time of this study.

Innovation: "An idea, practice, or object perceived as new by an individual or other unit of adoption" (Rogers, 2003, p. 36).

Innovation-decision process: "The process through which an individual (or other decision-making unit) passes from gaining initial knowledge of an innovation, to forming an attitude toward the innovation, to making a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision" (Rogers, 2003, p.168).

Rate of adoption: "The relative speed with which an innovation is adopted by members of a social system" (Rogers, 2003, p. 221).

Simulation-based activities: For the purposes of this study, simulation-based activities include predetermined objectives for graduate occupational therapy and

physical therapy students to practice therapy skills with standardized patients in a designated simulation center.

Standardized patients: For the purposes of this study, standardized patients were occupational therapy and physical therapy graduate students who have been trained to accurately portray common characteristics displayed by a patient with a stated diagnosis for educational purposes and objectives.

Assumptions

Assumptions of this study include that the faculty honestly, thoughtfully, and openly answered all interview questions. Another assumption was that the faculty participants have completed at least one training session and they have adopted this innovated teaching style of using simulation-based activities in the designated simulation center in at least one of their courses. It was also assumed that these faculty members had experiences in conducting debriefing after simulation-based activities at least once in a course.

Scope and Delimitations

The scope of this study included participants who were employed as faculty. They were invited to participate through a campus-wide e-mail. Currently employed faculty who received debriefing training and reported that they had conducted at least one debriefing session after simulation-based activities in their courses were invited to participate in the interviews. Current faculty who had not received debriefing training and had not conducted at least one debriefing after simulation-based activities session were not invited to participate.

The study was bound to one university that has four separate campuses located across the United States. A sample of health science faculty who have learned and experienced conducting debriefing sessions after simulation-based activities was the focus of this inquiry. Purposive sampling from the specific criteria identified participants for virtual interviews or focus groups using Skype. All data collection methods of faculty describing their individual perceptions and experiences were recorded for transcription.

Participants in this study were higher education faculty who were trained to incorporate debriefing strategies in their courses. They represented a range of teaching experiences, perceptions, and experiences with conducting debriefing after simulation-based activities. Participants' diverse demographics were revealed in the initial questionnaire requesting their profession, sexual identification, age range, teaching experiences, and on which campus they were currently using debriefing after simulation-based activities. Transferability of the potential research findings from this study may inform future higher education research in occupational therapy and physical therapy academia. Insights from this study may influence curriculum design to have more innovative instructional experiences for the faculty to help transition students' skills from knowledge in the classroom to competency skills in the clinic.

Limitations

The participants in this study were higher education health science faculty that were either licensed occupational therapists or licensed physical therapists teaching at the same university that is comprised of four separate campuses across the United States.

Some participants may have taught at the same campus and they may have been from the same discipline.

A potential limitation may have been the time of year when the participants were invited to participate in the questionnaire, interviews, and focus groups. Respondents may have answered questions more quickly depending on their class duties and responsibilities. Another influencing factor could have been the time of day that the respondents answer questions. For example, participants may have been more alert in the morning and more fatigued at the end of the work day or have had more energy at the beginning of the school term versus at the end of the school term. To address these potential issues, interviews were arranged outside of busy school weeks and time periods.

Another limitation could have been that the four university campuses house their own simulation centers. These individual simulation centers have been constructed differently—for example, one campus had a 16-bed hospital ward whereas another campus had an 8-bed or 10-bed hospital ward. These variances could have affected class sizes of simulations and debriefings that could have influenced the perceptions and experiences of the faculty. As all the simulation centers have been built on the university campuses, the results of this study may not be generalized to other universities that conduct simulations and debriefings in actual hospitals or remote simulation centers.

Lastly, all the participants were from occupational therapy and physical therapy education. The results from these faculty members cannot be generalized to other disciplines, such as nursing or medicine, as the nature of the professional scope of practice in the simulations and debriefings are different.

Significance

This research study may offer insights into faculty perceptions and experiences with debriefing strategies after simulation-based activities in the classroom. Although simulation followed by debriefing is a common instructional strategy in medical education such as nursing and surgery, the use of simulation and debriefing is novel in occupational therapy and physical therapy education. The current literature has revealed student perceptions on debriefing (Beischel, 2013), student successful integrative learning from debriefing participation (Walshe, O'Brien, Murphy, & Hartigan, 2013), and the practice of expert debriefers (Krogh et al., 2016). However, there are few scholarly articles focused on the perceptions of higher education health science faculty on their experiences when incorporating debriefing and how that training and experience impacted adoption and diffusion of the strategy. By faculty sharing their perceptions, describing their experiences, and explaining their innovation-decision processes, they may contribute unique viewpoints to their discipline, adding more knowledge about potential faculty development needs.

Higher education occupational therapy and physical therapy faculty can learn the value and benefits of incorporating debriefing after simulation-based activities by understanding the strengths, weaknesses, and challenges revealed by these higher education health science faculty. The process of integrating this innovative paradigm shift of education delivery to prelicensed health science students can facilitate the transition for the faculty who have yet to adopt or experience conducting debriefing sessions after simulation-based activities.

Summary

This chapter provided an introduction and outline summary of this qualitative study that was conducted to investigate the perceptions and experiences of higher education occupational therapy and physical therapy faculty who have adopted debriefing strategies after simulation-based activities in their courses. Currently, what is known about faculty using debriefing strategies after simulation-based activities has been limited to research in nursing, medical, and first responders. To understand the unique health science fields, occupational therapy and physical therapy faculty who have learned and experienced conducting debriefing strategies after simulation-based activities were virtually interviewed to share their perceptions and experiences.

Chapter 2 provides a description of the literature search strategy for the literature review for study replication and a synthesis of debriefing research from military, aviation, medical, and health science education. The conceptual framework is also presented, which was Rogers' theory of diffusion and Kolb's experiential learning theory. An analysis of the conceptual framework is included to demonstrate the gap in occupational therapy and physical therapy academia research. I also provide a thorough review of the current research related to the key concepts of this study on health science faculty perceptions and experiences related to their use of debriefing after simulation-based activities.

Chapter 2: Literature Review

Introduction

The emerging use of debriefing after simulation-based activities in health science education provides students the opportunity to acquire safer patient handling skills, improved clinical reasoning skills, and sounder clinical judgement skills in a nonthreatening learning environment (Cockerham, 2015; Hall & Tori, 2017; Mariani, Cantrell, Meakim, Prieto, & Dreifuerst, 2013; Sabei & Lasater, 2016). Debriefing should be led by higher education faculty or clinical educators trained in the debriefing process (Cockerham, 2015; Dufrene & Young, 2014). Faculty trained in this debriefing process become skilled in using a nonjudgmental style of Socratic questioning using open-ended questions and follow-up probing questions to attain more specific and in-depth information, especially when student answers are ambiguous or vague (Dreifuerst, 2015; Wilson & Wittmann-Price, 2014). However, little research has been conducted on the perceptions and experiences among faculty who have had to adopt debriefing after simulation activities as an instructional strategy (Cheng et al., 2016). Therefore, the purpose of this qualitative study was to explore the perceptions and experiences of higher education health science faculty during and after their adoption of debriefing after simulation-based activities.

This chapter includes the literature search strategy, conceptual framework, and rationale of theory selection. The literature includes the diffusion of innovation theory, adult learning theory, and the history of debriefing. This chapter builds the framework for an investigation of how the learning and experience of health science faculty may

influence the adoption of debriefing strategies after simulation-based activities. The chapter concludes with a summary and explanation of the gap in the research addressed in this study.

Literature Search Strategy

The research studies and literature collected for this review pertain to higher education faculty perceptions and adoption of innovation for conducting debriefing after simulation-based activities with prelicensed health science students. This understanding is fundamental to gaining a broader view of faculty development training needs for adopting innovation into the curriculum. ProQuest, MEDLINE, ScienceDirect, SAGE Journals, and ResearchGate were used to search for articles. Search engines used include Google Scholar. Hardcopy literature includes *Experiential Learning* (Kolb, 1984), *Diffusion of Innovations* (Rogers, 2003), and *Review Manual for the Certified Healthcare Simulation Educator Exam* (Wilson & Wittmann-Price, 2014). The Society of Simulation in Healthcare website was also accessed for current literature on simulation and debriefing. To ensure the most up-to-date research, the searches on the databases were set for 2015 to present.

The primary keywords including variations and combination within the online databases were *debriefing, simulation, higher education faculty development, health science educators, perception, adult learning theory,* and *innovation adoption.* In addition, references of the cited literature were reviewed for additional information. Much of the current research on faculty development was borrowed from other medical

professions, such as nursing and anesthesiology, due to the lack of published research in occupational and physical therapy academia.

The following sections of the literature review are focused on (a) Rogers's theory of diffusion, (b) Kolb's experiential learning theory, and (c) the history of debriefing. The progression of debriefing along with the theories of diffusion of innovations and experiential learning supports the argument that the literature is lacking on the perceptions and experiences of higher education health science faculty. The history of debriefing since the Wright Brothers' airplane crash demonstrates the evolution of how debriefing has transitioned from aviation into other fields such as in the military, in clinical settings, and in academia.

Conceptual Framework

The two conceptual theories used to understand the issues inherent in the participants' experiences were Rogers's (2003) theory of diffusion and Kolb's (1984) experiential learning theory. Individual adoption of an innovation can be described by the individual's stage of learning and considering the individual's learning can increase use of the innovation based on perceived usability (Gerdeskold, Toth-Pal, Wardh, Strender, & Nilsson, 2017). These theories support the conceptual framework for this study to capture the depth of the perceptions and experiences of heath science faculty conducting debriefing after simulation-based activities.

Rogers's Diffusion of Innovations Theory

Rogers (2003) defined an innovation as "an idea, practice, or object that is perceived as new by an individual" (p. 12). People tend to adopt an innovation at varying

times based on diffusion of information, which refers to how an innovation is communicated over time (Rogers, 2003). For faculty to be motivated to make changes for the diffusion of innovation, they must feel supported and have solid communication channels with influential colleagues and supervisors (Kunnari & Ilomäki, 2016).

Rogers (2003) portrayed the innovation-decision process as a model consisting of five sequential stages: knowledge, persuasion, decision, implementation, and confirmation (see Figure 1). Each stage requires a series of choices and actions that assists an individual with dealing with uncertainty over time (Rogers, 2003). During the innovation-decision process, an individual first has initial knowledge of an innovation, then forms an opinion or attitude towards the innovation, and decides whether to adopt or reject the innovation (Rogers, 2003). The first three stages are considered the mental thinking and deciding stages. In the implementation stage, individuals shift their choice or new concept into action or use even if they still have uncertainty. In the confirmation stage, individuals decide to incorporate the innovation into daily practice or reverse their decision altogether if they come across conflicting information (Rogers, 2003). The innovation-decision process is also marked by the time it takes for an individual to go through each stage cognizant that potential rejection can happen at any stage (Rogers, 2003). For voluntary adoption to occur, the person must decide that the innovation is the best choice for moving forward (Mohammadi, Poursaberi, & Salahshoor, 2018).

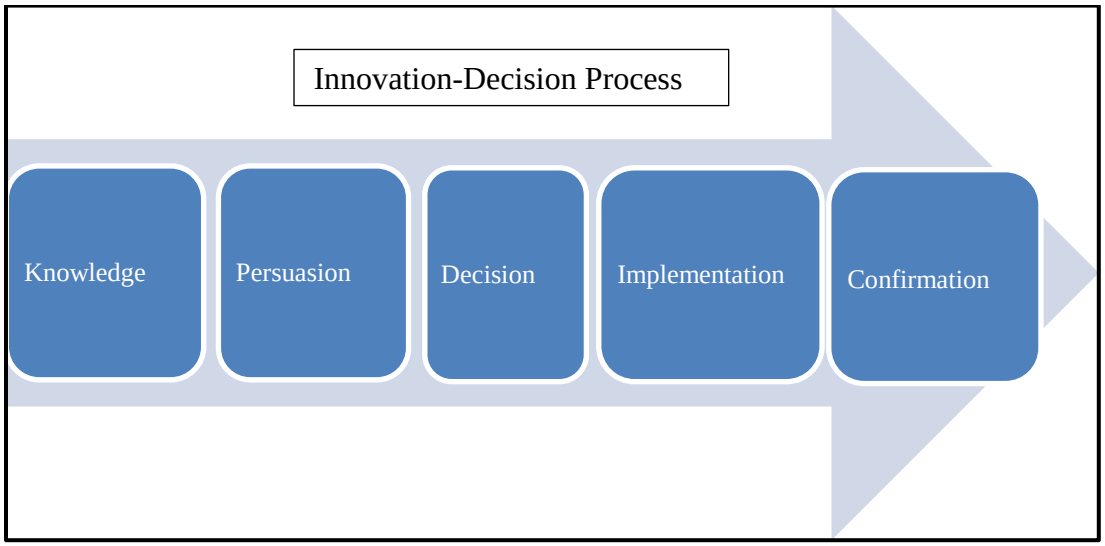

Figure 1. Rogers's innovation-decision process. Adopted from *Diffusion of Innovations*, by E. M. Rogers, 2003. New York, NY: Simon & Schuster.

Relative advantage, compatibility, complexity, observability, and trialability are the five primary characteristics or attributes that influence the acceptance or rejection of an innovation, mostly during the persuasion stage (Rogers, 2003). Relative advantage refers to how much an innovation is considered as better than similar ideas (Rogers, 2003). The relative advantage of using debriefing strategies after simulation-based activities include improvement in the quality of student therapists' physical and communication skills required for clinical practice (Bethea et al., 2014; Landeen et al., 2015; Oxelmark et al., 2017). Compatibility is how consistent an innovation is with values, experiences, and needs of those considering the innovation (Rogers, 2003). This attribute compliments the current educational values, past experiences, and current need to have students meet modern competencies for the transition from the classroom to the clinic (White, 2017). Complexity refers to whether an innovation seems difficult to

understand and use (Rogers, 2003). As with any innovation, conducting debriefing sessions has a learning curve, and this attribute is influenced by faculty training. Trialability is how much an innovation may be experimented with (Rogers, 2003, p. 258). If debriefing training and practice are designed for simple use with a variety of options, more health science faculty may adopt this innovation (Sawyer et al., 2016). Lastly, observability refers to how visible the results of an innovation are (Rogers, 2003). If colleagues see the advantages of conducting debriefing sessions after simulation-based activities, then the faculty are more likely to adopt the debriefing strategy in their classroom (Kim et al., 2017).

After being persuaded to adopt the innovation, in this case conducting debriefing sessions after simulation-based activities, the faculty members would enter the decision stage where they engage in training or learning workshops that provide them opportunities to practice. In turn, the practice sessions help them decide whether to adopt or reject the innovation or use of debriefing in their courses (Rogers, 2003). Immediately following this decision stage, the faculty enter the implementation stage where they may spend a significant amount of time trying multiple approaches at conducting debriefing sessions after simulation-based activities with their students (Rogers, 2003). The last stage that the faculty would go through is the confirmation stage where they recognize the benefits of using debriefing sessions, integrate debriefing sessions after simulation-based activities on a routine basis in their courses, and promote and share their successes with their colleagues (Rogers, 2003). Institutional support is needed for faculty to change

and adopt the innovation because support is tied to teacher motivation and whether they have an environment for innovation (Kunnari, & Ilomäki, 2016).

Applying Rogers's innovation-decision process to faculty using debriefing strategies, the faculty are made aware and educated on debriefing after simulation-based activities, then the faculty form their own opinion or attitude toward the debriefing process. For example, Kim, Park, and O'Rourke (2017) found in their pretest–posttest design study of 52 nursing faculty that participants' attitudes significantly influenced their intent to adopt the innovation of simulation-based activities and debriefing. The individual faculty member decides whether to adopt or reject inclusion of debriefing in his or her curriculum and he or she implement their choice and actions. By understanding the perceptions and experiences of faculty who have adopted debriefing, this research may uncover underlying themes that may influence the non-adopters or potential adopters to assume this innovative teaching delivery.

