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IMPLEMENTATION OF A SCRIPTED DEBRIEFING TOOL IN SIMULATION-BASED NURSING

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IMPLEMENTATION OF A SCRIPTED DEBRIEFING TOOL IN SIMULATION-BASED NURSING

By

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IMPLEMENTATION OF A SCRIPTED DEBRIEFING
TOOL IN SIMULATION-BASED NURSING

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ABSTRACT

IMPLEMENTATION OF A SCRIPTED DEBRIEFING TOOL IN SIMULATION-BASED NURSING

By

Mary Rose Kidd

In nursing education, simulation represents real patient scenarios that are designed to enable students to practice combining theoretical knowledge with clinical skills within a controlled environment (Bland, Topping, & Wood, 2011). Debriefing is a facilitated reflection of the simulation experience and is performed to uncover relationships among the events, actions, thought processes and outcomes with the intention of improving future practice (Cheng et al., 2014; Kolbe, Grande, & Spahn, 2015). Without proper debriefing, erroneous critical thinking, decision-making, and clinical judgement may go uncorrected, potentially negatively impacting patient care. There is an abundance of literature on debriefing methods; yet, empirical evidence supporting one specific method of debriefing over others is limited. The purpose of this scholarly project was to determine whether implementation of a scripted debriefing tool in comparison to unscripted debriefing would result in better learning outcomes as perceived by a sample of undergraduate nursing students at a Midwestern university. The evidence-based debriefing tool that was used was developed by Gum, Greenhill, and Dix (2011) and is titled Debriefing Guide for Facilitators. This scholarly project utilized a quasi-experimental research design and used a Likert-based survey that was designed to measure students' perceptions of their ability to meet the learning objectives of the simulation. A Mann-Whitney U test was used to compare median Likert survey scores between the unscripted and scripted debriefing groups following a post-partum hemorrhage simulation. Results from the statistical analysis did not yield statistically significant results (p = .423). Despite a lack of statistical significance, many

benefits of utilizing a scripted debriefing tool were identified. This scholarly project adds to the current debriefing literature and may be considered as a means to optimize simulation for improved student learning outcomes which may lead to increased patient safety and quality of care.

DEDICATION

This scholarly project is dedicated to my daughters, Isabel and Mara. You both are an inspiration to me and I hope that you always do your best and persevere to reach your goals.

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This author would like to acknowledge many people who have helped see this project to completion. Thank you Melissa Romero, Nancy Maas, Anne Stein, Kristin Smith, Rachel Nye, and Mike Strahan. Thank you to my family and friends who have supported me. Most importantly thank you to my husband, Tommy, for all of your love and encouragement.

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Chapter One

By graduation, it is essential that undergraduate nursing students are clinically competent and equipped to provide high-quality care for a variety of patients. However, barriers to clinical opportunities such as an increase in the number of students combined with a decrease in clinical placement sites may limit hands-on-type learning (Bland et al., 2011). The use of simulation in undergraduate nursing programs may enhance students' exposure to important patient scenarios they may not have otherwise encountered. Additionally, simulation has been identified as a recommended strategy to improve patient safety and quality of care, following the landmark Institute of Medicine (IOM) report, *To Err is Human: Building a Safer Health System* (Kohn, Corrigan, & Donaldson, 2000).

Background and Significance

Simulation is the imitation or replication of patient conditions or a set of circumstances used as a method for teaching undergraduate nursing students (Bland et al., 2011). In nursing education, simulation represents real patient scenarios that are designed to enable students to practice combining theoretical knowledge with clinical skills within a controlled environment (Bland et al., 2011). This can be performed using low or high fidelity anatomically correct manikins. Fidelity refers to "the accuracy or degree of realism of the simulation system" (Bland et al., 2011, p. 665). For example, a high fidelity manikin utilizes computer technology to simulate features such as human heart and lung sounds, giving the manikin a high level of realism. The life size manikin physiologically reacts to students' interventions through vital sign and electrocardiogram changes controlled by the instructor using the simulator computer (Solnick & Weiss, 2007). Utilization of simulation is ever growing and provides students with life-like patient care experiences in a safe and ethical environment (Bland et al., 2011; Secomb, McKenna, & Smith, 2012).

One component of simulation is debriefing. Researchers have suggested that debriefing may enhance cognitive development and assist in behavioral changes leading to improvement in learning outcomes (Dreifuerst, 2009; Kolbe et al., 2015). Debriefing is a facilitated reflection of the simulation experience and is performed to uncover relationships among the events, actions, thought processes and outcomes with the intention of improving future practice (Cheng et al., 2014; Kolbe et al., 2015). Debriefing is used in many different aspects of healthcare including nursing, surgery, and anesthesia, as well as after military operations, emergency responses, and within the aviation industry (Arora et al., 2012; Fanning & Gaba, 2007; Kolbe et al., 2015). Researchers have developed various methods of debriefing in addition to identification of key components of an effective debriefing session (Arora et al., 2012; Dreifuerst, 2009; Fanning & Gaba, 2007; Levett-Jones & Lapkin, 2014; Rudolph, Simon, Dufresne, & Raemer, 2006; Runnacles, Thomas, Sevdalis, Kneebone, & Arora, 2014; Zigmont, Kappus, & Sudikoff, 2011). Some of the different methods of debriefing include instructor facilitated with video-recording, instructor facilitated without video-recording, in-simulation debriefing, post simulation debriefing, scripted, and unscripted debriefing (Cheng et al., 2013; Levett-Jones & Lapkin, 2014; Mariani, Cantrell, Meakim, Prieto, & Dreifuerst, 2013). Key components to performing an effective debriefing session that have been identified in the literature include a constructive and supportive approach from the facilitator, appropriate learning environment, learner engagement, addressing learners' emotional reaction, reflection, analysis, and application (Ahmed et al., 2012; Arora et al., 2012; Dreifuerst, 2009; Kolbe et al., 2015; Rudolph et al., 2006; Zigmont et al., 2011).

Unscripted debriefing is an intuitive process by which the facilitator does not use a script. The goal of this technique is to match debriefing outcomes with simulation learning objectives

(Cheng et al., 2013). Unscripted debriefing may or may not be grounded in theory. Some researchers have found that students' ability to achieve learning outcomes using this technique are highly variable among facilitators and simulations (Cheng et al., 2013).

In contrast, scripted debriefing is a structured debriefing method involving the facilitator utilizing a script to organize and guide the debriefing process. The use of scripted debriefing after simulation for health care providers and students has been found to have a positive impact on learning objectives; which led to positive changes in patient care outcomes (Cheng et al., 2013; Cicero et al., 2012; Dreifuerst, 2009; Mariani et al., 2013;). Researchers have identified other advantages to structured debriefing which includes the following: (a) it is learner-centered; (b) it encourages reflection; (c) it delivers ample feedback; and (d) there is consistency in how the facilitator delivers feedback to participants (Mariani, Cantrell, & Meakim, 2014). Mariani et al. (2013) found that nursing students preferred structured debriefing after simulation.

Statement of the Problem

Researchers have found that the quality of debriefing after a simulation has an impact on learning outcomes, which may influence future performance of nursing students (Dreifuerst, 2009; Mariani et al., 2013). Poor quality debriefing may lead to incorrect student learning from the experience (Dreifuerst, 2009; Mariani et al., 2013). Without proper debriefing, erroneous critical thinking, decision making, and clinical judgement may go uncorrected (Dreifuerst, 2009). Therefore, it is essential that the process of debriefing be guided by the latest research and evidence. Inconsistent reflection practices among simulation scenarios may lead to a variety of learning outcomes for the students, ultimately affecting future patient care practices. In a study on nurse educators' views about debriefing in simulation, Mariani et al. (2014) found that a common perceived barrier to debriefing was that it requires time and a significant amount of

effort. The use of an evidence-based script to guide the debriefing process can be a strategy to assist debriefing facilitators so that simulation participants achieve the intended learning objectives (Eppich & Cheng, 2015).