Kolb's Experiential Learning Theory

Kolb's (1984) experiential learning theory evolved from collected work by Lewin's (1951) experiential learning model, Dewey's (1938) model of learning, and Piaget's (1970) model of learning and cognitive development explaining that learning is a continual process based on the interactions between people and their environmental experiences. The experiential learning theory was developed as Kolb observed that adults tend to learn best through hands-on experience and that learning is a dynamic process with four distinct stages—observe, think, plan, and do—in a continuous learning cycle. Kolb's theoretical framework is relevant for this study as the health science faculty

engage themselves in the learning process of incorporating debriefing strategies after simulation-based activities as an adaptive learning system (Truong, 2016). Using Kolb's framework for prompting questions facilitates more effective debriefing sessions after simulation-based activities (Nash & Harvey, 2017).

Dimensions of experiential learning theory. Faculty perceptions and experiences of including simulation and debriefing in their curriculum is compatible with experiential learning theory because it is a practiced teaching delivery that promotes reflection (thinking) and adjustments and changes in teaching delivery (doing) by professional adults (Wilson & Wittmann-Price, 2014). The premise that "knowledge is created through the transformation of experience" is particularly applicable to health science faculty because they have learned how to debrief by participating in debriefing training sessions themselves (Kolb, 1984, p. 38). In turn, based on their new knowledge and training, faculty can facilitate dynamic transformational learning for their students through debriefing after simulation-based activities (Kolb, 1984).

The learning cycle. The experiential learning theory is a continually changing process where ideas and concepts are dynamically modified and molded by experiences (Kolb, 1984). For instance, O'Regan, Molloy, Watterson, and Nestel (2016) depicted Kolb's experiential learning as never-ending, as each experience influences the prior experience. Additionally, Kolb's theory is significant for simulation-based education as faculty try different approaches based on new understanding (Gardner, 2013).

Kolb (1984) outlined four interactive stages (see Figure 2) that contribute to adult learning starting with the concrete experience, then reflective observation, followed by abstract conceptualization, and ending with active experimentation.

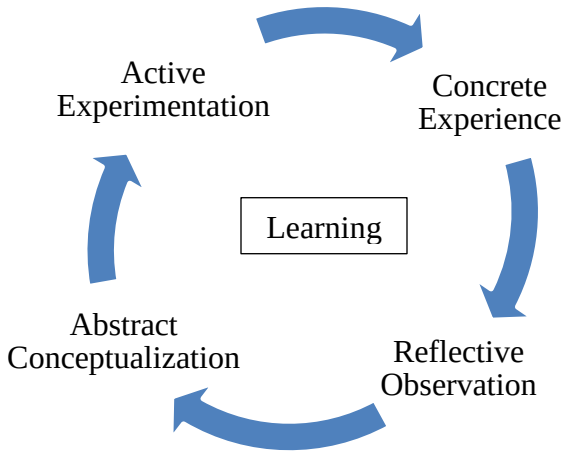

Figure 2. Kolb's learning cycle. Adapted from *Experiential learning: Experience as the source of learning and development*, by D. A. Kolb, 1984. Englewood Cliffs, NJ: Prentice-Hall.

The stages of learning in the experimental learning theory model signify an interactive process of learning that requires a variety of experiences to influence knowledge development. In the context of the population for this study, health science faculty begin the concrete experience as the first time learning how to conduct a debriefing session through role-playing scenarios. Through reflective observation, the faculty watch debriefing sessions as examples and conduct mock debriefing sessions for how-to learning purposes. The faculty can reflect on their performance and learning experience through abstract conceptualization. Finally, the faculty can conduct their own debriefing sessions with students using active experimentation.

Kolb (1984) suggested that learners can enter and exit the adult learning process at any point, however, they need to follow the stages in the established sequence. A key element in the learning process is the need to reflect on the experience (Mariani et al., 2013; Sawyer et al., 2016). The health science faculty who have participated in training for conducting effective debriefing sessions have received feedback as they go through the learning rotations. This feedback triggers new actions and consequences, enhancing the continual learning process (Healey & Jenkins, 2000).

Benefits of experiential learning. The benefits of using the experiential learning theory are to appreciate faculty's experiences of conducting debriefing sessions with their students after simulation-based activities. From this experience, faculty have the potential to be more engaged in the learning process themselves (Wilson & Wittmann-Price, 2014). Debriefing training experiences can provide faculty with experiential learning opportunities where they can find their own preferred scholarship. Teachers should also regard their own learning as the beginning of developing teaching strategies (Healey & Jenkins, 2000). Being aware of individual learning as outlined by Kolb (1984) may also influence educators' perception of this innovation's attributes and rate of conducting debriefing sessions after simulation-based activities.

Rationale for Conceptual Framework

Diffusion of innovation theory (Rogers, 2003) and experiential learning theory (Kolb, 1984) formed the basis of the conceptual framework for this study. The five stages in the innovation-decision process by Rogers (2003) may be influenced by Kolb's (1984) preferred stages of learning within the faculty. For example, Rogers' awareness of the

innovation may have been influenced by Kolb's concrete experience during the first time a faculty member was learning how to conduct a debriefing session. As the faculty was developing an attitude towards the tool of debriefing, Kolb's reflective observation may have influenced their decisions. As the faculty member was deciding whether to adopt or reject the innovation of debriefing in their classroom, Kolb's abstract conceptualization, doing and thinking, may have been playing a role in their decision. Lastly, as the faculty member was implementing the innovation, the faculty was in Kolb's active experimentation stage of learning (Gardner, 2013; Sabus & Macauley, 2016).

Literature Review Related to Key Variables and Concepts

Although debriefing has its historical roots in aviation, debriefing has transcended into the military, clinical medicine, and health science education. The Healthcare Simulation Dictionary defined debriefing as "an activity that follows a simulation experience and led by a facilitator to encourage participants' reflective thinking and provide feedback about their performance" (Lopreiato, 2016, p. 9). The earliest documentation on debriefing occurred in 1910 after the first fatal plane crash with Orville and Wilbur Wright when they wrote down their reflections of the plane crash (The Wilbur and Orville Wright Timeline, 1867-1948).

Military Debriefing

Debriefing appeared again in the 1940s during WWII when a military historian named Samuel Lynn Atwood Marshall conducted group interviews, labeled "interviews after combat," with the soldiers immediately after the troops returned from war missions (Morrison & Meliza, 1999). Marshall was documenting the WWII events to gather

intelligence for future military simulations, missions, and soldier performances (Headquarters, 1993). The *interviews after combat* combined with performance reviews evolved into "after action review" that the military continues to use after simulated and genuine missions (Headquarters, 1993). In addition, recreating the events of military missions through storytelling is found to be therapeutic for the soldiers and has helped decrease psychological stress from the witnessed traumatic events (Fanning & Gaba, 2007). According to Fanning and Gaba (2007) in their critical review of debriefing, emergency first responders also experienced less psychological stress after narrative reconstruction of clinical critical incidents. Calhoun, Boone, Miller, and Pian-Smith (2013) warned that debriefers need repetitive experience leading debriefing sessions to ensure emotional safeguard in the students before they conduct emotionally charged simulations such as mannequin advancing medical complications or deaths based on the students' interventions.

Aviation Debriefing

Debriefing re-emerged in the aviation industry in the 1970s from an unexplainable aircraft crash that triggered formal training on flight communication and crew coordination in commercial aviation using rudimentary simulation and debriefing (Lauber, 1987). This aviation training, labeled "crew resource management," progressed to line-oriented flight training in the 1980s that consisted of full crew training in a simulator using normal, abnormal, and emergency procedures that may be expected during flights, including Apollo lunar missions with National Aeronautics and Space Administration (Butler, 1993).

During the late 80s and early 1990s, the critical incident stress debriefing (CISD) developed as a specialized way to debrief groups and individuals to deal with emotional and physical symptoms following disasters, trauma, or military combat related stress (Mitchell, 1983). The field of anesthesiology expanded CISD to include critical medical management by re-creating operating rooms for hands-on training simulation followed by debriefing sessions to maximize learning, facilitate change, and prevent medical mistakes (Howard, Gaba, Fish, Yang, & Sarnquist, 1992; Gaba & DeAnda, 1988).

Clinical Medical Debriefing

Lateef (2010) outlined the opportunity for discipline specific and interdisciplinary simulation-based activities in simulation centers to develop and refine skills of healthcare workers without adding undo risks to actual patients. Medical professions, such as surgery (Gerdesköld et al., 2017; Zendejas, Cook, & Farley, 2010), obstetrics, gynecology, and reproductive biology (Gardner, 2013), nursing (Dreifuerst, 2012), first responders (Roh, Issenberg, Chung, Kim, & Lim, 2013), clinical physical therapy (Sabus & Macauley, 2016), and occupational therapy (Bethea et al., 2014) developed discipline specific simulation-based training with debriefing. The literature revealed interdisciplinary simulations designed with medicine and nursing staff and students excluding the professions of occupational therapy and physical therapy (Montgomery, Griswold-Theodorson, Morse, Montgomery, & Farabaugh, 2012; Theilen et al., 2013).

Health Science Academia Debriefing

Debriefing in health science education is the facilitated, interactive discussion to guide the students' self-reflections on emotions, thought processes, and actions after a

simulated patient scenario (Eppich et al., 2016; Paige et al., 2015). The process of debriefing after health care simulations is to ultimately improve the safety and quality of patient care (Hull et al., 2017) by fostering future clinical decision making and critical thinking skills in the students (Dreifuerst, 2012; Hall & Tori, 2017; Paige et al,, 2015). Additionally, in this safe learning environment, students experience how their clinical decisions and actions affect patient outcomes (Bogossian et al., 2017; Cockerham, 2015; Levett-Jones & Lapkin, 2014).

The focus of health science debriefing research has shifted recently. A decade ago, the literature on debriefing was introductory in nature with explanations on the concept of debriefing and how to best use debriefing after simulation-based learning activities in medical facilities, such as hospitals, with nursing and medical professionals (Driefuerst, 2012; Gardner, 2013). Because of the widespread diffusion of simulation-based learning, studies were expanded to explore how to incorporate debriefing while utilizing standards of best practice guidelines mostly in nursing practice (Decker et al., 2013). Of late, the literature consisted of training tips on various debriefing styles and coaching the professionals who were debriefing learners (Cheng et al., 2017; Eppich et al., 2016; Paige et al., 2015). This shift in the literature was important as it reflected the growing use of and call for debriefing strategies after simulation-based activities in healthcare education as well as healthcare practice.

Because of this change in focus, nursing faculty were now tasked to shift their teaching delivery to include simulation and debriefing experiences for their students as recent evidence suggested nursing students were not prepared to think critically and

professionally at the time of graduation (Carson & Harder, 2016; Sabei & Lasater, 2016). For experienced faculty, the use of this alternative teaching strategy of simulation-based activities followed by debriefing may be intimidating because the faculty may have never experienced simulation and debriefing in their own practice or educational journey (Woolfrey, 2017). Furthermore, they may be viewed as a novice learner again even in their faculty development training workshops (Wilson & Wittmann-Price, 2014). Understanding the perceptions and experiences of faculty who have already adopted this innovation may influence and facilitate change in additional higher education faculty as health science collegiate programs are striving to meet the demand for more innovative curricula (Kunnari, & Ilomäki, 2016; Sabei & Lasater, 2016).

Landeen et al. (2015) found the faculty motivation to use simulation combined with debriefing learning activities is largely based on the perceptions and attitudes of the faculty, the more positive the perception and attitude, the more likely simulation and debriefing occur. Kopcha, Rieber, and Walker (2016) also demonstrated in a mixed methods study of the process, that over seventy-five percent of their faculty participants shared the value and understanding of adopting innovation in teaching. These studies compliment the current higher education health science academic delivery demand for innovative teaching delivery with the aim of producing more prepared graduates to transition seamlessly from the classroom into clinical practice (Cockerham, 2015; Johnston, Coyer, & Nash, 2017; Sabei & Lasater, 2016).

Taibi and Kardong-Edgren (2014) found simulation and debriefing strategies were used in approximately 1,670 nursing programs in the United States. Ample nursing

education research demonstrating the perceptions among nursing faculty who have had to undergo training and adjustment to their teaching delivery with debriefing sessions (Landeen et al., 2015); the perceptions of nursing students, nursing faculty, and nursing preceptors (DeMeester, Hendricks, Stephenson, & Welch, 2017); and interdisciplinary perceptions between nursing and medicine (Hull et al., 2017) reported positive results in regards to using debriefing strategies after simulation-based activities to facilitate the students skill transitions from the classroom to the clinic.

In an exploratory, quasi-experimental, pretest-posttest study, Deifuerst (2012) found that using debriefing promotes greater changes in reasoning skills and higher perceptions of quality education in 240 pre-licensed nursing students. Similarly, in a mixed method design study, Johnston et al. (2017) found 12 nursing students to share common themes of the enhanced learning from the debriefing that could transfer into the clinic, the awareness of their current level of nursing practice knowledge, and the use of debriefing validated their newly training nursing actions during the simulations.

Bethea et al. (2014) found 175 occupational therapy and occupational therapy assistant programs in the United States use some form of informal or formal simulation-style activities in their curricula with reported improvements in student critical reasoning, problem solving, decision making, and communication skills; however, there was no mention of debriefing or faculty's perceptions or experience with debriefing. Similarly, Bennett, Rodger, Fitzgerald, and Gibson (2017) found in a literature review of 57 studies that were descriptive, pre-post design, or were student's perceptions of simulation that reflected a wide range of use of simulation in occupational therapy curricula with a loose

definition of simulation. Mori, Carnahan, and Herold's (2015) systematic review of the literature reported results consistent with findings in Bethea et al. (2014) and Bennett et al.'s (2017) studies yet in physical therapy curricula demonstrating successfully integration and descriptions of simulation-based learning activities without any emphasis on debriefing, faculty's perceptions, or faculty's experiences conducting debriefing sessions.

The beneficial use of debriefing after simulation-based activities that promotes retention of student learning is also found in medical research. Nathan et al. (2016) found from a quasi-experimental pre-post intervention study that eight medical participants had significant improvements in communication, patient evaluation, and patient management skills two years after the simulation and debriefing training. Ballouhey et al. (2015) had similar results in an active versus passive training sessions of 18 participants, with significant results ($P<0.01$) demonstrating the active participants in the simulation retained more task training skills after six months compared to the passive participants. Staropoli et al. (2018) compared 11 simulation-based trained ophthalmic surgical residents to eleven non-simulation trained ophthalmic surgical residents and found the simulation-based trained residents had only 2.4% post-surgical complications compared to the non-simulation-based trained residents who had 5.1% post-surgical complications concluding that surgical simulation training significantly ($p=0.037$, Fisher exact test) reduces the rate of live post-surgical complications.

In nursing and medicine curricula, the demand for effectively trained health science faculty was growing with accreditation and licensing agencies accepting up to

25% of simulation-based training in lieu of clinical training (Kolbe & Rudolph, 2018). The competence of nursing students' skills at time of graduation is the responsibility of the nursing universities (Clark, Macauley, & Butera, 2015). However, Anderson, Bond, Holmes, and Carson (2012) discovered that most higher education institutions did not have formal faculty development plans for simulation-based learning and debriefing training nor did they have a systematic way to develop experienced faculty transitions from novice debriefers to expert debriefers. A national survey found that only approximately 48% of nursing faculty who were conducting simulations received formal training on debriefing practices (Rojas, Parker, Schams, & McNeill, 2017). Wilson and Wittmann-Price (2014) argued that advocating for simulation and debriefing faculty training, providing resources for faculty development, and understanding faculty perceptions and experiences may positively influence utilizing simulation and debriefing in curriculum.

In a descriptive correlational study of 482 nurses and nursing students, Mohammadi et al. (2018) found a significant positive relationship between the participants' perception of the innovation's attributes and the widespread adoption of the innovation. In addition, several studies (Doherty-Resptrepo et al., 2017; Gaba & Ruth, 2007; Paige et al., 2015) have described faculty learning using Kolb's (1984) experiential learning theory as learning by doing, thinking about conducting the debriefing process, and assimilating the learned lessons into their courses. Understanding health science faculty perceptions on adoption of incorporating this innovation and their experiential learning experiences may facilitate future faculty adopters as they are attempting to fulfill

the demand to educate more competent occupational therapy and physical therapy pre-licensed students (Mori et al., 2015; Sabus & Macauley, 2016).

Simulation and debriefing have had such a profound effect on nursing practice that Decker et al. (2013) collaborated and produced best practice guidelines for the debriefing process in clinical nursing. According to Wilson and Wittmann-Price (2014), currently up to fifty percent of simulation and debriefing can replace clinical experience with equal clinic preparedness outcomes in pre-licensed nursing students. In addition, during the past few years, health science curriculum, such as occupational therapy (Bethea et al., 2014) and physical therapy (Mori et al., 2015) have redefined classroom practical learning to include some form of simulation-based activities in the students' last academic semester for preparing pre-licensed heath science students in their transition from classroom to clinic.

Faculty and student perceptions of simulation and debriefing are found primarily in the nursing literature (Johnston et al., 2017; Kim et al., 2017). To explore faculty perceptions on debriefing, Kim et al. (2017) found that after online simulation training, nursing faculty members (n = 52) significantly improved their knowledge and attitudes towards debriefing and their intent to adopt simulation and debriefing pedagogy in their nursing curriculum is significantly influenced by their attitudes. Likewise, Johnston et al. (2017) found consistent results with nursing students (n = 12) perceptions of debriefing as a useful strategy to improve knowledge and attitudes towards debriefing after simulated experiences. Although Mariani and Doolen (2016) agreed that simulation and debriefing should be integral part of nursing education as they improve knowledge,

perceptions and attitudes, the registered nurse participants (n = 90) believed that existing research lacked participants and more studies need to be conducted using multiple sites and larger sample sizes.

Nash and Harvey (2017) reported results consistent with findings in Johnston, Coyer, and Nash's (2017) and Mariani and Doolen's (2016) studies. However, Nash and Harvey also found that in the simulated classroom, the perceptions of the nursing students (n = 25) indicated that the opportunity of the university-based simulated and debriefed experiences did not directly transfer to the clinic setting and faculty assistance is needed to help students in making the classroom to clinic transitions.

The history of debriefing in the literature has been studied in aviation, first responders, surgeons, nursing education, and clinical therapy. No research has been found regarding the perceptions of higher education health science faculty who have adopted the innovation of debriefing pre-licensed occupational therapy and physical therapy students after simulation-based activities.

Synopsis of Current Literature Demonstrating Gap in Health Science Education

Based on the extensive review of the literature, there is limited understanding of how occupational therapy and physical therapy higher education faculty have adopted the innovation of using debriefing strategies after simulation-based activities and their experiences of conducting debriefing sessions. The perceptions and experiences of these faculty members are important to understand for the adoption and facilitation of change in potential higher education health science programs. There was no empirical evidence found regarding debriefing strategies used or the innovation-decision process of health

science faculty and their inclusion of debriefing after simulation-based activities in their teaching delivery.

Summary and Conclusions

Higher education health science faculty were challenged to create more dynamic and engaging learning environments to facilitate the transition of skills in pre-licensed health care professionals from classroom to clinic. This study provided qualitative data from health science faculty teaching on multiple nation-wide campuses at a graduate level university. The history of debriefing and the connections between adult learning theory and adoption of innovation supported the intent of this research, which was to explore the perceptions and experiences of these health science faculty and their adoption of debriefing strategies after simulation-based activities for their teaching delivery. Exploring what higher education health science faculty trained in debriefing strategies experience when they incorporate debriefing sessions after simulation-based activities helped to fill the gap in the occupational therapy and physical therapy educational literature. In addition, identifying challenges and understanding the phenomena of experiences and innovation-decision process may facilitate other health science faculty to include simulation-based activities and debriefing in their curriculum.

The next chapter shows the qualitative research design aimed at exploring why and when faculty in a health science university adopt the integration of using debriefing strategies after simulation-based activities with their students. Chapter 3 contains the methodology selected, the sample, survey instruments, and data analysis methodology.

Chapter 3: Research Method

Introduction

The purpose of this qualitative study was to explore the perceptions and experiences of higher education health science faculty during and after their adoption of debriefing strategies after simulation-based activities. The participants were higher education faculty who were teaching in the occupational therapy and physical therapy programs at the time of this study. Rogers's (2003) theory of diffusion and Kolb's (1984) experiential learning theory were used to help understand the perceptions and experiences of these faculty members who have learned to incorporate debriefing sessions after simulation-based activities in their courses.

This chapter is arranged into several sections and includes the methodology that was used to conduct this research. The first section includes the research questions, design and rationale for this study, and the role of the researcher. The next section describes the methodology involving the participant selection, instrumentation, data collection procedures, and data analysis plan. The last section involves issues of trustworthiness, ethical procedures, and concludes with a summary.

Research Design and Rationale

The research questions that guided this basic qualitative study were developed based on simulation and debriefing research:

Research Question 1: What are the perceptions of higher education health science faculty trained in effective debriefing strategies when they incorporate debriefing sessions after simulation-based activities?

Research Question 2: What are the perceptions of higher education health science faculty during their experiential training on how to conduct effective debriefing sessions?

Research Question 3: What do higher education health science faculty experience when putting their training of conducting debriefing sessions into practice?

Research Question 4: How did the experiences of learning how to effectively debrief and initial trials of conducting debriefing sessions relate to faculty's adoption of incorporating debriefing sessions after simulation-based activities?

A qualitative approach was selected to explore the perceptions and experiences of health science faculty from learning how to conduct debriefing and their use of debriefing strategies after simulation-based activities in their courses. Understanding how health science faculty learn how to use debriefing and how this impacts their perceptions of successful integration into simulation-based activities required a collection of perceptions and accounts of experiences by each faculty member (see Moustakas, 1994). Therefore, I used semistructured interviews and focus groups with open-ended questions to get rich, thick data. In addition, follow-up interviews with member checks were used to ensure accuracy of transcriptions (Ravitch & Carl, 2016). Interviewing participants allows a researcher to discover peripheral items that cannot be observed such as feelings and thoughts (Patton, 2015). In contrast, using a standardized method with close-ended questions required in a quantitative study limits and narrows the results to numbers and graphs (Patton, 2015). Additionally, a quantitative method that requires participants to answer questions in preestablished categories may omit valuable and important data and produce little insight to the phenomena of interest. Thus, I did not use a quantitative

method or mixed-method approach, which requires both quantitative and qualitative methodologies, because numerical data was not needed (Patton, 2015).

Although several qualitative approaches, such as narrative inquiry and case study analysis, could have been used for this research, the basic qualitative approach was selected based on the research purpose and research questions. The basic qualitative research design is used to explore the participants' experiences, the meaning of those experiences, or a process that the participants were part of prior to the study (Worthington, 2013). Narrative inquiry could have been useful to understand the experiences of faculty and how they have come to use debriefing after simulation-based activities because it is a design that uncovers a sequence of events, usually from only a few individuals, to build one story (Patton, 2015). I focused on how faculty tell their stories and how they have made meaning out of their experiences of using debriefing over time rather than examining the procedural way they were using debriefing (Rubin & Rubin, 2012). However, one key characteristic of narrative inquiry is that the interviews are held over a period to assist the researchers to create a sequence or series of events (Patton, 2015). Because narrative inquiry requires lengthy time and limited participants, I did not choose it.

Using a case study qualitative analysis could have also provided rich, thick description by a few faculty on their experiences of using debriefing after simulation-based activities. I could have compared several case study reports. For data, I could have conducted interviews, observation, review documentation, and report impressions (Patton, 2015). With the data I would have written a case report for each participant.

However, three to four faculty members may not have provided enough data or representation of the faculty's perception on debriefing for the sake of this study, so I did not use it. Therefore, a basic qualitative approach was the best strategic focus to answer the research questions.

Role of the Researcher

For this basic qualitative research study, I served as an observer who was the primary investigator, acting as the primary instrument for data collection and analysis (Merriam & Tisdell, 2016). For this study, my role as the researcher was to interview participants to ask about their experiences with their learning how to and adoption process of conducting debriefing sessions after simulation-based activities in their courses. This process began by obtaining a letter of cooperation for conducting research at this university with the faculty from all the campuses. Then I obtained permission from the Institutional Review Board (IRB) before I approached any potential participants (approval no. 12-04-18-670859). Next, I contacted all faculty through a university-wide e-mail seeking volunteer participants. The e-mail contained the nature of the study and inclusion criteria. In addition, attached to the e-mail was the informed consent for interested participants to read and reply "I consent" to the e-mail. The research participants were then e-mailed a link to take a 10-item questionnaire (Appendix A). From the results of this questionnaire, the participants were placed by their choice into individual interviews or focus groups.

All participants were recruited from the four campuses of the university where I was employed. I was a full-time instructor in the occupational therapy department, and I

worked in the residential program on one of the campuses. Although I only worked on one campus, there could have been a chance that a participant could have been from the same campus where I worked, or I may have had contact with faculty from the other campuses in an online format with university-wide team projects. It is important to note that in my current position, I had no supervisory position or instructor relationships regarding power over any faculty and, in this case, participants. In addition, I did not have any personal relationships with any participants.

In a qualitative study, the researcher's role is to collect data via open-ended questions in interviews and focus groups (Creswell, 2013). I was the researcher in this study as I planned to conduct theses virtual interviews with the faculty. Triangulation of the data was achieved by interviews, memo notes during the interviews, and reflexive journaling immediately after the interviews. Using multiple sources of data collection and triangulation helps minimize researcher bias (Maxwell, 2009). The participants were provided a transcription of their online individual interview, so they could review the content and confirm that their comments and perspectives were portrayed accurately (Ravitch & Carl, 2016). Member checking promotes participant validation on what was stated in an interview so that the items stated are accurate for understanding the responses needed for analysis (Ravitch & Carl, 2016).

Methodology

This section is organized into the rationale for participant selection, instrumentation with researcher-developed instruments, procedures for recruitment, participation, data collection, data analysis plan, and issues of trustworthiness and ethical

procedures. Supporting information is described in each section with necessary details of procedures and processes for other researchers to replicate this study.

Participant Selection Logic

Purposive sampling was used for recruitment of participants from a university comprised of four different campuses which all contain simulation centers. Using purposeful sampling can provide context-rich information that can highlight the topic of the study (Patton, 2015). In addition, purposive sampling allows the researcher to hand-pick participants and research settings deliberately to obtain the information required to answer the study's research questions (Patton, 2015; Ravitch & Carl, 2016).

The questionnaire I e-mailed faculty helped me identify faculty who had been trained in simulation and debriefing and who have conducted at least one debriefing session after simulation-based activities (see Appendix A). I aimed to select a sample for 12 faculty and one to two focus groups using the following criteria: (a) faculty identified themselves as currently working for the university, (b) faculty indicated that they have participated in at least one training session of simulation and debriefing, (c) faculty have conducted at least one debriefing session after simulation-based activities.

With the faculty who met the inclusion criteria, I conducted 12 individual virtual interviews. During each interview, I took memos. After each interview, I journaled my thoughts immediately (see Patton, 2015). Although there are no set rules for sample size with a qualitative study (Patton, 2015; Ravitch & Carl, 2016), I interviewed 12 participants to answer my research questions and reach saturation for this study. I was hoping to reach data saturation with 12 participants because they represented

approximately 20% of the current faculty, and I anticipated that there would be no new information forthcoming. Additionally, 12 interviews typically produce data saturation (Guest, Bunce, & Johnson, 2006). Diversity of the participants was managed through the questionnaire to include teaching history, courses teaching at time of study, and teaching simulation-based activities followed by debriefing history. Faculty who were not working at this university, who had not been trained, and who were not conducting debriefing after simulation-based activities were not included in this study.

Instrumentation

Qualitative data collection strategies include observations, interviews, focus groups, case studies, and careful document review (Patton, 2015). For this study, I used an e-mail questionnaire for demographics, virtual interviews, memos during interviews, and reflexive journaling immediately after each interview. In addition, after transcribing each interview, I e-mailed participants their transcription for member checking and accuracy of their responses.

Questionnaire. I sent an e-mail to all faculty who were currently employed at the university at the time of this study explaining the research study with the informed consent attached. The interested potential participants were instructed to reply to the e-mail "I consent," and then a follow-up e-mail was sent with a link to an online questionnaire (see Appendix A). Virtual questionnaires can easily reach an unsurmountable amount of people instantaneously (Ravitch & Carl, 2016). This questionnaire had questions regarding demographics, teaching experiences, quantity of

conducting debriefing after simulation-based activities in their courses, and preference to participate in an individual interview or a focus group for this research study.

Individual interviews and focus groups. After all informed consents were read and an e-mail was returned with the "I consent" phrase, I assigned numbers to the participants. I reviewed their online questionnaire and all participants selected *either*, for either individual interview or focus group, or *individual* for individual interviews. Based on the challenges in coordinating nationwide focus groups over the winter break from the university, I was only able to conduct 12 individual virtual interviews and no virtual focus groups. One week before the scheduled virtual interviews, I sent an e-mail with the semistructured interview questions to each participant. I used Skype because of the geographical locations of the four campuses and the faculty's familiarity of this platform for their weekly work-related duties. Using virtual interviews helped me explore alternative viewpoints and relevant vantage points held by participants from different campus locations (see Rubin & Rubin, 2012). Because online interviews include the risk of missing nonverbal communication, decreased attention, and less engagement from the participants (Ravitch & Carl, 2012), I conducted live synchronized interviews.

Memos and journaling. During each virtual interview, I took memo notes regarding the participants answers. Immediately after each interview, I reflexively journaled while thoughts and impressions were fresh in my mind. The use of self-reflective journals is a bias reducing strategy where researchers can review their notes to become aware of potential assumptions, motives, and less conscious beliefs they hold (Patton, 2015).

The use of multiple instruments (see Table 1) can facilitate capturing rich, thick data to help answer the research questions. The e-mailed questionnaire determined eligible participants. The virtual interviews determined individual perspectives on learning how to debrief and experiences with debriefing after simulation-based activities. The virtual focus groups would have determined group perceptions and experiences with conducting debriefing sessions after simulation-based activities. The use of memos and reflexive journaling determined any bias during the data collection.

Table 1

Research Questions with Instrumentation

	Instrumentation				
Research Question	Questionnaire	Individual Interview	Focus Group	Reflexive Journaling	Memos
1. What are the perceptions of higher education health science faculty trained in effective debriefing strategies when they incorporate debriefing sessions after simulation-based activities?		X	X	X	X
2.What are the perceptions of higher education health science faculty during their experiential training on how to conduct effective debriefing sessions?		X	X	X	X
3. What do higher education health science faculty experience when putting their training of conducting debriefing sessions into practice?	X	X	X	X	X
4. How did the experiences of learning how to effectively debrief and initial trials of conducting debriefing sessions relate to faculty's adoption of incorporating debriefing sessions after simulation-based activities?	X	X	X	X	X

Researcher-Developed Instruments

I developed both the faculty questionnaire (see Appendix A) and interview questions and protocol (see Appendix B) that were used in this study. Both the questionnaire and interview questions were designed to answer the research questions and help fill the gap in health science academia research. The questions for the faculty questionnaire were created and modified from Beyer (2012) and Mariani and Doolen (2016), both of whom gave their permission to use this faculty questionnaire (see Appendix C). The survey questions from each of these studies were used with nursing students and members of a national nursing organization that in their original form would not be appropriate for this study with occupational therapy and physical therapy higher education faculty. For example, Mariani and Doolen asked professional opinions of their participants on gaps in nursing research or lack of topics at national conferences, and Beyer asked her student participants how they felt using human patient simulators. Therefore, I adapted the questions to be more aligned with this research study and more suited for my potential participants. For example, the questions in this faculty questionnaire pertained to participants' demographics, adoption of debriefing after simulation-based activities, and their experiential learning during training and experimental debriefing sessions.