Statement of Purpose

The purpose of this scholarly project was to determine if using a script to structure debriefing post-simulation would lead to improved learning objectives compared to unscripted debriefing sessions as perceived by a sample of undergraduate nursing students at a Midwestern university.

This scholarly project utilized a quasi-experimental design and included a convenience sample of 72 undergraduate nursing students during their third semester in a nursing program at a rural, Midwestern university. Participants were exposed to minimal risk and an expedited Institutional Review Board (IRB) level of approval was granted through the university. Two faculty were involved in the scholarly project by designing and facilitating the simulations and debriefing. Baseline data were collected from seven simulations that were completed using an unscripted debriefing session. After all baseline data were collected, the two faculty members involved in the scholarly project were oriented to the debriefing script, Debriefing Guide for Facilitators (Gum et al., 2011). Upon completion of the orientation session, the faculty members utilized the debriefing script in eight of the same obstetrical simulations and data were collected.

The tool, Debriefing Guide for Facilitators, is scripted and theory and research based (Gum et al., 2011). It provides structure for the facilitator to ensure that the key components of an effective debriefing session are addressed. After completion of the simulation and debriefing sessions, students in both control and experimental groups were asked to complete a Likert scale

survey that allowed them to rate how well each learning objective was met. This scholarly project took place over two academic semesters. A Mann-Whitney U test was used to measure differences in student scores between scripted versus unscripted debriefing.

Kolb's (1984) experiential learning theory was used to guide the implementation of this scholarly project. There are four main modes or stages of Kolb's experiential learning theory including concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984). By the fourth stage of experiential learning, active experimentation, Kolb proposes that the learner is able to use concepts and theories developed from the previous stages to guide future actions, decision-making, and problem solving (Kolb, 1984). At the end of debriefing, students should be able to identify how they would react to a future patient scenario similar to the simulation based upon what they learned through the concrete experience, reflective observation, and abstract conceptualization.

Chapter Two

Literature Review

Debriefing is defined as a facilitated reflection of the simulation experience and is performed to uncover relationships among the events, actions, thought processes and outcomes with the intention of improving future practice (Cheng et al., 2014; Kolbe et al., 2015). Debriefing is used in simulation-based education to guide reflection of the simulation experience, identify what went well and what did not, and enhance future practice through making sense of the event (Ahmed et al., 2012; Dreifuerst, 2009; Fanning & Gaba, 2007). According to researchers, every simulation participant has their own unique knowledge base which makes up their frame of reference and guides their actions through the simulation (Rudolph et al., 2006). A fundamental element of debriefing is uncovering the student's frame of reference and thought processes behind the actions taken during the simulation (Fey & Morse, 2015). Researchers have suggested that debriefing enables new insights to occur through dialogue between students and their instructor (Ahmed et al., 2012). Other researchers suggest that debriefing is integral within simulation-based education, necessary to achieve learning outcome goals, and is perhaps the most important component of simulation (Arora et al., 2012; Fanning & Gaba, 2007; Levett-Jones & Lapkin, 2014; Shinnick, Woo, Horwich & Steadman, 2011; Zigmont et al., 2011).

Debriefing methods.

The literature on debriefing methods is abundant; although, empirical evidence supporting one specific method of debriefing over others is limited (Eppich & Cheng, 2015; Garden, Le Fevre, Waddington, & Weller, 2015; Kolbe et al., 2015; Levett-Jones & Lapkin,

2014; Sawyer et al., 2012). Facilitator-guided, post-simulation debriefing is the most commonly used method for debriefing (Sawyer, Eppich, Brett-Fleegler, Grant, & Cheng, 2016). In an observational study with a retrospective pre-post survey, Van Heukelom, Begaz, and Treat (2010) compared in-simulation debriefing to post-simulation debriefing and found statistically significant differences between the two; favoring post-simulation debriefing. In this study, the authors randomly assigned 161 third year medical students to receive debriefing either during or after an advanced cardiac life support (ACLS) simulation experience. The outcome measures consisted of self-reported confidence and knowledge levels related to cardiac resuscitation. Study participants who received debriefing after the simulation experience scored significantly higher on the outcome measures in comparison to the participants who received debriefing during the simulation (p = .001) (Van Heukelom et al., 2010).

Structured debriefing.

Structured debriefing sessions are grounded in theory and usually include three phases: reaction, analysis, and summary (Garden et al., 2015; Kolbe et al., 2015). In the reaction phase, the facilitator allows time for the participants to verbalize how they felt about the simulation. The reaction phase is followed by a deeper analysis and subsequent reflection of what actions were taken and why those actions were taken. The process concludes with a summary phase where the participants discuss how they will apply what was learned from the simulation to their future practice (Kolbe et al., 2015). In order to ensure structure and organization of the debriefing session, facilitators will sometimes use a script for guidance, referred to as scripted debriefing.

A review of the literature provides support for the effectiveness of structured debriefing (Ahmed et al., 2012; Cheng et al., 2013; Cicero et al., 2012; Coutinho, Martins, & Pereira, 2016;

Forneris et al., 2015; Mariani et al., 2013). In a pretest-posttest design study, Cicero et al. (2012) found that 53 pediatric medical residency students demonstrated improved pediatric disaster triage accuracy following a structured debriefing session that took place post-simulation. The debriefing session was structured using the following four steps: "(1) note gaps between performance and objectives; (2) provide feedback describing the gap between learner performance and optimal performance; (3) discuss the emotional and cognitive reason(s) for the gap; and (4) close the gap through discussion or targeted instruction" (Cicero et al., 2012, p. 240). Study subjects participated in an initial pediatric disaster triage simulation and structured debriefing session. The study subjects participated in a second pediatric disaster triage simulation after 1 week, and a third 5 months later. The primary outcome measure consisted of a triage category score that was assigned to evaluate student performance. The mean value of accurately triaged scores from the initial simulation prior to the structured debriefing was 6.9/10. One week later, after the structured debriefing, accuracy of the triage category improved to 8.0/10. Five months after completion of the training, the mean value of accurately triaged patients remained improved from the initial score at 7.8/10. The most significant area of improvement for the participants was the ability to accurately triage head-injured, unresponsive patients. The researchers stated that there was no other educational intervention that took place in the study besides structured debriefing (Cicero et al., 2012).

Researchers have studied nursing students' perceptions of structured debriefing and have found many positive outcomes (Coutinho et al., 2016). In a qualitative, descriptive-exploratory study, Coutinho et al. (2016) utilized a four-stage structured debriefing tool that was used following a senior level nursing simulation and surveyed the participants to obtain their perceptions of structured debriefing and the impact structured debriefing had on them. Although

the sample size was small (N = 22), the researchers obtained valuable information from the students' responses to the open-ended questions. The researchers reported that the students attributed the structured debriefing to knowledge improvement, skill development, increased ability to reflect, and positive behavioral changes. Additionally, the students expressed that structured debriefing reduced stress and insecurities related to their performance and encouraged participation and teamwork (Coutinho et al., 2016).