The interview and focus group questions for this study were created and adapted from Krogh et al. (2016) and Paige et al. (2015). Permission was obtained from both corresponding authors (see Appendix C). Neither of the sets of interview questions would be appropriate in their original format for this study because they were designed for

surgeons, doctors and nurses. However, using Patton's (2015) guidance to create open-ended interview questions and Ravitch and Carl's (2016) key characteristics of qualitative interviews, I was created questions without leading the participant to answer one way or another. In addition, probing questions were created for participants to expand on their answers, clarifying ambiguities, and contribute more to the data collection (see Rubin & Rubin, 2012).

Content validity was established by matching the participants' behaviors and their descriptions of their perceptions and experiences of conducting debriefing sessions after simulation-based activities (Ravitch & Carl, 2016). Ravitch and Carl argued that how a researcher interprets the participants' behaviors during the interviews or focus groups and match those behaviors with what was exactly being said to analyze the data supports interpretive validity.

The use of the participant questionnaire and interview questions with protocol and follow-up interviews, if needed, should have established sufficient data collection to answer the research questions on faculty perceptions and experiences of using debriefing after simulation-based activities.

Procedures for Recruitment, Participation, and Data Collection

The data was collected primarily through audio recorded online interviews in the form of open-ended questions with probing questions. I conducted all online interviews over the course of two months using the Skype platform and audio recorded every session.

The research study procedure used is listed below:

1. All faculty employed by the university at the time of this study were sent an e-mail explaining the research study with an invitation to participate with the informed consent attached. The faculty were instructed to review the informed consent and reply "I consent" to the e-mail if they were interested in participating in the study.
2. If the faculty met the inclusion criteria and they were willing to volunteer, the potential participants were e-mailed a link to an online questionnaire asking about their demographics, their debriefing training. and their use of simulation-based activities and debriefing use in their courses. The last question asked for their preference for participating in an individual interview, a focus group or either for this study. According to Ravitch and Carl (2016), questionnaires are efficient ways to reach a large group of participants and the data is easily quantified.
3. I conducted the virtual individual Skype for Business online synchronized interviews with 12 participants. Conducting interviews provided rich, detailed descriptions of the participants' perspectives and helped the interviewer understand the participants' experiences and process (Ravitch & Carl, 2016).
4. I sent each participant a member-checking e-mail with my transcription of the questions asked with their comments during the interviews to check for accuracy and their understanding of the analysis.
5. Each participant received a thank you card with a ten-dollar gift card for participating in this research study.

Data Analysis Plan

Recording of online interviews was the primary source of data collection for this study. As a novice qualitative researcher, I used the researcher-created interview protocol for conducting the online interviews with individualized member checks of the transcribed sessions. The recorded interviews were transcribed precisely and transposed into text files. Descriptive analysis was used to describe the participants' experiences. In addition, member checks occurred with each transcription to ensure accuracy in the content.

Connection of data to research question. Ravitch and Carl (2016) depicted the conceptual framework as being dynamic, non-linear and continually changing, adapting and being modified based on the person or groups experiences. Due to the continual nature of change, Denzin and Lincoln (2013) explained the importance of using many methods of information gathering, such as surveys, interviews, case study, texts, and group interactions. The goal here was to explore the different methods of data collection and assess each one with scrutiny to find underlying themes and patterns in order to gain a clearer understanding of this research problem to help answer the identified research questions (Denzin & Lincoln, 2013).

Type of and procedure for coding. Coding, in qualitative research, assists to organize the data into chunks or manageable units (Ravitch & Carl, 2016). Rubin and Rubin (2012) stated that codes can be independent of each other, such as separate topics, or they can relate to each other, such as pieces of a topic, depending on the project. Two key aspects of coding are keeping the context or meaning given by the participant and

coding using the appropriate qualitative approach and conceptual framework (Rubin & Rubin, 2012). For this study, I coded following the guidelines of the basic qualitative research approach, Rogers's (2003) theory of diffusion, and Kolb's (1984) experiential learning theory. Once I was satisfied with the first cycle of codes of common words or phrases, I used the same common words or phrases to conduct the second cycle of coding with the intent for the codes to become more refined and placed into categories that may progress to actively constructing themes that were central to this study's research questions (Ravitch & Carl, 2016; Saldaña, 2016).

Data were analyzed by hand and categorized to facilitate analysis. I investigated software packages to store and code participant responses. One such software was the computer-assisted qualitative data analysis software (CAQDAS) program ATLAS.ti which color coordinates, organizes, reconfigures and stores the data (Saldaña, 2016). In addition, this software program allows for coding across categories with colorful, visual representations. However, I chose to hand transcribe and code the data because I wanted to listen to each interview to capture meaningful data that could be missed by a software program (Saldaña, 2016).

The data that emerged as discrepant and uniquely different from typical participant responses were used for contrast and discussion. The discrepant data was labeled, identified, and checked against my researcher bias. As bias exists in all research, my research bias was revealed in order to achieve validity with this study (Ravitch & Carl, 2016).

Issues of Trustworthiness

Qualitative research continues to be scrutinized by quantitative positivists; therefore, to ensure rigor, qualitative researchers can include four specific criteria to promote trustworthiness (Shenton, 2004). To demonstrate how I maintained credibility and trustworthiness for this study, I have organized each section by the four criteria that are unique to qualitative research. Ravitch and Carl (2016) and Shenton (2004) listed the four criteria as credibility, transferability, dependability, and confirmability. This section concludes with the ethical procedures I plan to follow for the treatment of the participants.

Credibility

For qualitative data analysis, the first step is preparing and organizing the data in such a way that it is easier to reduce the data from codes to categories to potential themes (Ravitch and Carl, 2016). Using the participants rich descriptions of their perceptions and experiences of debriefing after simulation-based activities, I explored their data using triangulation, member checks, saturation, and reflexivity to ensure internal validity (Ravitch & Carl, 2016).

In this research study, I used triangulation of the virtual individual interview data. The use of memo notes during all interviews with reflexive journaling immediately afterward also was used to develop credibility. Using the triangulation method of analyzing the various data, I had a better appreciation of the phenomena of why the participants were finding meaning or disinterest in debriefing after simulation-based activities. (Ravitch & Carl, 2016). After I transcribed each interview, member checking

was done with each participant to ensure the transcription and content was accurate with what they had said or meant to say during the interview.

For my qualitative research, I wanted to paint a clear picture of the phenomenon that I was researching for internal validity. Specifically, I used purposive sampling with 12 participants to reach saturation and gain adequate understanding of their meanings (Shenton, 2004).

Transferability

For transferability, or external validity, I was bound to the context and described the participants statements using rich, thick descriptions of the data and I did not generalize their statements (Ravitch & Carl, 2016). In addition, I used faculty from all campuses of the university for diversity and variation of participant selection. If I had discrepant descriptions, I identified and described them as well to deepen the understanding of the overall data.

Dependability

Dependability addresses the reliability of a qualitative study. I provided detailed steps on how my research was conducted so future researchers can possibly use my methods. All recordings were transcribed with detailed records of when the data collection occurred combined with any field notes written. I used audit trails so my research can be traced systematically for my decisions and procedures. I used a central database that was secure for storing and managing the data. I also included diagrams with a data-oriented approach when appropriate (Shenton, 2004). In addition, I acknowledged reflexivity and used triangulation to reduce my research bias (Ravitch & Carl, 2016;

Shenton, 2004).

Confirmability

Confirmability is the objectivity for qualitative research to be valid. My goal for confirmability was that I would be transparent with my reflexivity to include my bias, my positionality, and my subjectivities to the research topic as it was of vital importance for internal validity in each stage of this research process (Ravitch & Carl, 2016). For example, my assumptions had me believing that many health science faculty were hesitant in utilizing simulation-based activities and debriefing strategies because of the new learning requirements of themselves or they felt that this teaching delivery was not necessary in their courses. I was biased by expansively reading the literature to a point of saturation and gaining knowledge on the various styles of debriefing. This knowledge had influenced me on how I am designing my research study and process. I found myself curious to learn about possible underlying themes as the health science faculty were transitioning to new, possibly uncomfortable teaching delivery, such as conducting debriefing sessions after simulation-based activities, as opposed to using experienced, familiar lecture-style methods for teaching delivery. I also kept a personal journal where I frequently took notes on my feelings, thoughts, or bias that emerged during data collection (Patton, 2015).

Ethical Procedures

Before collecting any data for this research study, I obtained Institutional Review Board approval from Walden University and The University of St. Augustine for Health

Sciences. All participants received a consent form and they were informed of their rights. The copy of the consent form had the scope of this study and my contact information.

All data from the online interviews were audio recorded then transcribed. To protect confidentiality, all participants received a number as their unique identifier and no names were used. The transcriptions were e-mailed to the participants to check for clarity and accuracy. The recordings were locked in a filing cabinet in a locked office in a locked building. Skype interviews that were electronically recorded were stored on a personal work-only computer that required a protected logon password to open. The personal work computer was protected in a locked cabinet, in a locked office, in a locked building. No one but I had access to the data at any time. Reflexive journaling was documented in one notebook. Data will be saved for five years as required by university policy. After the expired time, the audio tapes will be destroyed. The digital data was downloaded to a flash drive, deleted from the work computer, and the flash drive will be destroyed. The interview scripts were included (see Appendix B).

Summary

This chapter explained the research design and rationale along with the role of the researcher used in this inquiry. The purpose of this qualitative study was to explore the perceptions and experiences of higher education health science faculty who were conducting debriefing sessions after simulation-based activities. The study was conducted with occupational therapy and physical therapy faculty who specified on a university-wide distributed online questionnaire to have received debriefing training and have used debriefing strategies after simulation-based activities at least once in their courses. The

selective purposeful sampling of participants was placed into semi-structured online interviews. The data was reviewed to interpret the results of the study analyzing context behaviors and comments to look for patterns. Triangulation and member checking were used to ensure validity. In Chapter 4, the study findings after data collection and analysis are presented.

Chapter 4: Results

Introduction

The purpose of this qualitative study was to explore the perceptions and experiences of higher education health science faculty during and after their adoption of debriefing following simulation-based activities. I used a basic qualitative approach method of inquiry using semistructured questions during virtual interviews with 12 faculty members from one national university consisting of four separate campuses. The research questions that guided this study were:

Research Question 1: What are the perceptions of higher education health science faculty trained in effective debriefing strategies when they incorporate debriefing sessions after simulation-based activities?

Research Question 2: What are the perceptions of higher education health science faculty during their experiential training on how to conduct effective debriefing sessions?

Research Question 3: What do higher education health science faculty experience when putting their training of conducting debriefing sessions into practice?

Research Question 4: How did the experiences of learning how to effectively debrief and initial trials of conducting debriefing sessions relate to faculty's adoption of incorporating debriefing sessions after simulation-based activities?

In this chapter the research setting, the participant demographics and characteristics, and the data collection and data analysis process are described. In addition, I present the evidence of trustworthiness including credibility, transferability, dependability, and confirmability. The Results section includes each research question

and presentation of the data gathered in answering each question. This chapter concludes with the summary of findings.

Setting

Participant recruitment came from purposeful sampling without regard to gender, teaching experience, or professional experiences. Higher education health science faculty who had received training on debriefing after simulation-based activities and who had conducted at least one debriefing session in their courses were selected for this study. I scheduled around the participants' different time zones and personal time away from their work hours to conduct their interviews. The participants lived in three different time zones, which required me to be flexible in scheduling the virtual interviews. When conducting the Skype interviews, I asked the same semistructured questions to each participant, and I was in my work office or home office where I could not be overheard. The participants either called in with their phone or logged in on their computers. I recorded the audio of all interviews and saved the recordings to a designated thumb drive.

Demographics

All research participants were currently employed faculty at the university. Initially there were 14 study participants who volunteered to participate in this research study; however, two participants were unable to partake in the virtual interview after completing the online questionnaire for personal obligations leaving a total of 12 study participants. There were 10 females and two male faculty members. Six faculty taught in the occupational therapy department, and six faculty taught in the physical therapy department. The study participants had varying levels of teaching experience ranging

from 2 years to 25 years of experience. Although the university has four campuses, the faculty from only three responded. Therefore, only the Florida, Texas, and California faculty were represented in this study. Table 2 depicts the demographics of the participants.

Table 2

Participant Demographics

Participant	Sex	Teaching Profession	Years of Teaching Experience	Campus Location
P1	Female	OT	6-10	Florida
P2	Female	OT	0-5	Florida
P3	Female	PT	16+	California
P4	Male	PT	6-10	California
P5	Female	PT	0-5	Florida
P6	Female	OT	0-5	California
P7	Female	OT	0-5	Florida
P8	Female	OT	6-10	Florida
P9	Female	OT	0-5	Texas
P10	Male	PT	11-15	California
P11	Female	PT	0-5	California
P12	Female	PT	6-10	California

Note. P = Participant, OT = Occupational Therapy, PT = Physical Therapy

Data Collection

This qualitative study consisted of 12 virtual interviews from higher education health science faculty employed at the same national university but from one of three campuses. The participants were recruited by receiving a university-wide e-mail seeking volunteer participants with the outline of the research study and inclusion criteria. The informed consent was attached to the e-mail. If the potential participants were interested and met inclusion criteria, they were instructed to read the informed consent and reply "I

consent" to the e-mail. The participants were then e-mailed a link to an online survey. After completion of the survey, the participants were e-mailed the list of interview questions and their virtual interview was scheduled.

All participants were asked the same list of semistructured, open-ended questions created to help answer the research questions. Prior to any data collection, participants were informed that the interview would be audiotaped with note taking during the interview for transcription purposes. Participants were informed that they could withdraw from the study at will in the initial university-wide e-mail, on the informed consent, and prior to the interview.

Initially, I had hoped for 8-12 individual interviews and one to two focus groups to occur; however, due to the winter break from the regular university school year and the inability to coordinate participants across three different time zones, I was only able to obtain 12 individual interviews and no focus groups. Each interview lasted approximately 30 to 45 minutes. The interview process was uneventful for each person, except one participant had to disconnect and log back on during the interview due to a winter storm in her area.

Data were collected using audio recordings and memo notes during the interviews. Reflexive journaling occurred immediately after each interview. All participants were assigned a number with their names removed. All data collected were stored on a thumb drive or folder that were stored in a safe place in my home office and work office to maintain confidentiality of the participants.

Data Analysis

I collected all data, and I transcribed all interviews into documents. I transcribed the audiorecorded interviews and relistened while I reread the transcriptions from the participants' responses three times for accuracy and to comprehend a deeper picture of their statements. I chose not to use a transcribing computer program because I wanted to capture the deeper meanings and select what was useful as I was transcribing, and computer programs count word frequency but sometimes miss meaning (Rubin & Rubin, 2012, p. 192). In addition, all transcriptions were e-mailed to the faculty for member checking and accuracy in their statements. All interview responses were organized under the corresponding research questions. I hand coded the data using word frequency, text frequency, and text search during the coding process. Next, I completed a second cycle of coding to narrow the categories and permit the themes to emerge (see Saldana, 2016). This process allowed me to stay organized, capture the rich meaning of the data, and appreciate themes as they emerged. Table 3 categorizes the themes identified for each research question. Word choice and phrase similarities uncovered the underlying themes.

Table 3

Themes Found in Research Questions

Research Questions	Emerging Themes
RQ1: What are the perceptions of higher education health science faculty trained in effective debriefing strategies when they incorporate debriefing sessions after simulation-based activities?	1. Valuable 2. Immersive experience 3. Self-reflections increase learning and performance
RQ2: What are the perceptions of higher education health science faculty during their experiential training on how to conduct effective debriefing sessions?	1. Critical/surprised of lack of direct instruction 2. Create safe space 3. Deliberate, open-ended questions
RQ3: What do higher education health science faculty experience when putting their training of conducting debriefing sessions into practice?	1. Nervous 2. Hard not to teach or jump in to fix 3. Awkward silence
RQ4: How did the experiences of learning how to effectively debrief and initial trials of conducting debriefing sessions relate to faculty's adoption of incorporating debriefing sessions after simulation-based activities?	1. Facilitate and guide without teaching 2. Student self-reflections 3. Trying different debriefing techniques

When answering the first interview question on their recollection of their training on how to effectively debrief, the participants frequently commented their concerns for this innovative teaching delivery using words and word phrases such as "never going to work," "not to teach but facilitate," "going to be a challenge," and "surprised by how little feedback we should give." In addition, the participants described the new teaching strategies as "a different mindset," "facilitate," "resist the urge to teach," "use open-ended questions," and "make a safe space." The overall themes that emerged from the first interview questions that helped answer Research Question 2 were of critique and concern for this teaching delivery for health science students. In addition, the participants

were surprised on how technical feedback and instruction was replaced with open-ended questions and the need for a psychologically safe learning space.

The next few interview questions pertained to early experiences with conducting debriefing sessions in courses to help answer Research Question 3. The frequent word choices such as "nerve-wracking," "anxious," "rough," and "hard not to jump in and teach" indicated uncomfortableness and uncertainty with trialing debriefing techniques. In addition, after the participants asked open-ended questions to their students, many of shared their awareness of an "awkward silence" in the room. Many alluded to the first few debriefing sessions as a "learning curve" in the sense that required additional time and practice with the debriefing process. Rogers (2003) described the learning curve to have expected difficulty with understanding and using innovation as typical characteristics of complexity. Despite the early frustrations, the participants recognized the "value of the facilitator" for effective debriefing. After these first interview questions, I noted in my memos during the interviews and in reflexive journaling immediately after the interviews that these faculty participants shared "similar training" and "similar uncomfortable experiences with trying debriefing" on all campuses.

All 12 participants indicated on the faculty survey that they adopted debriefing after simulation-based activities in their courses; therefore, the next interview questions focused on their experimentation with debriefing. Frequent word choices were "cheat sheet of phrases," "wheels turning in the students' minds," "different ways to get them to talk," and "guiding it but the students are the ones who are really talking."

The sequence of events during the debriefing sessions was another category that arose from the participants' debriefing experimentation. Some participants went into detail on the exact order of their debriefing session: "I start with the reactions and feelings to create that safe space," "I ask what everybody thought first," or "I start with initial prompts of what happened." Then, the participants shared that they used their learned open-ended questions such as "what happened in the simulation" and "what would you do differently next time," to "encourage the self-reflection in the students." In my reflexive journal, I noted that the process within the debriefing sessions across faculty appeared similar despite the participant or the location of the campus.

Additional areas of experimentation were the environments of the debriefing sessions and arrangement of the students. Participants shared how they trialed different room locations for debriefing, such as different rooms, to debrief. In addition, the participants shared their various arrangements of the student positions during the debriefing, such as seated in one giant circle, standing in semi-circles, and layers of students in rows and semi-circles with students both standing and seated in the same session. My memo and reflexive journaling notes after this grouping of questions revealed possible faculty development needs. For example, I wrote, "faculty could benefit from advanced debriefing training." According to Decker et al. (2013), best practice guidelines for debriefing emphasis that all the participants from the simulation to be seated or standing in one circle next to each other with no one seated or standing behind another.

The last two interview questions regarded how the use of debriefing supported their course objectives. The faculty participants used words and phrases such as "invaluable," "immersive experience," "supports objectives," "reinforces student knowledge," and "builds students confidence." These statements supported the use of debriefing after simulation-based activities. The participants also frequently commented on the students' "opportunity to self-reflect," which influenced their "level of performance."

Based on the collection of codes and categories, the emerging themes from this study indicated that participants were initially critical and reluctant during debriefing training, and they experienced anxiety with nervousness when conducting their first debriefing sessions. However, the participants continued to use and experiment with debriefing strategies in their courses. Overall, the participants agreed that the use of debriefing after simulation-based activities in their courses successfully met their course objectives and serendipitously increased student learning and performance.

Evidence of Trustworthiness

The primary threat to this study was its location, as it was conducted at the same university where I was employed. Based on the recommendation to acknowledge and clarify any biases or predispositions (Patton, 2015), this study was conducted virtually with faculty who are employed from one of the four campuses that make up the national university where I was employed. Although I have no supervisory position or relationship with any of the participants, I was aware that information shared through the interview process could have been affected. To address this threat, the consent form stated, and I

upheld, that all information was kept confidential and physically protected by passcode. In addition, I did not select faculty who I was teaching with at the time of this study.

Credibility

To ensure credibility for this study, I explored the data collected from the interviews, memo note taking, and the reflexive journaling to explore the perceptions and experiences of health science faculty and their adoption of using debriefing after simulation-based activities. To increase validity for this study, triangulation and member checking were used, which allowed for consistency of the data (Patton, 2015). Audio recordings of the virtual interviews with detailed transcriptions and document checking to verify the statements were used for triangulation of the data. In addition, by transcribing the data and comparing the information with the memo notes and reflexive journaling, consistency of data was addressed.

Transferability

For transferability, I stayed bound to the context and shared the rich, thick descriptions from the participants' statements that were captured from the interviews. The research steps for recruitment, data collection, data analysis, and reporting have been well documented and described to promote replication of this study for future researchers.

Dependability

For dependability, detailed records of how and when data was collected, managed, and stored were kept for easy duplication of this study. The same script of semistructured questions was used with each participant with results reported in detail for consistency.

Confirmability

These research findings are supported by data collected during the interview process. I took memo notes and reflexively journaled immediately following each interview. As the interview used open-ended questions and I transcribed their exact words verbatim without summarizing, I reduced the risk of bias throughout the research process. I also asked for clarification during the interviews and I used member-checking to ensure the participants agreed with the accuracy of the transcriptions. In addition, I took margin notes during the transcription and coding processes to increase confirmability.

Results

The research study results were organized by four research questions. The first research question focused on the overall perceptions of the health science faculty on their use of debriefing after simulation-based activities. The second research question inquired about perceptions of their training on how to effectively debrief. The third research question asked about their first experience using debriefing in their courses. The final research question explored the adoption and experimentation of utilizing debriefing after simulation-based activities in their courses. Data emerged from virtual interviews with each participant, the memo notes and reflexive journaling were examined to find relationships among the data sources and development of themes. The following section is organized by research question and addresses each with supporting data using quotes from transcriptions and documents.

Research Question 1

The first research question was "What are the perceptions of higher education health science faculty trained in effective debriefing strategies when they incorporate debriefing sessions after simulation-based activities?" All 12 participants had similar positive responses and meanings on the use of debriefing after simulation-based activities in their courses. The identified themes that emerged from the interviews for Research Question 1 are that debriefing is a valuable, immersive experience and student self-reflections increase learning and performance.

Valuable, immersive experience. Among the participants, a common agreement was that the use of debriefing after simulation-based activities was a valuable, immersive experience that supported the learning objectives of their courses. Participant 9 explained, "Debriefing is probably the most effective way for me to ensure the students are meeting the objectives and more importantly are able to effectively utilize their skills as clinicians with patients."

Participant 6 similarly described debriefing:

> [Students] have to sit and process what they…did, that is when they are really growing. They have to in their minds problem-solve right there and find a way to make it work. And it is helpful in the sim sessions because the instructors are there, the other students are there, it is never really a one on one, because of the multiple people there is kind of comforting for the students.

All the research participants expressed the value of debriefing as a cumulative strategy of collectively analyzing, applying and synthesizing a simulated therapy session

to provide a well-rounded opportunity for the students to get a feel of a real treatment session. Participant 5 described the value of this immersive experience:

> putting the whole picture together is what I really find, those higher-level learning objectives of multi-tasking and combining numerous skills in the patient care communication. I am finding using the debriefing and simulation for those skills, like teaching the family members, all the other stuff that goes with therapy that is not mobilizing the joints, it's kind of nice.

Participant 2 supported this value and added that debriefing "absolutely ties it together. That they understand why we do what we do . . . and I really feel for them that it connects all the dots."

Self-reflections increase learning and performance. Each participant in their unique way praised the unexpected learning and performance from the student's self-reflections during debriefing that was evident in subsequent simulations. Participant 7 advised "we [faculty] have to grasp that it is in reflection that learning takes place."

Participant 11 explained:

> it is really important to not only see them doing their hands-on techniques but how do they utilize this information to bring them through the patient care management model so for me that ability for them to self-reflect and take in all of that information and figure out how to use it or how that is going to drive their treatment or interventions is huge for the class where I am utilizing simulation right now.

Participant 12 similarly found the benefits of self-reflection during debriefing:

> It gives the students a moment to take a breath and actually think about what happened, think about what they were able to do at that moment in time, maybe think back to what preparation they did leading up to that point, maybe what they would do differently, think about if this is a situation, would you feel prepared, I think it also gives a chance for the students to understand why they were put through that. What role that played in the bigger picture.

Although very critical of the teaching methodologies used in simulation and debriefing initially, Participant 3 shared their overall positive perception of debriefing:

> I have been actually quite pleased with the students embracing both the experience and I'm pleasantly surprised about the carryover that I couldn't have a vision of how students learn motor skills without doing the motor skills but what the sim is actually doing is that they learn the motor skills first [in a laboratory class] and . . . then learn . . . from watching another person perform what you have learned and then reflect on that has resulted in higher levels of performance.

All the participants' perceptions were overwhelmingly positive in support of debriefing after simulation-based activities in their courses, and many participants shared their experiences of students' lasting abilities beyond the walls of the classroom. Three participants were fieldwork coordinators and one participant was a clinical instructor as well. These four participants provided positive reviews in student performances in the clinic long after the debriefing sessions. As Participant 6 commented on the students in the clinic:

> Because I am also a clinical instructor, I see on the other end when students who have had the simulation experiences come to fieldwork they are more successful and it is because they are not scared and they are not timid, and they have had the exposure and they have had the opportunity to demonstrate these skills in a safe environment with other students and other instructors and teaching assistance. And so, it really does help. It is so valuable.

Question 1: Summary and results. The first research question addressed the overall perceptions of health science educators and their incorporation of using debriefing after simulation-based activities. The themes that emerged were that debriefing was a valuable, immersive experience and student self-reflections during debriefing appeared to increase their overall concept learning and skill performances in future simulations.

Research Question 2

The second research question was "What are the perceptions of higher education health science faculty during their experiential training on how to conduct effective debriefing sessions?" The data analyzed to help answer Research Question 2 focused on the training sessions and what resonated the most from the training with each participant. The identified themes that emerged from the interviews for Research Question 2 were surprise/criticality of the teaching method, a need to create safe space for the students, and deliberate, open-ended questions. Responses from the participants shed some light on the novelty of using debriefing after simulation-based activities and shift in teaching model that each participant had to experience for training.

Surprise/criticality of teaching. Based on the interview responses, the most significant challenge for the participants to overcome was the teaching methodology. As traditional education paradigms position faculty standing and lecturing from a podium in front of the seated rows of students, debriefing involves positioning all participants into a giant circle with faculty guiding the conversation and students doing most of the talking (Cheng, et al., 2016). Cheng et al., (2016) further described debriefers as needing to transition from "Sage on the Stage to Guide on the Side" (p.33). Participant 4 shared their realization:

> The debriefing process was a very different mindset and a different assessment than what we were used to using in rehab education and practical testing. So, it took me a while to see the perspective and the different type of value and assessment that is taken from the simulation process.

Most of the participants had never heard of debriefing after simulation-based activities prior to their two-day training sessions and they reported their hesitation and critique of using this teaching method in their courses. Participant 5 recalled:

> I had never heard of it before and I had no prior training on it. I remember thinking: This is never going to work. What are they talking about? And so, I was pretty critical at the beginning. I remember thinking students are going to love being in it [simulation lab]. I could only get a few students to actually be in it [a simulated event]. How in the world are all these going to work?

At least seven participants transparently stated their concern of not providing feedback to students during the simulation or debriefing, not interjecting to correct items

that were being done incorrectly or improve technical skills, and not utilizing teachable moments. Participant 3 described the concern:

> When we got to the debriefing, I was troubled that the way it was presented that the comments needed to only be positive and I felt that we were missing a learning opportunity. I was concerned about with the first sim training is that when you are talking about blank slates giving feedback to other blank slates, it's an exercise of the blind leading the blind. And when you don't know what you should know, everything looks good.

Even though most of the participants were highly critical and skeptical during their early training on how to effectively debrief, all 12 eventually accepted debriefing as an effectual way to educate students. Participant 5 described her transitioning thoughts of beginning to accept the teaching methodology the best by stating, "Then I remember the lady that put on the training. And she was actually using the debriefing techniques on us. And I realized that oh, she is just facilitating the conversation. I remember thinking: this is going well."

Based on the responses, despite the initial critical approach, it was apparent that all 12 participants appreciated the value of debriefing after simulation-based activities from the training. As Participant 1 stated what resonated the most from the training was, "I am not teaching but facilitating the students sharing their learning experiences."

Create safe space. Half of the participants commented on the need to create a safe space for students to participate in simulations and share their experiences during debriefing. According to best practice standards for debriefing, creating a psychologically

safe space is crucial for student engagement and learning (Hall & Tori, 2017; Rojas et al., 2017; Wilson & Wittmann-Price, 2014). Several participants responded that they appreciate learning about the importance of creating a venue where students could make mistakes safely especially practicing in complex hospital environments such as the intensive care unit or subacute unit. When responding to the interview questions, Participant 9 recalled:

> What resonated most with me was when we discussed the principles of psychological safety not only for the student but also for the actors and how utilization of simulation really is our best opportunity at preparing students for their future practice. And how most of the learning takes place during debriefing not during the actual scenario.

Many participants shared how they learned to create a safe space both with the physical environment and the psychological environment. For example, ten of the 12 participants responded with having the debriefing location in a different room than where the simulation occurred. Initially evident by Decker et al. (2013) and reconfirmed by Hall and Tori (2017), students must feel safe to debriefing adequately as the same room where the simulation took place could cause significant feelings of anxiety. Two participants noted on the importance of the debriefer to maintain a neutral presence using neutral body language, neutral facial expressions, and neutral tone of voice to promote conversation among the students which complements best practice guidelines (Dufrene & Young, 2014; Hall & Tori, 2017; Rojas et al., 2017; Wilson & Wittmann-Price, 2014).

Ensuring the students understood the guidelines for the debriefing process resonated with Participant 1:

> [Creating] a safe environment and making sure they felt comfortable sharing and discussing and making sure that they were respectful of the people in the simulation experience itself. Making sure we started with those positives and that when we talked about things that could have been done better that we framed it that way.

Participant 8 responded in detail sharing the importance of preparing students for clinical work:

> We wanted to create a space where they really had to think on their feet and critically analyze what they were doing because they were getting ready to go into a clinical field where they were going to have people watching them and they were all very uncomfortable with that. And where they were going to hear feedback that maybe wasn't all positive and they needed to start getting comfortable with analyzing themselves and being able to hear feedback that was both positive and critical.

Deliberate, open-ended questions. The use of deliberate, open-ended questions during the debriefing sessions was also mentioned as a notable element from the debriefing training. As the faculty in training were shifting from delivering information to students to facilitating discovery in students, the use of a list of questions or a script was conveyed to the participants in their training. According to Participant 6, "how you ask

questions makes a difference." In addition, Participant 6 shared tips from her training session:

> She gave me hints on how to facilitate debriefing sessions and how to ask certain questions that would facilitate critical thinking. And getting the students to be able to reflect and break down what they have learned from the sessions, the simulations, and that's about it. What she was telling me is that you have to ask open-ended questions and you have to also be able to make sure you pause between asking those questions. Kind of look around the room.