In a mixed-methods study, Mariani et al., (2013) utilized a quasi-experimental design to compare students' clinical judgement abilities in those who received structured versus unstructured debriefing. The structured debriefing method used was Dreifuerst's (2009) tool, entitled, Debriefing for Meaningful Learning (DML). This tool uses a consistent process involving the components engage, evaluate, explore, explain, elaborate, and extend to encourage reflection and promote clinical reasoning (Mariani et al., 2013). The sample consisted of 86 junior-level nursing students. Of those, 42 students received structured debriefing and 44 received unstructured debriefing. Clinical judgement abilities were measured using the Lasater Clinical Judgement Rubric (LCJR) instrument which "provides a framework for assessing students' clinical judgement abilities" in noticing, interpreting, responding, and reflecting (Mariani et al., 2013, p. e149). Using the LCJR, the students were rated as beginning, developing, accomplished, or exemplary (Mariani et al., 2013). Scores from the LCJR were compared between the intervention (structured debriefing) group and the control (unstructured debriefing) group after the first scenario at the midpoint of the semester and again after the second scenario, 5 weeks later. The mean clinical judgement scores of the intervention group were higher than the scores of the control group. However, differences in scores between the groups were not statistically significant (p = .927 after the first scenario and p = .942 after the

second scenario). The authors suspected the lack of statistical significance might have occurred because of a low power due to the small sample size (Mariani et al., 2013). In the qualitative portion of the same study, Mariani et al. (2013) conducted focus group discussions to gain insight into students' perceptions of the effectiveness of structured verses unstructured debriefing experiences. The researchers found that students reported that structured debriefing, compared to unstructured debriefing, led to increased knowledge and skill acquisition (Mariani et al., 2013).

Using a quasi-experimental design, Forneris et al. (2015) studied whether structured debriefing was more effective in aiding with the development of clinical reasoning skills in comparison to unstructured debriefing. The sample was comprised of 153 nursing students who were from three different colleges of nursing. Study participants completed surveys before and after the simulation and debriefing sessions. Debriefing sessions were delivered using the DML tool. The researchers measured clinical reasoning using the Health Sciences Reasoning Test (HRST), which is a validated, multiple-choice test designed to assess critical thinking skills in health science students. The HRST measures students' ability to "draw inferences, make interpretations, analyze information, identify claims and reasons, and evaluate the quality of arguments" (Forneris et al., 2015, p. 307). After statistical analysis using a simple paired t-test, the researchers found that the students who received structured debriefing using the DML tool scored significantly higher (determined significant at the .10 level) on the HRST compared to those who received unstructured debriefing (p = .09) (Forneris et al., 2015).

In a qualitative study, Ahmed et al., (2012) interviewed 18 surgeons, eight anesthesiologists, and seven operating room nurses across three continents to identify common goals and core components associated with effective debriefing. The sample size consisted of 33

participants. The researchers conducted semi-structured interviews with each participant to gain the perspective of the trainers and learners. The interviews focused on exploring the viewed "purpose of debriefing, components of an ideal debriefing, examples of effective and ineffective debriefing, and strategies to improve the quality of debriefing" (Ahmed et al., 2012, p. 524). Through the interviews, Ahmed et al. (2012) found that structuring the debriefing process was a frequently reported strategy to improve the quality of debriefing.

In a multicenter, prospective, double-blinded, randomized controlled trial, Cheng et al. (2013) found that scripted debriefing versus unscripted debriefing led to improved participant knowledge acquisition as well as improved team leader behavioral performance following a pediatric advanced life support (PALS) simulation. The study sample included 453 participants from 14 pediatric tertiary care centers across North America from 2008 to 2011. Participants included nurses, paramedics, physicians, and respiratory therapists. The researchers used validated tools for each outcome measure including a multiple choice question tests (MCQ) that measured medical knowledge; a Clinical Performance Tool (CPT) that measured clinical performance of the team; and a Behavioral Assessment Tool (BAT) that measured team leader behavioral performance (Cheng et al., 2013). Outcome measurements were obtained at baseline and after the intervention for both groups. Participants who received scripted debriefing showed statistically significant improvement in scores on the MCQ test ($p = .04$), and on the BAT ($p = .03$) in comparison to the unscripted group. In measuring clinical performance (CPT), the participants showed an improvement following scripted debriefing, however, differences between the groups were not statistically significant ($p = .18$).

International Nursing Association for Clinical Simulation and Learning Standards

The International Nursing Association for Clinical Simulation and Learning (INACSL, 2015) has developed standards of best practice in simulation. The intention of the INACSL standards are to "advance the science of simulation, share best practices, and provide evidence based guidelines for implementation and training" (INACSL, 2015, para 1). There are nine standards which include: terminology, professional integrity of participants, participant objectives, facilitation, facilitator, debriefing process, participant assessment and evaluation, simulation enhanced interprofessional education, and simulation design. Standard VI indicates that all simulation experiences should include a deliberate debriefing session with the intent of promoting reflective thinking. The rationale behind Standard VI is that debriefing is an essential component of the simulation learning experience (Decker et al., 2013). Criterion four of INACSL Standard VI states that the debriefing process should be based on a structured framework (Decker et al., 2013). As part of the guideline for Criterion four, Decker et al. (2013) suggest that the debriefing facilitator should:

- Create a safe and supportive environment
- Use the appropriate style of debriefing (including video playback) based on participant objectives
- Allow progression through the phases of debriefing (reaction, analysis, and summary)
- Allow unexpected topics to be addressed
- Facilitate appropriate clinical judgement, reasoning, and reflection
- Allow facilitation to be modified based on assessed participant needs and the impact of the experience

- Allow for post-debriefing activities that promote self-reflection and critique (p. S28).

Summary

A review of the literature provided evidence supporting the idea that structured debriefing sessions following simulation leads to better learning outcomes than unstructured debriefing (Ahmed et al., 2012; Arora et al., 2012; Cheng et al., 2013; Cicero et al., 2012; Coutinho et al., 2016; Decker et al., 2013; Fanning & Gaba, 2007; Forneris et al., 2015; Levett-Jones & Lapkin, 2014; Mariani et al., 2013; Zigmont et al., 2011). Further, researchers have found that utilizing a script promotes structure of the debriefing session (Cheng et al., 2013; Dreifuerst, 2009). Structured debriefing has been studied through multiple health care disciplines including nursing students, nurses, paramedics, medical residents, physicians, respiratory therapists, anesthesiologists, and surgeons (Ahmed et al., 2012; Cheng et al., 2013; Cicero et al., 2012; Coutinho et al., 2016; Forneris et al., 2015; Mariani et al., 2013). Despite the different professions and perspectives, all of the above disciplines studied have demonstrated findings supporting the use of structured debriefing following simulation. Such findings include improved knowledge acquisition and skill development, improved clinical reasoning, improved triage accuracy, increased ability to reflect, and reduced stress and insecurities related to performance (Ahmed et al., 2012; Cheng et al., 2013; Cicero et al., 2012; Coutinho et al., 2016; Forneris et al., 2015; Mariani et al., 2013). Many agree that structured debriefing may maximize the quality of the debriefing, as facilitators utilize a script to address essential components of an effective debrief (Cheng et al., 2013; Dreifuerst, 2009). In fact, current standardized advanced life support classes utilize a script for debriefing following simulation training (Eppich & Cheng, 2015). Finally, INACSL provides a standard of best practice for simulation specific to

debriefing that emphasizes the importance of structured debriefing. Researchers associated with INACSL have suggested that proper debriefing results in enhanced learning and increased self-confidence within participants, and this may translate to the promotion of safe, high quality patient care (Decker et al., 2013).

The Scripted Debriefing Tool

The scripted debriefing tool that was implemented in this scholarly project is entitled Debriefing Guide for Facilitators and was developed by Flinders University Rural Clinical School for Country Health South Australia, and adapted from Gum, Greenhill, and Dix's (2011) Sim TRACT™ model. Gum et al. (2011) developed the Sim TRACT model based upon Mezirow's transformative learning theory and from their qualitative research exploring health professionals' perceptions of the post-simulation debriefing process. See Figure 1 for the Sim TRACT model. Permission to use the tool was granted from Lyn Gum (see Appendix A). The Debriefing Guide for Facilitators includes the reaction, analysis, and summary phases of debriefing. The tool, along with a description of each debriefing phase, is provided in Appendix B.