Participant 7 answered that from the training, she understood the goal of asking deliberate, open-ended questions is for "trying to draw information from those who participated in the simulation and facilitate the discovery and discussion." Participant 4 realized from the training session that if the debriefer used a list of deliberate, open-ended questions as a guide during the debriefing, then "the debriefing process kind of evolves as you are doing it. And that was most striking to me."

Question 2: Summary and results. The second research question addressed the perceptions of health science faculty and their perceptions of their training on how to effectively debrief. The 12 participants gained ample information from their averaged 2-day training sessions on debriefing with the realization that they would have to shift their teaching delivery to embrace this teaching paradigm. The themes that emerged from this question were surprise of teaching methodology and critical of debriefing, creating a safe space, and deliberate, open-ended questions.

Research Question 3

The third research question was "What do higher education health science faculty experience when putting their training of conducting debriefing sessions into practice?" The participants reported that they led their first debriefing session approximately 2-3 months after their training sessions. Even though most of them used a script or a list of questions or phrases to use in the debriefing sessions, the participants shared common descripted feeling such as feeling nervous, challenging, and at times uncomfortable. The identified themes that emerged from the interviews for Research Question 3 were nervous, hard not to teach or jump in, and the awkward silence.

Nervous. Nine of the 12 participants individually claimed that they were "nervous", or their first debriefing process was "nerve-wracking." Even though all participants completed simulation and debriefing training, many felt that they still were not fully prepared to conduct a successful debriefing session. Participant 5 admitted that:

> It was rough. I tried to mimic or model exactly what I saw in the training. And I had spoken with the co-lead of the course... And so, I saw her do it once or twice. I knew what I knew from the training, so I said, "Okay, I'm going to try this." I really underestimated the role and the value of the facilitator.

Participant 10 acknowledged similar feelings:

> I was a little bit nervous about it. At the very beginning when I started off and basically throughout the whole thing, I just wasn't sure if I was doing it correctly. I would have liked for someone to have been there with me to kind of give me feedback.

Participant 8 agreed by admitting, "I was fairly nervous as an instructor because it was a new technique and it was a different way of approaching talking to the class." Likewise, Participant 6 reported their emotions:

> If I had to describe what it felt like it was kind of nerve-wracking. It was definitely my just-right challenge because I had just enough anxiety about making sure that everybody was engaged, and I really tried to as much as I could to get feedback from all types of students not just the star students who always have comments.

Hard not to teach or jump in. All of the participants revealed how hard it was to shift to this novel teaching delivery. As Participant 8 explained, "because you want to teach, and I had to have this repeated mantra in my mind to stop teaching during the debriefing and to just listen." Participant 5 explained that they were "getting caught up in those teaching moments that you were trying to avoid like us dominating and teaching during that facilitation. That was a hard habit to kick for myself." The responses from Participant 11 supported Participant 5 by clarifying their biggest obstacle:

> It was really challenging and even to this day it still is challenging to not want to automatically give them that specific feedback like "oh you forgot to do this" so that was really hard for me those first few times. And I found that no matter how I worded the questions, or I directed the conversation it still came back to that conversation that "Oh Bobby forgot to do this and xyz" so that was a struggle for me to get out of that mindset.

Beyond having to resist the urge to teach during their first debriefing sessions, some of the participants shared other challenges. For example, Participant 8 acknowledged their new teaching skills:

> It was as much of an exercise for me to watch their body language, and their facial expressions, and to monitor what was going on so that I could see that if somebody was getting ready to open their mouth but somebody else jumped in. So, keep an eye on them because they want to say something and make sure you come back. You have to be very observant and so student focused.

In addition, Participant 4 share their shift in mindset:

> The challenge was to get out of the mindset of looking at it from a clinical performance practical mindset and check listing and critiquing that. I also found it challenging to get the students to see that perspective and also the faculty who were involved.

Awkward silence. Dufrene and Young (2014) recommended debriefing to occur immediately following the simulation-based activity and the length of the debriefing session be at least two times the length of the simulation. As the majority of these participants experienced in their first debriefing sessions, initially there is a recommended moment of silence. "At first it is always a little awkward because I don't need to jump right in and say something" explained Participant 8.

Typically, the faculty have that urge to fill the silence with lecturing as evident by their responses. However, as Participant 9 advised, "Embrace the silence, the awkward

silence that will happen with students." Participant 9 argued that allowing the silence "is a great learning tool that I believe is underutilized."

Question 3: Summary and results. The third research question addressed the experience of health science faculty when they conducted their first debriefing sessions. The first debriefing session had the participants feeling moments of unclarity and uncertainty with trialing this teaching paradigm. The themes that emerged from this question were nervousness, hard not to teach or jump in, and the awkward silence during the debriefing sessions.

Research Question 4

The fourth research question was "How did the experiences of learning how to effectively debrief and initial trials of conducting debriefing sessions relate to faculty's adoption of incorporating debriefing sessions after simulation-based activities?" Despite the unsettling feelings and themes uncovered from Research Question 3, all the participants overwhelmingly agreed upon the value and long-lasting benefits of utilizing debriefing after simulation-based activities. In addition, most research participants claimed they have experimented with different styles of debriefing. The identified themes that emerged from the interviews for Research Question 4 were facilitate and guide without teaching, student self-reflections, and trying different techniques and methods.

Facilitate/guide without teaching. All participants except one had transitioned to facilitating the conversation during debriefing sessions. Many of the participants responded in detail their current debriefing procedures with a focus on facilitating and guiding the discussion.

Participant 2 described how they now facilitate the conversation:

> I might ask a question and then they start to jump in and as one speaks, another one speaks, and I really feel that the students are leading it really, as far as they dominate [the conversation] with their answers and feedback. It's not me. I am initiating it, I am guiding it, but they are the ones who are really talking.

Participant 5 explained, "Now I am not just asking these ambiguous questions, but I do start to guide, without teaching, the conversation for the students. I am also getting to be a better conversationalist."

Student self-reflections. Based on the interviews, I found that the participants collectively agreed on the value of facilitating self-reflection in the students and this awareness was a key to their adoption of debriefing after simulation-based activities in their courses. Participant 7 found successful results from incorporating debriefing after simulation-based activities and stated, "Debriefing…is helping metacognitive thoughts on what happened there, what could have happened there…and what is it that you could have done differently?" In addition, Participant 7 argued the value of debriefing strategies:

> In the debriefing is where you see the wheels turning and clicking. You know that that reflection is working. And every student is hearing the same thing. It's not one student. They all have the opportunity to contribute and every student is hearing the same thing. You can see that critical thinking and problem-solving going on right there in that room. Faculty has to understand the importance of the reflection component and how that is the precursor to the learning.

Participant 6 agreed with similar word choices as Participant 7 "because I can see . . . that there are wheels turning in the student's minds and I have to find different ways to get them to say what their experience was."

Participant 11 passionately explained the benefit of self-reflection:

> So, for me that ability for them to self-reflect and take in all of that information and figure out how to use it or how that is going to drive their treatment or interventions is huge for the class where I am utilizing simulation right now.

Participant 12 supported Participant 11 that by providing time "to reflect on why they did it, what they learned from it, what they would do moving forward, I think it is a very valuable use of time.'

Participant 8 explained their experimentation with leading the debriefing sessions:

> The debriefing sessions now are very student driven and I let them take the conversation where they want to take it with a set of questions I know I want to ask to lead them back but I am not as concerned with getting a little off track in the debriefing and letting them go down a path of conversation that is really letting them analyze what has happened in the session.

Participant 11 shared their experimentation with debriefing:

> The more and more I am getting used to it, I am finding that my debriefings are getting longer and based on what I am reading that is where the students are learning and growing and self-reflecting and allowing them to participate. So, I am finding that my debriefs are almost double if not more than double of the simulation itself.

Trying different techniques. As all participants have included the use of debriefing after simulation-based activities in their course, they also started experimenting with new methods and techniques. Participant 6 reasoned that faculty have had the opportunity to build their "teaching toolkit" with this innovative teaching style. Some participants pursued additional debriefing training through classes and courses, others reviewed the literature to find different debriefing methods. Participant 2 shared "I think of my objectives much more. I have the objectives in my mind, not just what I want to get out of the actual simulation but from my debriefing." Participant 5 shared debriefing strategies:

> Honestly, I have a cheat sheet of phrases that will get the students to talk more because they don't always come naturally to me . . . also need to get out of my own head because I now understand that I have to listen to what is being told to me…and I have to respond to that before I'm thinking about how I am going to lead this next question. At the beginning I was really in to just following the script. And now I am able to free flow a little bit more.

Participant 11 responded that they are experimenting with different debriefing formats:

> Sometimes I'll open up with the person who was the lead or the therapist [in the simulation]. Sometimes I will open it up to the class. So, I am playing around with different ideas and strategies still currently and finding that I don't necessarily do the same thing every time.

However, a few of the participants continued to share the concern that technical skills were not addressed in their debriefing sessions. Therefore, Participant 1 arranged for lab classes after simulations and debriefings to practice technical skills that needed to be refined based on students' technical performances during the simulation. Another participant "will bring up some technical things" in the debriefing session and ensured the discussion explained proper technical procedures but not in "an accusatory manner towards the students" from the simulation.

Question 4: Summary and results. The fourth research question addressed the health science faculty's adoption and experimentation with debriefing. The themes that emerged from this question are facilitating and guiding without teaching, student reflections, and trying different debriefing techniques.

Discrepancies

From analyzing the data, the two main discrepancies between the faculty who all had similar training experiences were student environment during the debriefing sessions and length of time dedicated to simulation and debriefing sessions. The current best practice guidelines for conducting debriefing session recommends the group be seated in a circular fashion, with no rows (Sawyer, Eppich, Brett-Fleegler, Grant, & Chang, 2016). Although trained similarly, two participants continued using a lecture style format with an instructor standing and some students seated while others were standing in rows or semi-circles during their debriefing sessions. When asked about this student positioning, the faculty responded that it was "just easier" or "it is by happenstance" but based on this

interview and their continued feelings of "it not working as well as I thought" these participants both were planning on trying the circle format during their next opportunity.

Another notable discrepancy was the varying length of time students spent in simulations and debriefing sessions. Best practice guidelines recommend that debriefing sessions last twice as long as simulations to provide the opportunity for students to dig deeper in their self-reflections (Decker et al., 2013; Dufrene & Young, 2014). From the interview responses, on average, the length of the simulations were 15-20 minutes followed by a 30-40 minutes debriefing session indicating that they were following the recommended best practice guidelines. When asked for chosen time length in their courses, the majority of the participants alluded to time constraints and large class sizes of 30 or more students. One response was striking to me as their simulations were an hour to an hour and a half long in duration followed by a 20-30 minutes debriefing session. This participant stated that because the simulations are so long, they had to give the students a rest break after the simulations. When the students reconvened 30 minutes later for the debriefing session, and "so much time has passed," the students tended to forget the details of what had happened in the simulation. This participant also noted that the students were not as engaged in the debriefing sessions. This participant shared that when an open-ended question was asked in the delayed debriefing sessions, the students would reply with a single answer. Then, the participant revealed that she would "awkwardly wait until someone else raises their hand or I have to keep saying, "okay anyone else?" Or "okay what about this?" and I kind of feel like I have to start planting thoughts in their minds."

Summary

This chapter began with a description of the setting and demographics of this study. Data was collected through 12 individual interviews with higher education health science faculty. The evidence of trustworthiness revealed the threats to this study and how credibility, transferability, dependability, and confirmability were addressed. The detailed steps of analyzing the data with results and a summary of each research question was provided. The summarized answers to the first research question regarding participant perceptions on the use of debriefing after simulation-based activities were that debriefing was a valuable tool that provided an immersive experience which promoted student self-reflection, improved conceptual learning, and honed skill performances as noted in subsequent simulations and debriefing activities. The summarized answers to the second research question that addressed participants training on debriefing indicated that the 12 participants although critical and suspicious at first, recognized their need to shift their teaching delivery to embrace this teaching paradigm with the use of deliberate open-ended questions and creating safe learning spaces. The summarized answers to the third research question were that all faculty participants experienced moments of unclarity, uncertainty, and nervousness with trialing this teaching paradigm, difficulty resisting the urge to teach as they knew it, and the awkward silence that occurred after the participants asked open-ended questions during the debriefing sessions. Finally, the summarized answers to the fourth question regarding participant's experimentation and adoption with debriefing were positively and consistently supporting the inclusion of debriefing strategies in their teaching delivery to promote student self-reflection and improved skills

by guiding without teaching and using different debriefing styles to meet course objectives.

In addition, the two significant discrepancy of student arrangements and length of time allotted for the debriefing sessions was discussed in how these participants have adopted the use of debriefing after simulation-based activities. Implications of the findings and the purpose or this qualitative research study are organized within the conceptual framework in Chapter 5. Recommendations for future research and implication for social change are provided.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this qualitative study was to explore the experiences and perceptions of higher education health science faculty during and after their adoption of debriefing after simulation-based activities. The population of this research study was limited to one university that consists of four separate campuses in different parts of the United States. I asked participants to describe their perceptions, training, first trialing, and adoption with experimentation of using debriefing after simulation-based activities in their courses. The use of a qualitative study provided in-depth data for identifying themes regarding participants' experiences. My intent was to increase awareness of the process of using debriefing after simulation-based activities in higher education health science curriculum.

Twelve participants met the inclusion criteria and participated in virtual, semistructured interviews that addressed the four research questions:

Research Question 1: What are the perceptions of higher education health science faculty trained in effective debriefing strategies when they incorporate debriefing sessions after simulation-based activities?

Research Question 2: What are the perceptions of higher education health science faculty during their experiential training on how to conduct effective debriefing sessions?

Research Question 3: What do higher education health science faculty experience when putting their training of conducting debriefing sessions into practice?

Research Question 4: How did the experiences of learning how to effectively debrief and initial trials of conducting debriefing sessions relate to faculty's adoption of incorporating debriefing sessions after simulation-based activities?

The key findings from the results indicated that overall, the participants perceived debriefing after simulation-based activities as a valuable, immersive experience and the self-reflections increased student learning and performances. The faculty participants were initially critical of debriefing but appreciated learning about the use of open-ended questions and how to create a safe space for student learning. During the first time conducting debriefing after simulation-based activities, participants consistently experienced nervousness, difficulty not jumping into teaching as they knew it, and awkward silence among the students after they asked their newly learned open-ended questions. However, with practice, the faculty participants learned how to facilitate and guide the conversations without teaching. In addition, the participants explained that they began trying different debriefing techniques.

This chapter presents the interpretations of the findings focused on the results of the data from the interviews, memo notes, and reflexive journaling and how they were compared to the peer-reviewed literature in Chapter 2 with analysis and interpretation in the context of the conceptual framework. I also identify the limitations of the study and how I overcame the issues of trustworthiness. Recommendations are also provided for future research studies, and the chapter concludes with implications for positive social change and overall conclusion of this study.

Interpretation of the Findings

Rogers's (2003) theory of diffusion and Kolb's (1984) experiential learning theory guided this qualitative study on the inherent issues of adoption and experiential learning of health science faculty on debriefing after simulation-based activities. The data were analyzed and interpreted within each research question using the conceptual lens and compared to the literature review extending knowledge on higher education faculty use of debriefing after simulation-based activities in health science education. I used Rogers' theory to inform two of my research questions and guide the construction of this study and Kolb's theory to design two of my research questions and shape this research study.