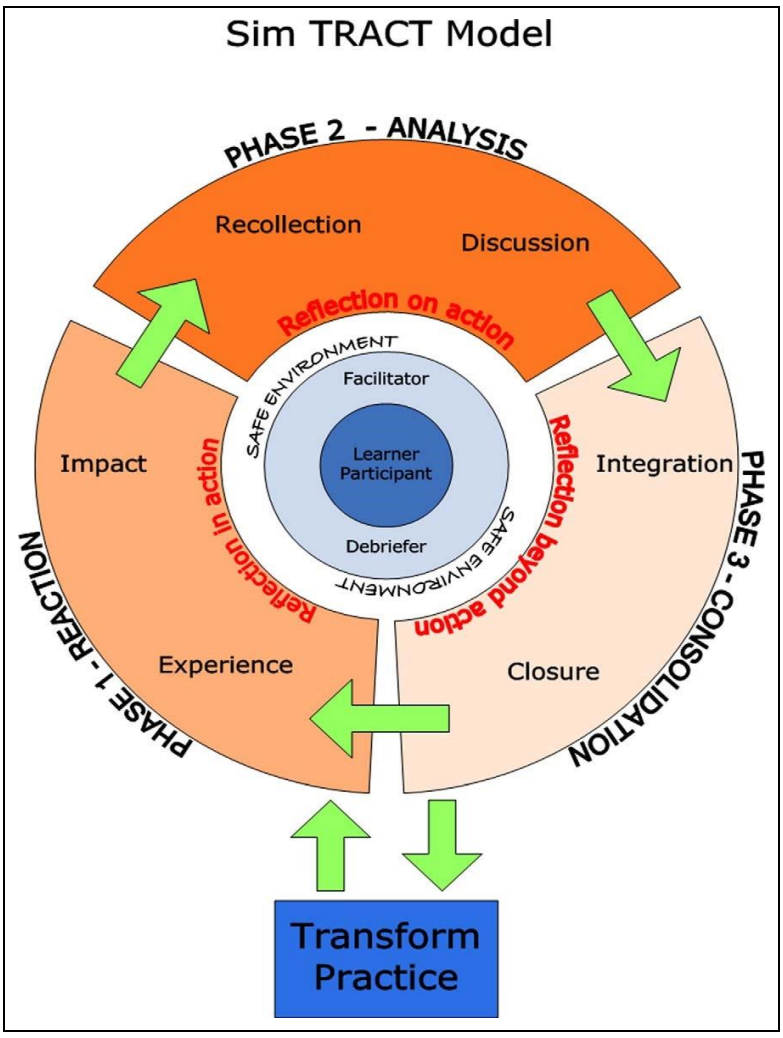

Figure 1: Sim TRACT model. Developed by Flinders University Rural Clinical School for Country Health South Australia, adapted from "Sim TRACT™: A Reflective Conceptual Framework for Simulation Debriefing," by L. Gum, J. Greenhill, & K. Dix, 2011, *Journal of Transformative Education, 9*(1), p. 32. Copyright 2012 by Lyn Gum. Reprinted with permission.

Theoretical Framework

The theoretical framework used to guide this scholarly project is Kolb's experiential learning theory. Kolb's experiential learning theory is a cognitive development/interaction theory (Wills & McEwen, 2014). Interaction theories emphasize the importance of relationships

and interactions between learners with the environment, behavioral, and mental processes; and experiential learning focuses on the learning conditions or environment and postulates that learning takes place over time and occurs within real life settings (Wills & McEwen, 2014).

Kolb (1984) theorizes that learning is a continuous process that is modified by pre-existing experiences. Kolb (1984) posits that every learning event is "relearning" because each learner approaches every situation with his own preexisting knowledge base. Using this theory, educators and simulation debriefing facilitators must be aware that their purpose in teaching is not just to enable new ideas to develop but also to eliminate and modify old ideas (Kolb, 1984). Kolb's experiential learning theory can aid in ensuring that undergraduate nursing students attain maximum learning outcomes from simulation and debriefing. The theory operates under the premise that adult learners interpret learning events based on their past experiences and longer lasting learning will be maintained if emotion is attached to the experience (Fanning & Gaba, 2007; Fey & Morse, 2015; Zigmont et al., 2011). Experiential learning involves participation, reflection, and assimilation of lessons learned into future behaviors (Fanning & Gaba, 2007).

Kolb's experiential learning theory has been influenced by theorists Lewin, Dewey, and Piaget and is a component of the experiential learning cycle, which is used to explain the continuous process of how adult learning occurs (Kolb, 1984). This cycle consists of four modes, or stages, of experiential learning, which learners must encounter in order to achieve new knowledge, skills, or attitudes (Kolb, 1984). Kolb (1984) states that "learning is the process whereby knowledge is created through the transformation of experience" (p. 41).

The four stages of the experiential learning cycle consist of concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984). The first stage of the cycle, the concrete experience, represents a stage in which the other stages will

build upon. In order to achieve the concrete stage of the cycle, the learner must possess the ability to approach a new learning situation in an open, unbiased manner (Kolb, 1984). Reflective observation is the second stage of Kolb's experiential learning cycle. Reflection is part of the transformation process of learning in which meaning can be made from the concrete experience (Kolb, 1984). In this stage of the cycle, the learner internally reflects upon feelings associated with the experience through different perspectives (Kolb, 1984). The third stage of the experiential learning cycle is abstract conceptualization (Kolb, 1984). This stage is the polar opposite of concrete experience within the cycle and follows reflective observation. This comprehensive stage of the cycle is where learners are able to create concepts and make sense of what occurred during the experience (Kolb, 1984). The fourth stage of Kolb's experiential learning cycle is active experimentation. This is on the transformation dimension on the opposite end from reflective observation (Kolb, 1984). In active experimentation, Kolb proposes that the learner is able to use concepts and theories developed from the previous stages to guide future actions, decision-making, and problem solving (Kolb, 1984).

Kolb's experiential learning theory provides insight into how adults learn, specifically through experiences. While simulation delivers a unique learning experience for nursing students, Kolb's theory offers validation of the importance of debriefing. A key feature of Kolb's theory that allows for guidance of debriefing with simulation is that a concrete experience alone cannot lead to learning; "something must be done with it" (Kolb, 1984, p. 42). This suggests that a simulation experience alone does not provide learning. Rather, it is during the debriefing afterwards where learning occurs through the next stages of the cycle.

The first stage of Kolb's experiential learning cycle can represent the simulation experience. The second stage of the cycle aligns with the reflection phase during debriefing.

Debriefing facilitators can guide this reflection stage by allowing students to address their feelings that were associated with the simulation experience and encourage students to consider other perspectives. Abstract conceptualization is an important stage of Kolb's experiential learning cycle that allows the students think abstractly about the experience of the simulation and what they learned from it, aligning with the analysis phase of debriefing. This leads to the last stage of the cycle, active experimentation (Kolb, 1984). The final stage of the cycle supports the final phase of structured debriefing, in which students integrate what was learned from the entire cycle into application of new knowledge or skills. A structured debriefing after simulation in nursing education should cover all aspects of Kolb's experiential learning cycle in order to maximize the students' learning outcomes and potentially increase the quality of their care to future patients.

Chapter Three

Methods

The purpose of this scholarly project is to determine whether implementation of a scripted debriefing tool in comparison to unscripted debriefing will result in better learning outcomes as perceived by a sample of undergraduate nursing students at a Midwestern university. The scripted debriefing tool, Debriefing Guide for Facilitators (Gum et al., 2011) was utilized. The scripted and unscripted debriefing sessions took place after a simulation using a sample of students who are in their third semester of an undergraduate nursing program.

Sample

A convenience sample of students within a Midwestern university BSN program was selected for the scholarly project. Inclusion criteria consisted of undergraduate nursing students, ages 18 years and older, who were enrolled in the third semester of the university's BSN program during their obstetric clinical rotation. The total sample size was 72. A sample size calculator was used to determine the minimum sample size necessary to obtain adequate power for the study. Using a confidence level of 95% and a 5% margin of error, it was determined that a minimum of 67 subjects were required. Therefore, a sample size of 72 was considered to be appropriate.

Project Approval

Institutional Review Board (IRB) approval by Northern Michigan University was obtained in fall of 2016, prior to collecting any data (see Appendix C). The IRB granted an expedited level of approval for this scholarly project because of the minimum level of risk to the scholarly project participants involved.

Design and Measures

A quasi-experimental design was used for this scholarly project. After scripted and unscripted debriefing sessions, a Likert-type survey that was developed by the student researcher, was used to measure students' perceptions of how well they met the learning objectives of the simulation. The survey questions were not tested for reliability or validity.

The simulation learning objectives were formulated by the course instructor and served as the first nine survey items. On the survey, the participants responded to the following statement "The OB post-partum hemorrhage simulation and debriefing session has enhanced my ability to" using a Likert scale with response options ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The learning objective-based survey items included the following: (a) "Apply thorough assessment techniques for a post-partum patient.", (b) "Communicate effectively with the patient.", (c) "Effectively work as a team.", (d) "Identify assessment findings as expected or unexpected.", (e) "Prioritize nursing care in an unfolding patient care scenario.", (f) "Identify and respond to changing patient status.", (g) "Appropriately use SBAR communication.", (h) "Knowledge of medications used in obstetrical situations.", and (i) "Properly administer medications."

A final survey item was included to assess students' perceptions of how the simulation and debriefing experience might affect the quality of future patient care that they will provide. Researchers throughout the literature suggest that properly executed simulations allows students to make connections, bridging the gap between theory and practice, and enhance self- confidence (Bland et al., 2011). However, there is a lack of empirical research demonstrating a transfer of learning from simulation to patient care (Bland et al., 2011). This survey item assesses students' self-confidence for future patient care following simulation and debriefing, adding important

information to the literature. The question stated, "*I feel that this simulation and debriefing experience will improve my future practice, positively affecting patient care."* See Appendix D for the survey.

Procedures

All students in their obstetrical clinical rotation at the university partake in a post-partum hemorrhage simulation. The simulation was designed by one of the OB clinical instructors who developed the simulation learning objectives. The OB faculty facilitate the simulation and debriefing. A high-fidelity patient birthing simulator was used: Noelle® S574.100 Tetherless Maternal and Neonatal Birthing Simulator (Gaumard Scientific, Miami, FL). This particular simulation was selected by the student researcher because of accessibility to a large number of students, the course instructor's willingness to participate, and the fact that the nursing instructors currently use unscripted debriefing methods.

Data were collected from one group of students using unscripted debriefing methods during the fall semester 2016. During the winter semester of 2017, data were collected from a different group of students who received scripted debriefing. The students participated in the OB post-partum hemorrhage simulation, which was carried out by two OB instructors. To ensure consistency of simulation and debriefing execution, the instructors performed the first simulation of the semester together. The instructors normally use unscripted, facilitator-led, debriefing that takes place after the simulation and focuses on a discussion of what happened during the simulation.

During the fall 2016 semester, immediately following the simulation and unscripted debriefing session, the researcher asked the students to participate in the scholarly project and distributed the Likert survey. The students were ensured anonymity and that their decision to

participate or not would not affect how they would be evaluated in the course. The students were not coerced into participating and were informed that they would not receive compensation for participation.

After the unscripted debriefing data were collected, the two OB instructors received an orientation on using the scripted debriefing tool, Debriefing Guide for Facilitators prior to the start of the winter 2017 academic semester (Gum et al., 2011). The orientation was provided by the researcher and entailed instruction and training for each phase of debriefing based on the Debriefing Guide for Facilitators tool. During orientation, the researcher assisted the instructors on developing appropriate questions to incorporate into the different phases of the debriefing script. Appropriate questions relate the simulation objectives to the different phases of debriefing. For example, in the analysis phase, major events are deconstructed and an appropriate question for this phase and scenario would be "How/what did you prioritize well and how could prioritization have gone better?" This relates the simulation objective *Prioritize nursing care in an unfolding patient care scenario* with the analysis phase recollecting questions "what went well*?"* and "what could have been better*?"* Additionally, key elements of the debriefing script were emphasized, such as asking open-ended questions in order to allow the students to reflect on their actions during the simulation as well as their reasoning behind thoughts and actions. After the orientation, the instructors reported that they felt comfortable using the tool.

During the winter 2017 semester, the instructors performed the same obstetric post-partum hemorrhage simulation with a different group of students and implemented the post-simulation debriefing session using the scripted tool with the assistance of the researcher. The researcher was available for support using the tool and made sure that key components of the

debriefing tool were utilized. Once the scripted debriefing session was completed, the students were asked by the student researcher to participate in the study and to complete the Likert survey. The paragraph below provides details about the simulation scenario.

Simulation scenario. The students arrive at the simulated post-partum hospital room directly after clinic on the OB unit at the local hospital. Students are informed that they are coming to the simulation lab to practice post-partum care in a controlled environment. The simulation begins with a brief report telling them that the patient had a ten-pound baby one hour ago. The students are not provided with any orders or patient information unless the information is requested by the students. The students begin the assessment and discover that Noelle is bleeding and has saturated multiple blue pads. They are expected to make phone calls to the physician, recognize the need for blood, administer Pitocin and Methergine, and appropriately administer CPR when Noelle goes into hypovolemic shock. The students may or may not save Noelle, depending upon their actions. The simulation usually takes about 20-30 minutes with another 20-30 minutes of debriefing which occurs in the same room as the simulation.

Data Analysis

The Mann-Whitney U statistical analysis test was used to compare medians of the total survey scores among the unscripted and scripted debriefing groups using IBM SPSS Version 24. This test was chosen because it tests for differences between two independent groups on a continuous measure. This non-parametric test assumes random samples and independent observations, meaning that "each case can only be counted once, they cannot appear in more than one category or group, and the data from one subject cannot influence the data from another" (Pallant, 2013, p. 222). All research materials and documents will be kept in a locked file cabinet and destroyed after seven years.

Chapter Four

Results

This chapter begins with a description of demographic and descriptive statistics. Next, statistical analysis results from the Mann-Whitney U Test will be discussed. Tables are provided that display the number of student responses to each question on the Likert survey and Mann-Whitney U test results. This chapter concludes with a discussion section that includes an analysis of the results, implications for future practice, strengths and limitations of the scholarly project, and recommendation for future research.

Demographic and Descriptive Statistics

There were 72 (*N = 72*) participants in the study and they were primarily White females. The majority of the students in this nursing program entered college shortly after graduating from high school and are in their early twenties, although some are older and are pursuing a post-baccalaureate degree. There were 33 participants in the control group ($n = 33$) and 39 participants in the intervention group ($n = 39$). There was 100% participation among both cohorts of students.

Unscripted debriefing. In the fall of 2016, 33 students received unscripted debriefing following the simulation. The median total Likert survey score was 46 out of a possible 50, indicating that the majority of the students felt that they had achieved the learning objectives. Table 1 displays the frequency of scores for each survey item in this group.