Based on the responses to the interviews, the participants in my study indicated that they transitioned through Rogers's stages of the innovative-decision process as they were learning and experimenting with debriefing after simulation-based activities before they eventually adopted this innovation in their routine teaching delivery. Additionally, results related to Kolb's (1984) learning theory regarding how adults learn best through hands-on experience and through a continuous cycle. The health science faculty participants used concrete experience and reflective observation in their debriefing training sessions and abstract conceptualization when they were reflecting on their performance and learning experience. The last part of the learning cycle is active experimentation where the faculty participants reported experimenting with different debriefing methods in their courses. Although these stages need to be followed sequentially, the adult learner can enter and exit at any time in this process (Kolb, 1984).

Research Question 1

As Research Question 1 was focused on faculty's overall perception of using debriefing after simulation-based activities, the themes that emerged were the value of this immersive experience for the students and the use of student self-reflections during the debriefing process that positively influenced student learning and performance on subsequent simulations and practical testing. The research data indicated that all participants had adopted and successfully incorporated the use debriefing after simulation-based activities in at least one of their courses similar to the research-based practices in other health science fields such as nursing, medicine, and anesthesiology, thus helping fill the current research gap (Hall & Tori, 2017; Paige, et al., 2015; Reierson, et al., 2017; Sawyer, et al., 2016).

The participants of this study were respected health science faculty with years of experience in their teaching role at the time of this study. Transitioning through the innovation-decision process was a calculated progression that was at risk of rejection at each stage with each participant (Rogers, 2003). Rogers (2003) outlined this process and emphasized that final adoption is a combination of a sequence of choices and actions over time. After the training, experiences with conducting sessions, and experimenting with different methods, all the faculty participants adopted the innovation of debriefing after simulation-based activities as a teaching delivery in their courses.

Valuable, immersive experience. The common agreement among the participants was that debriefing after simulation-based activities was a valuable and immersive experience for the students to meet the course learning objectives. The

participants stated that to ensure the greatest probability of students meeting their course objectives, they would be creating more simulations and learning additional debriefing methods to improve on the immersive experience. Participant 3 supported the immersive experience by stating, "The courses have clinical competency as an objective . . . I think debriefing helps that . . . I have been actually quite pleased with the students embracing both the experience and I'm pleasantly surprised by the carryover." Another participant agreed and said, "The debrief process is probably one of the most effective ways to [meet course objectives] there is no other assessment that we do that would allow for those kinds of opportunities."

These results are supported by the literature review in Chapter 2. For example, Taibi and Kardong-Edgren discovered at least 1,670 nursing programs in 2014 that were incorporating immersive experiences for the nursing students. Since then, there has been more evidence supporting the use of debriefing after simulation-based activities (Kim et al., 2017; Johnston et al., 2017; Rojas et al., 2017). However, occupational therapy and physical therapy curricula have been slow to adopt this innovative teaching delivery.

Self-reflections increase learning and performance. From analyzing the data, the participants agreed that for the most part when students had an opportunity to self-reflect, their learning and technical skill performance improved in sequential simulations. The supported evidence of student reflection improving transfer of learning from classroom to clinic (Dreifuerst, 2009; Rudolph et al., 2008) and building knowledge and technical skills dates back a decade ago (Cantrell, 2008; Fanning & Gaba, 2007; Jeffries, 2005). More recent evidence has continued to support the use of self-reflections in the

debriefing process (e.g., Doherty-Restrepo et al., 2018; Gonzalez & Kardong-Edgren, 2017; Lavoie, Pepin, & Cossette, 2015; Sawyer et al., 2016).

Participant 4 maintained a focus on self-reflections during the debriefing sessions "so they can reflect from their perspective or their lens [for deeper learning]." Along those same lines, Participant 3 warned, "If you don't set up the structure for them to do that [self-reflect] then it [their reflection] is left to chance." Pierazzo, Akhtar-Danesh, Baxter, van Eijk, and Evers (2016) also found that implementation of debriefing after simulation-based activities was dependent on faculty attitudes and perceptions. Therefore, a successful transition from the knowledge stage through to the confirmation stage is crucial for successful adoption using the innovation-decision process (Rogers, 2003).

Participant responses, memo notes, reflexive journaling, and evidence from the peer-reviewed literature have helped answer the first research question regarding faculty perceptions of debriefing. All the participants held a positive stance evident by their adopted the innovation of using simulation and debriefing in their courses to meet course objectives. In addition, the participant responses indicated an appreciation of the value of debriefing to reinforce student learning and critical thinking skills that have successfully prepared the students for clinical work. Likewise, Chang et at. (2016) highlighted the importance of engaging students in self-assessments and self-reflections to promote independent, self-directed learning and ownership for their own lifelong learning.

Research Question 2

As Research Question 2 was focused on faculty's training and their experiential learning, I used Kolb's experiential learning theory— based on concrete experience and reflective observation of learning—to guide my coding and discovery of the emerging themes of the critique of this teaching style, the need to create a safe space, and the use of deliberate, open-ended questions. Kolb (1984) believed that experiential learning begins with active engagement derived from a concrete experience. Kolb's first two stages of concrete experience and reflective observation are relative to the participants' debriefing training as revealed in their responses to the interview questions. All participants received formal experiential training on how to debrief and most participants commented on the trainer. For example, Participant 4 commented:

> We got to experience the debriefing process by seeing a simulation and watching the whole the simulation process. The facilitator and presenter went through the debriefing and so we were exposed to the how to do the debriefing as it was presented. Later on, we got to develop our own scenarios and we got to do the debriefing ourselves.

During the faculty training on debriefing, Participant 7 realized that the presenter was "actually using the debriefing techniques on us. And I realized, oh, she is just facilitating the conversation."

The conceptual lens of Kolb (1984) was also evident in the peer-reviewed literature surrounding training for debriefing after simulation-based activities (Gardner, 2013; Nash & Harvey, 2017; Sawyer et al., 2016). For example, Hoover, Giambatista,

and Belkin (2012) argued that learners should observe prior to direct experience for performance improvement to occur. O'Regan et al. (2016) also claimed that even just direct observation with guidance can be as effective for learning.

Surprise/criticality of teaching. From the training sessions, many of the participants responded their surprise of debriefing tactics that did not include traditional direct teaching delivery. Participant 4 shared the struggle with "grasping the difference between simulation and how it is a very different assessment" and "the debriefing process was a very different mindset." Participant 5 supported Participant 4's comments and added, "I was pretty critical." Participant 11 also agreed with the prior participants and stated, "I was really surprised how little feedback we should be giving to students on either what they did wrong or what they need to improve on." Kolbe and Rudolph's (2018) study with 25 nursing and medical clinical faculty showed participants feeling "exhausted" and "nervous," though there was no mention of being skeptical or critical of debriefing strategies. Although comments of surprise and criticality of teaching came out of the interviews and data collection of this study, I could not find anything similar in the literature regarding initial skepticism or critique of debriefing as a teaching delivery. But understanding faculty's insights may be a critical link for ongoing use of debriefing in academia, as faculty attitudes can influence implementing simulation activities (Landeen et al., 2015).

Create safe space. The review of the literature (Carson & Harder, 2016; Neill & Wotton, 2011) and responses from the participants revealed that of most concern was creation of a safe space for students to share their experiences and self-reflections.

Participant 1 reflected on the training session and stated, "One of the points of debriefing is to allow a safe environment for mistakes to happen so people can learn from them." Participant 8 understood the debriefing instructor by stating, "they try keep things very calm and safe and make a safe space for you in that way but not to be afraid to ask questions that you don't typically think of asking." In addition, the training taught the participants that they had to adjust and rearrange their classroom dynamics to address the circular arrangement required for debriefing to be most effective for creating a safe space (Carson & Harder, 2016).

Deliberate, open-ended questions. The use of deliberate, open-ended questions during debriefing training resonated with several participants in this study. The skill of asking this style of questioning promoted self-reflection and self-assessment from a simulated experience. Debriefing is a skill that needs practice to become an effective facilitator of debriefing sessions (Sawyer et al., 2016). Participant 4 responded, "Debriefing is a skill and you have to do it regularly in order for you to a feel for it . . . like playing the piano, you only get better at it through practice." Unconscious of the Kolb comparison to concrete experience and abstract observation, another participant stated:

> I think practice is important, watching other people do it as well is another thing we should have faculty do so that they can learn and kind of learn strategies and also figure out what they would do differently in that situation. (Participant 7)

Based on Kolb's learning cycle, the participants from the debriefing training could benefit either from having an experience who prefer to practice what they are

learning or as a reflexive observer who prefer to watch and learn from co-workers (Kolb, 1984). Learners develop a preference for learning that reflects a tendency, not an absolute, and learning styles may change in different situations (Kolb, 1984). Nevertheless, as one participant said, "I think doing it was more powerful than just listening or watching" (Participant 3). The convergence of the data helped me answer the second research question and draw the conclusion that the participants had initial reluctance and hesitation on this teaching delivery; however, by the end of their training session, they experienced enough positive results to try using debriefing in their courses.

Research Question 3

As Research Question 3 was focused on faculty's first debriefing session, I also used Kolb's conceptual lens—the abstract conceptualization and active experimentation—to explain the emerging themes of being nervous, hard not to teach or jump in, and the awkward silence that occurs in debriefing sessions. Following the concrete experience and reflective observation, Kolb claimed that learners enter a phase of abstract conceptualization where they gain insight and make logical sense of the experience that they can draw from for future use. The final stage is active experimentation where the learners plan out and tries what they have learned (Kolb, 1984).

Nervous. Although the participants were faculty who were considered experts in their fields, the most of them commented on feelings of uncertainty and nervousness with two participants describing their first debriefing session as "nerve-wracking." As previously mentioned in this study and the literature, debriefing is a skill to be honed

through time and takes deliberate practice (Cockerhan, 2015; Decker et al., 2013; Paige et al., 2015; Reierson et al., 2017).

Hard not to teach or jump in. Another frequent comment from the research participants was their urge to teach or jump in the conversation to control it. Participant 2 admitted, "how hard it was for me not to jump in and tell them what they did wrong." Participant 11 had a similar experience:

> It was challenging to not want to automatically give them that specific feedback like "oh you forgot to do this" so that was really hard for me those first few times. And I found that no matter how I worded the questions, or I directed the conversation it still came back to that conversation that "Oh Bobby forgot to do this and xyz" so that was a struggle for me.

Krogh et al. (2016) found that through practice and experimentation, most debriefers became "comfortable with the uncomfortable" (p. 7).

Awkward silence. A unique part of debriefing training is to incorporate silence into the session, typically after a facilitator asks an open-ended question. It is in the silence where students are organizing their thoughts, analyzing their simulation, and formulating a response to the debriefer's question (Sawyer et al., 2016). Two research participants commented on the silence and one described it as "observing the wheels turning in the student's minds." Sawyer et al. (2016) emphasized the importance of silence and the need for debriefers to wait after asking questions to effectively use the silence in the debriefing process. Through experimenting and trialing the conduction of debriefing sessions, the participants conveyed becoming more comfortable with this style

of teaching. Krough et al. (2016) found similar results with "becoming comfortable with the uncomfortable" (p. 7). The conclusions I drew from the findings to answer research question number three was that faculty require time and practice to become confident in their debriefing practice.

Research Question 4

The fourth research question was "How did the experiences of learning how to effectively debrief and initial trials of conducting debriefing sessions relate to faculty's adoption of incorporating debriefing sessions after simulation-based activities?" As Research Question 4 focused on faculty's adoption and active experimentation both Rogers (2003) and Kolb's (1984) conceptual lens were used to help support the findings for this research question. Adoption occurs after a person successfully transitions through each of the five stages of the innovation-decision process (Rogers, 2003).

Facilitate/guide without teaching. Although the research participants were educated on the techniques and participated in experiential learning, many reported they had a longer than expected time of adopting this method. The participants used words like, "challenging, difficult, and hard" when explaining how they had to "NOT teach during debriefings." Kardong-Edgren (2016) commented in an editorial, "thoughtful gentle questioning . . . often uncover 'hidden significance and unexpected connections'" (p. A1). Kardong-Edgren continued to explain that as facilitators during debriefing sessions, "we are modeling kindness and curiosity" (p. A1). As several focused facilitation techniques can be found in the literature, Sawyer et al. (2016) described several methods, such as the 'advocacy-inquiry' method where the debriefer first presents

their observations of an action and then inquiries about the mental frames of the students. Another style of guiding without teaching is using the 'plus-delta', where the debriefer asks the students to state what went well and what would they change during the simulation (Brown and Holt, 2015; Paige et al., 2015).

Student self-reflections. Kolb's "reflective practice" is evident in the literature as a critical element and arguably a predominate source of experiential learning as found in debriefing after simulation-based activities (Sawyer et al., 2016). Cockerham (2015) found when students had the opportunity to reexamine the simulation during debriefing sessions, then the students' skills of problem-solving and clinical reasoning improved. Several research participants commented on similar findings.

Trying different techniques. From the training, the research participants stated that they were trained on the plus-delta debriefing method (Brown & Holt, 2015). Several of the participants shared that although this method worked for them, they were interested in learning new debriefing techniques because they used debriefing after simulation-based activities several times in one course. Participant 11 stated, "I just don't want it to get old." Other participants reported reading empirical research and attending additional training. Sawyer et al. (2016) compared seven different debriefing models to inform educational practices in health care faculty who may have similar educational endeavors.

After the training sessions and initial trials of conducting debriefing sessions, all 12 participants adopted debriefing after simulation-based activities in their courses. All participants adjusted their teaching delivery with a focus on facilitating conversations to

promote student self-reflections in the debriefing sessions. In addition, they claimed they had experimented with different styles of debriefing.

The conclusions I drew from the findings for the fourth research question were that with time and practice, faculty began to research researching different styles of debriefing and ways to guide and facilitate conversations during the debriefing sessions to enhance student self-reflection. Based on the responses from the interviews, all faculty participants had successfully adopted and experimented with the use of debriefing after simulation-based activities in their courses.

Limitations of the Study

Before this study was conducted, the main limitations acknowledged in Chapter 1 were time of the data collection, the differently constructed simulation and debriefing centers that could influence participants' experiences, and the purposeful sampling of occupational therapy and physical therapy higher education health science faculty. The occupational therapy and physical therapy faculty who participated in this study were employed at the same university that comprised four separate campuses. The data was collected outside of the participants' work hours and during their winter break from the university. This timeframe could have limited sample population volunteer participants and responses.

Each campus housed a uniquely constructed simulation and debriefing center. Although the participants' responses did not include any comments, their individual experiences in each simulation and debriefing center could have unconsciously influenced their responses. It was possible that this study reflected perceptions and

experiences from faculty who were comfortable sharing their experiences of their training and debriefing sessions, hence their willingness to participate. However, these 12 participants may not represent the faculty who have been trained and who do conduct debriefing after simulation-based activities yet did not participate in this study.

The breadth of this national sample of occupational therapy and physical therapy faculty is a significant feature of this study with the blending of their data strengthening the findings. However, the participants were limited to occupational therapy and physical therapy faculty from one national university. Faculty from other universities and health care disciplines were excluded. A more complete exploration could include the experiences of allied health faculty from professions such as speech pathology, respiratory therapy, recreational therapy, and physician assistants. Therefore, this sample population for this research study could be debated on generalized findings to other occupational therapy and physical therapy faculty populations as well as to allied health education.

Recommendations

This study focused on the perceptions and experiences of higher education occupational therapy and physical therapy faculty from one university. The perceptions and experiences of additional allied health faculty should be included in future studies to provide a deeper and broader understanding on adoption of debriefing after simulation-based activities. Also, this study only concentrated on one national university that contains four separate campuses. Future studies should include other health science

faculty from other universities that utilize debriefing after simulation-based activities in their teaching delivery.

The original intent of this study was to interview 8-12 participants and have 1-2 focus groups to capture rich, thick data. However, due to the three different time zones and winter break plans from the university, only 12 interviews were completed. Using focus groups in future studies may capture unpredictable data that can come out of group discussions (Ravitch & Carl, 2016).

All the research participants agreed that the use of debriefing after simulation-based activities facilitated students meeting course objectives. Additional data could be gathered from the students to measure how they are meeting those course objectives through the debriefing and simulation process.