Table 1

Unscripted Debriefing: Frequency of Responses for each Likert Survey Item

Survey Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Applying assessment				14	19
2. Communication with patient			5	14	14
3. Teamwork			1	13	19
4. Identifying expected findings			2	10	21
5. Prioritizing				9	24
6. Responding to patient status				9	24
7. Use of SBAR		1	4	10	18
8. Obstetrical Medication knowledge			4	10	19
9. Medication administration			3	11	19
10. Future patient care				7	26

Note. Strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, strongly agree = 5

Scripted debriefing. In the winter of 2017, 39 students received post-simulation debriefing that was guided by the script that was entitled, Debriefing Guide for Facilitators (Gum et al., 2011). The median total Likert survey score was 45 out of a possible 50, indicating that the majority of the students felt that they had met the learning objectives. Table 2 displays the frequency of scores for each survey item in this group.

Table 2

Scripted Debriefing: Frequency of Responses for each Likert Survey Item

Survey Question Category	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Applying assessment			2	16	21
2. Communication with patient		1	2	20	16
3. Teamwork		1	1	18	19
4. Identifying expected findings			1	18	20
5. Prioritizing		1		12	26
6. Responding to patient status			3	12	24
7. Use of SBAR	1		2	19	17
8. Obstetrical Medication knowledge		1	2	21	15
9. Medication administration			4	19	16
10. Future patient care				3	36

Note. Strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, strongly agree = 5

Individual survey items.

All of the survey items were rated on a scale of 1-5 (*strongly disagree to strongly agree*) based on the following statement: "The OB post-partum hemorrhage simulation and debriefing session has enhanced my ability to." Item number 1 on the survey measured students' perceptions of how the simulation and debriefing session has enhanced their assessment abilities

on a post-partum patient. The survey item stated, "*Apply thorough assessment techniques for a post-partum patient."* In the unscripted group, 58% *(n* = 19) of participants *strongly agreed* and 42% *(n* = 14*) agreed w*ith the survey question. In the scripted group, 54% (*n* = 21) of participants *strongly agreed*, 41% (*n* = 16) *agreed* with the survey question, and 5% (*n* = 2) reported *neutral.*

Item number 2 on the survey measured students' perceptions of how the simulation and debriefing session has enhanced their ability to communicate with the patient. The survey item stated, "*Communicate effectively with the patient."* In the unscripted group, 42.4% *(n* = 14) of participants *strongly agreed,* 42.4% *(n* = 14*) agreed w*ith the survey question, and 15.2% (*n* = 5) reported *neutral*. In the scripted group, 41% (*n* = 16) of participants *strongly agreed*, 51% (*n* = 20) *agreed*, 5% (*n* = 2) reported neutral, and 3% (*n* = 1) *disagreed* with the survey question.

Item number 3 on the survey measured students' perceptions of how the simulation and debriefing session has enhanced their teamwork ability. The survey item stated, "*Effectively work as a team."* In the unscripted group, 58% *(n* = 19) of participants *strongly agreed*, 39% *(n* = 13*) agreed w*ith the survey question, and 3% (*n* = 1) reported neutral. In the scripted group, 49% (*n* = 19) of participants *strongly agreed*, 46% (*n* = 18) *agreed* with the survey item, 2.5% (*n* = 1) reported neutral, and 2.5% (*n* = 1) *disagreed*.

Item number 4 on the survey measured students' perceptions of how the simulation and debriefing session has enhanced their ability to identify expected findings. The survey item stated, "Identify assessment findings as expected or unexpected*."* In the unscripted group, 64% *(n* = 21) of participants *strongly agreed,* 30% *(n* = 10*) agreed w*ith the survey question, and 6% (*n* = 2) reported neutral. In the scripted group, 51% (*n* = 20) of participants *strongly agreed*, 46% (*n* = 18) *agreed* with the survey question, and 3% (n = 1) reported neutral.

Item number 5 on the survey measured students' perceptions of how the simulation and debriefing session has enhanced their ability to prioritize. The survey item stated, *"Prioritize nursing care in an unfolding patient care scenario."* In the unscripted group, 73% *(n* = 24) of participants *strongly agreed* and 27% *(n* = 9*) agreed w*ith the survey question. In the scripted group, 66.7% (*n* = 26) of participants *strongly agreed*, 30.8% (*n* = 12) *agreed* with the survey question, and 2.5% (*n* = 1) *disagreed* with the statement.

Item number 6 on the survey measured students' perceptions of how the simulation and debriefing session has enhanced their ability to respond to patients' status. The survey item stated, "*Identify and respond to changing patient status."* In the unscripted group, 73% *(n* = 24) of participants *strongly agreed* and 27% *(n* = 9*) agreed w*ith the survey question. In the scripted group, 61.5% (*n* = 24) of participants *strongly agreed*, 30.8% (*n* = 12) *agreed* with the survey question, and 7.7% (n = 3) reported *neutral*.

Item number 7 on the survey measured students' perceptions of how the simulation and debriefing session has enhanced their ability to use SBAR communication. The survey item stated, "Appropriately use SBAR communication*."* This was the only survey item to be rated *disagree* in the unscripted debriefing group and the only survey item rated *strongly disagree* in the scripted group. In the unscripted group, 55% *(n* = 18) of participants *strongly agreed*, 30% *(n* = 10*) agreed w*ith the survey question, 12% (*n* = 4) rated *neutral*, and 3% (*n* = 1) reported *disagree*. In the scripted group, 43.6% (*n* = 17) of participants *strongly agreed*, 48.7% (*n* = 19) *agreed* with the survey question, 5.1% (*n* = 2) reported neutral, and 2.6% (*n* = 1) *strongly disagreed* with the statement.

Item number 8 on the survey measured students' perceptions of how the simulation and debriefing session has enhanced their knowledge of obstetrical medications. The survey item

stated, "*Knowledge of medications used in obstetrical situations."* In the unscripted group, 58% *(n* = 19) of participants *strongly agreed,* 30% *(n* = 10*) agreed w*ith the survey question, and 12% (*n* = 4) reported neutral. In the scripted group, 38% (*n* = 15) of participants *strongly agreed*, 54% (*n* = 21) *agreed* with the survey question, 5% (*n* = 2) reported *neutral,* and 3% (*n* = 1) *disagreed*.

Item number 9 on the survey measured students' perceptions of how the simulation and debriefing session enhanced their medication administration ability. The survey item stated, "*Properly administer medications."* In the unscripted group, 58% *(n* = 19) of participants *strongly agreed*, 33% *(n* = 11*) agreed w*ith the survey question, and 9% (*n* = 3) reported *neutral*. In the scripted group, 41% (*n* = 16) of participants *strongly agreed*, 49% (*n* = 19) *agreed* with the survey question, and 10% (*n* = 4) reported *neutral.*

Item number 10 on the survey measured students' perceptions of how the simulation and debriefing session affected the quality of their future patient care. The survey item stated, "*I feel that this simulation and debriefing experience will improve my future practice, positively affecting patient care."* Among all of the participants, there were no scores less than 4 (*agree*) in either group. In the unscripted group, 79% *(n* = 26) of participants *strongly agreed* and 21% *(n* = 7*) agreed w*ith the survey question. In the scripted group, 92% (*n* = 36) of participants *strongly agreed* and 8% (*n* = 3) *agreed* with the survey question.

Inferential Statistical Analysis

Total scores from the Likert survey were tallied from each survey with a maximum possible score of fifty (score of 5 times 10 questions). A Mann-Whitney U Test was used to compare total scores between the surveys following both unscripted and scripted debriefing. No

significant differences between the scripted and unscripted groups were revealed in respect to student perceptions of having met learning outcomes (p = .423). See Table 3. Further, the Mann-Whitney U Test was used to compare each individual survey item. No significant differences between the scripted and unscripted groups were revealed among the individual survey items. See Table 4.