The peer-reviewed literature from Chapter 2 provided the conceptual framework of Rogers (2003) theory of diffusion and Kolb's (1984) experiential learning theory, the history of debriefing from military to aviation to medical education with the acknowledgment that there was limited understanding of how occupational therapy and physical therapy faculty have adopted the innovation of using debriefing as a means of teaching delivery. In addition, there was no empirical evidence of the experiential learning process of these faculty that may have contributed to their adoption of utilizing debriefing after simulation-based activities in their courses. As this research study touched the surface of 12 participants' experiences and adoption of using debriefing after simulation-based activities, I recommend a research study that delves deeper into the innovation decision-making process of health science faculty.

Another recommendation could concentrate on the sustainability of those faculty who have adopted the debriefing process. Rogers (2003) defined sustainability as "the degree to which a program of change is continued after the initial resources provided by a change agency are ended" (p. 376). Using Rogers (2003) claim, once an innovation has been adopted, sustaining that adoption is critical. A research study could focus on health science faculty who have adopted debriefing after simulation-based activities in their courses and those who have abandoned this teaching paradigm. Understanding the factors that influenced the sustainability or lack of sustainability of faculty use of debriefing after simulation-based activities could help additional health science faculty make decisions in the future.

Implications

Positive Social Change

Implications for positive social change exist for higher education faculty and the stakeholders of the university including the health science students. The diffusion of this innovative teaching strategy is possible in several of the graduate courses offered at the university. From the interviews, the participants specified that they utilized debriefing after simulation-based activities for their laboratory courses that focus on patient care handling. In the field of occupational therapy, patient handling is only one aspect in the occupational therapy scope of practice (Campbell, Drisdelle, & Lapointe, 2017). Occupational therapists work across the lifespan from neonatal to geriatric patients and in settings other than hospitals, such as in schools, homeless shelters, foster homes, psychiatric facilities, and prisons. These challenging environments can be daunting for

new graduates. Occupational therapy faculty can consider the use of simulated interviews followed with debriefing to help prepare the occupational therapy students transition from classroom into these environments.

As this study found, after the initial learning curve and shifting of faculty mindset, the faculty research participants praised the surprising improvements in the problem-solving and critical thinking skills of students that is required as they transition from classroom into clinical practice. The research participants graciously shared their experiential learning and adoption progression that potential health science faculty can learn from as they are considering acquiring the skill of debriefing after simulation-based activities.

Recommendations for Practice

Professional recommendations arising from the analysis of the interview responses are the need for additional debriefing training, the use of peer and student feedback, and the opportunity to observe more experienced faculty who are debriefing after simulation-based activities in their courses. Although the participants received formal multi-day training sessions, most of the research participants stated they wanted additional training on different debriefing methods. A few research participants feared that their debriefing style was "becoming redundant," "losing its value," and "getting old" because they are debriefing three to four times in the same course. One participant suggested "having administration support on an ongoing basis for additional training" would be helpful. A couple of participants claimed they are reading journal articles and attending courses at professional conferences to "learn more ways to debrief."

The request to use peer feedback was mentioned in the responses from the research participants. Cheng et al., (2017) emphasized "Peer coaching can transform everyday debriefing sessions into skill development opportunities for educators." In the reviewed literature, there are several instruments designed for peer review with the intent of assessing the various delivery aspects of simulation and debriefing (Saylor et al., 2016) and improving faculty competency in debriefing (Rudolph et al., 2016). The stakeholders and faculty of this university can review these peer debriefing tools and incorporate them as appropriate.

The final recommendation for practice would to arrange observation opportunities for novice faculty to observe more experienced faculty conduct debriefing sessions. If scheduling is an issue, perhaps the use of debriefing training videos for faculty to watch at their convenience.

Conclusion

This study used a qualitative research approach to explore the perceptions and experiences of health science faculty in their learning and adoption of utilizing debriefing after simulation-based activities. As a result, this research found that although the participants were initially uncertain and critical during the learning training process, all 12 participants have integrated the use of debriefing after simulation-based activities as a teaching paradigm for their students to meet their course objectives. The research participants collectively praised the improved problem-solving and critical thinking skills of their students post use of debriefing strategies. Each participant described the

serendipitous benefits of this teaching tool and their desires to learn additional methods and strategies to debrief.

This study has attempted to fill the gap in occupational therapy and physical therapy education research by describing the adoption process and experiences of higher education health science faculty of using debriefing after simulation-based activities in their courses. As faculty become more confident and competent in conducting debriefing sessions, students increase their ability to self-reflect and improve motor performance skills. Therefore, the use of debriefing after simulation-based activities is conducive for facilitating the students transition from classroom knowledge to clinical practice. In conclusion, more competent teachers promote more competent students which promote safer interactions between students and patients in the clinic.

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Appendix A: Questionnaire for Faculty on Simulation-based Activities and Debriefing

The purpose of this questionnaire is to learn your experiences and knowledge of prebriefing, simulation-based activities, and debriefing. From your information, the faculty development committee can provide more accurate education and training to build faculty confidence and competence with incorporating simulation-based activities and debriefing into your courses. In addition, from the results of this questionnaire, you may be invited to voluntarily participate in a dissertation research study on faculty perceptions and experiences with using debriefing after simulation-based activities in your courses.

This questionnaire should take approximately 5 minutes to complete.

Q1. What are your years of teaching experience?

Answers in groups of 5 years

Q2. What is your program? Check all that apply.

Answers are only the current occupational therapy and physical therapy programs

Q3. On a scale from 1 (not familiar at all) to 4 (extremely familiar), please rate how familiar you are with each part of the simulation process.

**By familiarity, we mean how often you have experienced being in a simulation event either as an observer, learner or educator, as well as how well you know about the simulation process. The more you know about the simulation process, the higher you would rate it. The less you know about the simulation process, the lower you would rate it. If you have never heard of an item before, select 1 (not familiar at all).*

Answer Options:

- Your Familiarity with the whole simulation process from prebriefing to simulation to debriefing
- Writing the clinical scenario simulation-based activities
- Preparing the clinical scenario simulation-based activities in the simulation center
- Pre-briefing (the activity before the simulation)
- The Clinical Scenario Simulation-based activities (the detailed clinical activities of the scenario)
- Debriefing (the facilitated reflection discussion after the simulation-based activities)

Q4. If you have participated in debriefing sessions, which role did you have? Check all that apply.

Answer Options:

- Participant
- Observer
- Facilitator
- Training session

Q5. If you participated in a faculty development training session that included debriefing, on a scale from 1 (not at all) to 4 (a lot), how often do you:

- reflect on the debriefing session training?
- reflect on your performance of conducting debriefing sessions either in the training session or your courses?
- experiment with conducting debriefing sessions?

Q6. How likely are you to adopt and use debriefing after simulation-based activities in your courses?

Answer options range from not at all to more than four times a term in courses

Q7. Please use the following definitions to answer the question: How often do you include any aspect of the simulation process in your current courses?

A. ***Prebriefing***- *An activity immediately preceding the start of a simulation activity where the participants receive essential information about the simulation scenario, such as patient past and current medical history, objectives of the scenario, and guidelines.*
B. ***Simulation***-*A detailed outline of a clinical encounter that includes: the participants in the event, briefing notes, goals and learning objectives, participant instructions, patient information, environmental conditions, manikin or standardized patient preparation, related equipment, props, and tools or resources for assessing and managing the simulated experience.*
C. ***Debriefing***-*the conducted session after a simulation event where educators/facilitators and learners re-examine the simulation experience for the purpose of moving toward assimilation and accommodation of learning to future sessions. Debriefing should foster the development of clinical judgment and critical thinking skills.*

Answer options:

On a scale from 1 (Never) to 4 (Always), please rate how often you include any aspect of the simulation process in your courses.:

- PreBriefing (the activity before the simulation)
- Simulation (the detailed clinical activities of the scenario)

- Debriefing (the facilitated reflection discussion after the simulation-based activities)

Q8. On a scale from 1 (not comfortable) to 5 (extremely comfortable), how would you rate yourself in each category?

Answer Options:

- My knowledge on how to create and write up a clinical scenario using simulation-based activities for my courses.
- My knowledge on how to prepare and set up a clinical scenario using the simulation environment for my courses.
- My knowledge on how to lead a prebriefing discussion for my courses.
- My knowledge on how to manage and run clinical scenario simulation-based activities for my courses.
- My knowledge on how to conduct and facilitate a debriefing session after the simulation-based activities.

Q9. Please rank your top 3 areas you would like to learn more about to be able to include into your courses.

Answer options:

- Writing up clinical scenario simulation-based activities
- Preparing and setting up the environment for simulation-based activities
- Leading prebriefing sessions for simulation-based activities in my courses.
- Managing and running simulation-based activities for my courses.
- Conducting and facilitating debriefing sessions after simulation-based activities,
- Understanding verbal and non-verbal communication in my students.
- Establishing ground rules for the simulation and debriefing process.
- Facilitating students' connections of the simulation experience to clinical practice.
- Reflecting on student actions/facilitating student self-reflections
- Other: *write-in option*

Q10. If you meet the inclusion criteria of attending at least one training session and conducted at least one debriefing session in any of your courses, would you be willing to voluntarily participate in a 45-60-minute online interview or focus group for a dissertation research study on faculty perceptions on the adoption and experiences of using debriefing after simulation-based activities?

Answer options are yes, no, and maybe

Appendix B: Interview and Focus Group Guide

Date:
Time:
Interviewee Code #: or Focus Group Interviewee Code #
Location: Office for Internet Access and Privacy

Introduction

Hi, my name is Mo Johnson.

Thank you very much for participating in this research study on faculty debriefing.

As you know, the purpose of this interview/focus group is to talk about your adoption of using debriefing and your learning process and experiences of how to conduct debriefing sessions in your classes after simulation-based activities.

This interview/focus group should last about 45 minutes and not longer than 60 minutes.

After the interview/focus group, I will transcribe the interview/focus group and examine your answers for data analysis. I may be contacting you for accuracy in your statements.

Your name will not be identified in any of my documents and no one will be able to identify you with your answers.

You can choose to stop this interview/focus group at any time.

Also, I need to let you know that this interview/focus group will be recorded for transcription purposes.

Do you have any questions?

Are you ready to begin?

Question 1:

1. Okay, let's begin with your debriefing training. Can you please describe and share your recollections about your learning process on how to effectively debrief after simulation-based activities?

(Kolb, 1984, concrete experience/reflection)

Probes:

- Maybe what you remember most about your learning how to debrief?
- Possible thoughts or insights you had while you were learning about conducting debriefing sessions.

Question 2:

2. Please think back to the time from right after you were trained to conduct simulations and debriefings to the time of your very first debriefing session that you led. (Rogers, 2003, Knowledge)

- What was the time frame in between?
- What pursued you to trial debriefing in your course? (Rogers, 2003, Persuasion)

Probes:

- What factors (faculty, conferences, content in your course) influenced your decision to debrief?

Question 3:

3. Now let's discuss your very first debriefing session that you led. When you reflect on implementing your first debriefing session, tell me about the debriefing session. (Rogers, 2003, Implementation)

Probes:

- What went as you expected, what went not as you expected?
- Tell me more about your debriefing experience what did you learn from your first conducted session?

Question 4:

4. Let's talk about how you conduct debriefing sessions now. Tell me about a typical debriefing session – what do you do?

Probes:

- Tell me how you have actively experimented with conducting debriefing sessions
- Are there any influences on your debriefing practice?

Question 5:

5. In what way has your debriefing changed over time?

Probes:

- Length of debriefing session
- Timeframe after simulation-based activities
- Location of debriefing session
- Who talks the most in the debriefing sessions

Question 6:

6. From your perspective, how does the use of debriefing after simulation-based activities support your teaching your courses' objectives?

Okay, I am taking some notes, okay. Thank you for your answers

Closing

In Closing,

1. What advice would you give to faculty that are considering using debriefing after simulation-based activities in their course?

2. Do you have anything else you'd like to share?

3. Do you have any questions for me?

Thank you for your time and participation in this study.

Appendix C: Permission to Use Interview and Survey Questions

Re: Permission for survey questions

Maureen Johnson
Fri 8/10/2018 8:49 AM
Sent Items
To:Deborah Beyer [redacted]

Thank you for your permission.
I am so curious to learn what seasoned OT and PT professors REALLY think about conduc ng debriefing sessions as they are more familiar (comfortable?) with being the sage on the stage ☺

Maureen "Mo" Johnson, MS, OT/L, C/NDT
PhD Candidate in Educa on: Learning, Instruc on, and Innova on Student
ID: [redacted]

From: Deborah Beyer [redacted]
Sent: Friday, August 10, 2018 8:48:21 AM
To: Maureen Johnson
Subject: Re: Permission for survey ques ons

Maureen
Yes, you have my permission. I will be interested in your findings.
Debbie

On Fri, Aug 10, 2018 at 11:43 AM Maureen Johnson [redacted] wrote:

Hello Deborah,

I am a PhD student with Walden University. My disserta on focus is a qualita ve research study with a focus on learning the percep ons and experiences of higher educa on health science faculty (OT and PT) on debriefing a er simula on-based ac vi es.

I have read your ar cle Effec veness of Human Pa ent Simulator as A Classroom Teaching Strategy and your list of survey ques ons have influenced my design of the survey ques ons I would like to ask faculty par cipants in my study.

May I please have your permission to use my ques ons as they are created, adapted, and modified by your ar cle in Clinical Simula on in Nursing Journal?

A ached is my proposed interview ques ons.

Thank you,

Maureen "Mo" Johnson, MS, OT/L, C/NDT

SV: Permission for survey questions

Kristian Krogh [redacted]
Sun 8/12/2018 6:58 AM

To:Maureen Johnson [redacted]

Dear Maureen
I am pleased that our work has inspired further research within this area – and you are welcome to use what you can for you research.
I wish you the best of luck and look forward to read your work

Cheers,
Kris an

Kris an Krogh, MD PhD
Department of Anaesthesia and Intensive Care, Aarhus University Hospital, Denmark

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Fra: Maureen Johnson [redacted]
Sendt: 12. august 2018 01:03
Til: Kris an Krogh [redacted]
Emne: Permission for survey ques ons

Dear Kris an,

I am a PhD student with Walden University. My disserta on focus is a qualita ve research study with a focus on learning the percep ons and experiences of higher educa on health science faculty (OT and PT) on debriefing a er simula on-based ac vi es.

I have read your ar cle "Thinking on your feet"-A qualita ve study of debriefing prac ce and your list of survey ques ons have influenced my design of the survey ques ons I would like to ask the faculty par cipants in my study.

May I please have your permission to use my ques ons as they are created, adapted, and modified by your ar cle in the Advances in Simula on Journal?

A ached is my proposed interview ques ons.

Thank you,

RE: Permission for Interview Questions

Paige, John [redacted]

Sun 8/19/2018 10:49 AM

To:Maureen Johnson [redacted]

Absolutely! Happy you found the ar cle useful!
john

From: Maureen Johnson [redacted]
Sent: Saturday, August 11, 2018 6:06 PM
To: Paige, John [redacted]
Subject: Permission for Interview Ques ons

EXTERNAL EMAIL: EVALUATE

Dear John,

I am a PhD student at Walden University. My disserta on focus is a qualita ve research study with a focus on learning the percep ons and experiences of higher educa on health science faculty (OT and PT) on debriefing a er simula on-based ac vi es.

I have read your ar cle Debriefing 101: Training faculty to promote learning in simula on-based training and your list of survey ques ons have influenced my design of the survey ques ons I would like to ask the faculty par cipants in my study.

May I please have your permission to use my ques ons as they are created, adapted, and modified by your ar cle in The American Journal of Surgery?

A ached is my proposed interview ques ons.

Thank you,

Maureen "Mo" Johnson, MS, OT/L, C/NDT
PhD Candidate in Educa on: Learning, Instruc on, and Innova on
Student ID: [redacted]