Table 3

Median Survey Scores and Mann-Whitney U Test Results for Unscripted and Scripted Debriefing

	Mdn	*U*	*p*	*r*
Unscripted Debriefing	46			
Scripted Debriefing	45	573	.423	.09

Table 4

Individual Survey Items Mann-Whitney U Test Results: Unscripted vs Scripted

Survey Item	*U*	*p*	*r*
1. Appling assessment	605.5	.621	.06
2. Communication with patient	626	.827	.03
3. Teamwork	582	.429	.09
4. Identify expected findings	577	.388	.10
5. Prioritizing	600	.539	.07
6. Responding to patient status	558	.241	.14
7. Use of SBAR	604	.622	.06

8. Obstetrical medication knowledge	545.5	.220	.14
9. Medication administration	543.5	.210	.15
10. Future patient care	556.5	.101	.19

Discussion

The purpose of this scholarly project was to determine if using a script to structure debriefing post-simulation would lead to improved learning objectives compared to unscripted debriefing sessions as perceived by a sample of undergraduate nursing students at a Midwestern university. Ultimately, the goal was to optimize post-simulation debriefing in order to translate learning outcomes to improve patient care. The script used in this scholarly project was the Debriefing Guide for Facilitators by Gum et al. (2011). In respect to demographic characteristics, the participants were all White students and mostly females in their early twenties. These are common demographics for this Midwestern nursing program. Although, despite having an adequate sample size, this scholarly project could have benefited from a more diversified sample.

The Likert survey was designed by the student researcher and included 10 questions, nine of which were based on the simulation learning objectives. A perfect score of 50 would indicate all questions were rated *strongly agree*. Therefore, with the median scores of 46 and 45, most participants reported that they *agreed* or *strongly agreed* with all of the survey items, indicating they perceived that they had met the learning objectives. The unscripted group provided more ratings in the *neutral* category in comparison to the scripted debriefing group. However, the unscripted group provided a lower number of *disagree* and *strongly disagree* ratings in

comparison to the scripted group. One possible explanation for this is that in the scripted debriefing group, there was one participant who rated almost every survey item poorly, which accounts for all of the *strongly disagree* and *disagree* ratings in that group.

Although survey item 10, "*I feel that this simulation and debriefing experience will improve my future practice, positively affecting patient care."* was not directly related to the learning objectives of the simulation, the findings offer important information for nurse educators and the simulation community. An analysis of the results on this survey item revealed that students from both the scripted and unscripted groups reported improvement in their ability to care for future patients. This finding is consistent with INACLS researchers, Decker et al. (2013), who stated that "Debriefing promotes understanding and supports transfer of knowledge, skills, and attitudes with a focus on best practices to promote safe, quality patient care" (p. S27). Despite a lack in statistical significance between the scripted and unscripted groups ($p = .101$), 13% more participants in the scripted group reported they *strongly agreed* that the simulation positively affected their ability to care for future patients. The researcher feels this may be indicative of a positive impact of scripted debriefing, although further research is needed.

The Mann-Whitney U statistical analysis test was used to compare medians of the total survey scores among the unscripted and scripted debriefing groups. In respect to student perceptions of having met learning outcomes, there were no significant differences between the unscripted and scripted groups ($p = .423$). These findings are consistent with Mariani et al. (2013) who studied structured debriefing compared to unstructured debriefing and nursing students' clinical judgement abilities in simulation and did not find statistically significant differences between the groups. However, through focus group interviews, Mariani et al. (2013)

found that students perceived debriefing as beneficial despite the method, but structured debriefing enhanced learning.

Faculty feedback. Some comments from the faculty using the script included that it helped to keep them on track during debriefing. This is consistent with what other researchers have found (Sawyer et al., 2016). Another comment included positive remarks about the summary phase of the script where each student was asked to state one thing that they would do differently in a future real-life similar situation. The faculty stated that they liked hearing the reflective answers from each student, as that ensured learning occurred and provided closure to the simulation and debriefing session. Other researchers have also found that structuring debriefing with a script encourages reflection (Mariani et al., 2014). Further, Cheng et al. (2016) report the significance of the summary phase of debriefing, explaining that if executed properly in a learner-oriented manner, the facilitator can verify that the students have "received and assimilated" the learning objectives (p. 424).

Implications for Practice

Following the landmark report, *To Err is Human: Building a Safer Health System,* the Institute of Medicine has recommended simulation training for healthcare professionals as a strategy to improve patient safety (Kohn et al., 2000). Human error can be mitigated through use of simulation, especially in high-stress situations (Kohn et al., 2000). The recommendation for simulation use expands to all healthcare professionals, emphasizing teamwork and fluid interdisciplinary communication (Kohn et al., 2000). Since the release of the report, there has been a substantial increase in simulation practice (Dufrene & Young, 2014; Lopez, 2017). While there is no defined best method of post-simulation debriefing, there is a growing body of

evidence suggesting that structured debriefing promotes learning and potentially translates to improved patient care (Decker et al., 2013).

Strengths and Limitations

It can often be a challenge for simulation researchers to obtain a large enough sample size because each simulation usually has very few participants. A strength of this scholarly project is the large sample size ($N = 72$), in relation to the minimum recommended sample size of 67. Another strength is the use of a quasi-experimental design. Additionally, the simulation allowed undergraduate nursing students the opportunity to experience a high stress patient situation in a controlled environment. Further, all participants felt that their ability to care for future patients had improved following the simulation and debriefing sessions.

There are a few limitations to note. The scholarly project utilized one simulation for students in their obstetrical clinical rotation. Although using one specific type of simulation ensures consistency, it may not provide generalizability for other types of simulation. Using a convenience sample was a limitation as the sample was limited to one university. The survey was developed by the student researcher and has not been tested for reliability or validity. The sample was homogenous, primarily White females in their early twenties. Another limitation within this scholarly project is that not all students were taught the post-partum hemorrhage theory content prior to the simulation, making student preparedness another variable. Finally, the process of orienting the faculty to the debriefing script could have been more thorough by running a trial simulation and debriefing session so they could practice using the tool prior to data collection.

Recommendations for Future Research

For future studies, students could be evaluated using a pre-post simulation knowledge assessment tool to determine learning outcomes rather than measuring students' perceptions of how well they met the learning objectives. Examples of validated objective tools that other researchers have used include a multiple choice question test (MCQ), Lasater Clinical Judgement Rubric (LCJR), Learning Environment Preferences (LEP), Health Sciences Reasoning Test (HSRT), Behavior Assessment Tool (BAT), and the Clinical Performance Tool (CPT) (Cheng et al., 2013; Dreifuerst, 2012; Mariani et al., 2013; Secomb, et al., 2012). Otherwise, in addition to measuring students' perception with a Likert scale, adding a qualitative portion of the study could be helpful in gaining more information about the student perceptions. This method would be similar to Coutinho et al. (2016), who studied nursing students' perceptions of structured versus unstructured debriefing in a qualitative study where the students answered specific questions about what they thought of structured debriefing. Finally, although it would be difficult to conduct, studies are needed to measure patient outcomes related to simulation and debriefing methods.

Conclusion

The purpose of this scholarly project was to determine if using a script to structure debriefing post-simulation would lead to improved learning objectives compared to unscripted debriefing sessions as perceived by a sample of undergraduate nursing students at a Midwestern university. Results did not demonstrate statistical significance. However, a greater percentage of students in the scripted debriefing group reported that they felt the simulation and debriefing experience improved their future practice as nurses; thus, potentially positively affecting patient care. This finding signifies the value in simulation and scripted debriefing, and how it may

translate to practice. The Institute of Medicine recommends simulation training in healthcare in order to improve the quality and safety of patient care (Kohn et al., 2000). The INACSL provides guidelines to standardize best practice simulation techniques and promotes the use of structuring debriefing. This scholarly project adds to the current debriefing literature and may be considered as a means to optimize simulation for improved student learning outcomes which may lead to increased patient safety and quality of care.

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Appendix A

Permission to use the Debriefing Tool

Gum Lyn to you

Aug 8, 2016

HI Mary,

Firstly, I am glad to hear that the tool is being used. Yay!

Secondly, great to hear that you are doing a project on simulation debriefing, something that I am also passionate about.

Next to answer your questions. Sim TRACT came first. This was a result of the research that was undertaken - it was developed from the debriefing experiences in the research project and then applying the findings to theory. Following this I was asked to develop some shared tools for Country Health South Australia (State Government) so I basically utilized the Sim TRACT tool to create something useable for clinical educators in health settings/hospitals. The tool is publically available for use - but to acknowledge it in your project you could cite - Developed by Flinders University Rural Clinical School for Country Health South Australia, adapted from Gum, L., Greenhill, J., & Dix, K. (2011). Sim TRACT™: A Reflective Conceptual Framework for Simulation Debriefing. Journal of Transformative Education, 9(1), 21-41.

Hope that helps and good luck with your project.

Lyn

Appendix B

Debriefing Guide For Facilitators

Debriefing should be undertaken as soon as possible following the simulation scenario. It is recommended that the time taken for debriefing should be at least twice as long as the time it took to undertake the scenario.

Debriefing should take place in another room which is private and comfortable. The facilitator should not sit at the front, but rather be a part of the group circle. All participants should be included in the group circle.

It will be most important to let the learners do the talking – the role of the facilitator is to do less talking than the learners!

A tool is attached to this guide to assist facilitators of any profession with the steps required to debrief successfully. Let's have a closer look at this tool.

Create a **safe** and respectful environment All participants understand confidentiality

The importance of a safe and non-threatening environment is required to promote a positive learning environment. As explained in the Introduction to Simulation Learning, it will be important to remind participants at the start of the debriefing that this conversation should remain confidential between the participants in the room.

Reaction Phase (Experience and Impact)
Participants are given time to **vent** Encourage to share experiences and views • What were your impressions of the simulation experience?
Acknowledge, support and encourage discussion of **emotions** • How did you feel? • How did you feel about the team's performance?

The first phase of debriefing involves some personal 'venting' of emotions, to help participants work through their own feelings and participation in the scenario. The facilitator will need to be comfortable to let this happen, and be patient with the

participants as new learners may take longer to feel comfortable in doing this. If this stage is skipped over, learners might remain 'stuck' on an issue and not be able to move forward to the next phase of debriefing. Get participants thinking about themselves as a team, and ask them how they thought the team performed.

Analysis Phase (Recollection)
Major events are **deconstructed**: • What happened? • What was done well? • What could have been better? Discuss - roles - equipment - identification of problem - communication (timing, information)
Promote **reflection** by: • Use of video playback being used to prompt discussion and reflection • Fostering self-reflection

In the next phase, time is needed to deconstruct what took place. This is where learners can make sense of what happened; pick up on what went wrong or what went well. The facilitator should try NOT to give any opinions at this point, and allow the learners to work through it themselves.

Some cues are provided in the tool to help the facilitator to cover all aspects of the scenario, for example role clarity and if equipment was used or gathered correctly, how information was gathered and communicated to each other and the patient.

Reflection is an important part of this phase. The facilitator might need to ask open-ended questions to get them thinking about their own roles as well as their team performance. Asking participant to explain or clarify something they did is always useful. This is preferable to telling participants what they did wrong.

Consolidation Phase (Integration and Closure)
Application of learning • Relevance • What has been learned • Transfer to clinical settings • What if anything would you change / do differently? (own practice/work environment)

- Revisit emotions
- Lessons learnt
- New goals

The Consolidation phase is the final phase of the debriefing process. Here, the participants can apply what they learnt in the simulation and debriefing discussion. To help the learners to do this, the facilitator will ask questions like what they would differently if they had the opportunity to do the scenario again. Give each participant an opportunity to say what they might change in their practice as a result of the scenario. This gives learners an opportunity to learn from others and explore options that might relate to their own clinical practice.

The facilitator can assist to wrap up the debriefing by summarising lessons learnt or articulating new goals. End on a positive note and thank all the participants for their commitment and participation.

Please find below

1) Debriefing Framework Tool

This is for facilitator to use during a debriefing, to provide a structured guide to the order of debriefing and reminder of questions to ask or cues to move into the next phase.

*When citing/using this tool, please acknowledge Gum LF, Greenhill J and Dix K. 2012

2) A Debriefing Reflection Tool – This tool gives facilitators the opportunity to reflect on their debriefing skills post simulation-debriefing, so they can self-reflect on how the debriefing went.

Debriefing Framework Tool*		
Debriefing Phases[1]	**Yes/No**	**Notes**
• Create a **safe** and respectful environment • All participants understand confidentiality		
Reaction Phase (Experience and Impact)		
Participants are given time to **vent** Encourage to share experiences and views • What were your impressions of the simulation experience?		
Acknowledge, support and encourage discussion of **emotions** • How did you feel? • How did you feel about the team's performance?		
Analysis Phase (Recollection)		
Major events are **deconstructed**: • What happened? • What was done well? • What could have been better? Discuss - roles - equipment - identification of problem - communication (timing, information)		
Promote **reflection** by: • Use of video playback been used to prompt discussion and reflection • Foster self-reflection		
Consolidation Phase (Integration and Closure)		
Application of learning • Relevance • What has been learned • Transfer to clinical settings • What if anything would you change / do differently? (own practice/work environment) • Revisit emotions • Lessons learnt • New goals		

Appendix C

Memorandum

TO: Mary Kidd
School of Nursing

CC: Melissa Romero
School of Nursing

FROM: Dr. Robert Winn
Assistant Provost/IRB Administrator

DATE: September 13, 2016

SUBJECT: IRB Proposal HS16-793
"Implementation of a Scripted Debriefing Tool in Simulation-Based Nursing"
IRB Approval Dates: 9/13/2016 - 9/13/2017
Proposed Project Dates: 9/13/2016 - 3/1/2017

Your proposal "Implementation of a Scripted Debriefing Tool in Simulation-Based Nursing" has been approved under the administrative review process. Please include your proposal number (HS16-793) on all research materials and on any correspondence regarding this project.

Any changes or revisions to your approved research plan must be approved by the Institutional Review Board (IRB) prior to implementation.

If you do not complete your project within 12 months from the date of your approval notification, you must submit a Project Renewal Form for Research Involving Human Subjects. You may apply for a one-year project renewal up to four times.

All forms can be found at the NMU Grants and Research website:
http://www.nmu.edu/grantsandresearch/node/102

Appendix D

Post Simulation Likert Scale Survey

Instruction

Please rate the following statements on a scale of 1-5:

The OB post-partum hemorrhage simulation and debriefing session has enhanced my ability to:

	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1. Apply thorough assessment techniques for a post-partum patient					
2. Communicate effectively with the patient					
3. Effectively work as a team					
4. Identify assessment findings as expected or unexpected					
5. Prioritize nursing care in an unfolding patient care scenario					
6. Identify and respond to changing patient status					
7. Appropriately use SBAR communication					
8. Knowledge of medications used in obstetrical situations					
9. Properly administer medications					
10. I feel that this simulation and debriefing experience will improve my future practice, positively affecting patient care					

HS16-793