THE DEVELOPMENT OF A DEBRIEFING PRACTICE GUIDE FOR HIGH

FIDELITY SIMULATION-BASED LEARNING IN NURSING EDUCATION

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Abstract

Background: Nurse educators need clear, structured debriefing practice guidelines for high fidelity simulation-based learning to help students translate knowledge into practice. **Purpose**: The purpose of this practicum was to develop a debriefing practice guide for high fidelity simulation-based learning in nursing education based on the standards of best practice for debriefing and the PEARLS framework for debriefing guidelines. **Methods**: An integrative literature review and environmental scan was conducted and consultations were held with nurse educators from three Canadian schools of nursing. The findings from these three methods were used to inform the development of the High Fidelity Debriefing Practice Guide for nurse educators. **Results**: The High Fidelity Debriefing Practice Guide for nurse educators was developed. **Conclusion**: This practicum project created a tool to help nurse educators select an appropriate debriefing approach and strive for consistency in debriefing practices in high fidelity simulation-based learning in nursing education.

Key Words: debriefing, feedback, high fidelity simulation debriefing and nursing education

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Introduction

Debriefing is a common practice in nursing education but there is a lack of clear, structured debriefing guidelines for nurse educators using high fidelity simulation based education (Cheng et al., 2016). Debriefing after high fidelity simulation promotes knowledge, comprehension and critical analysis of new information (Neil & Wotton, 2011). During debriefing students explore, analyze, reflect, and assimilate new knowledge and validate their emotional experiences to improve their performance in the clinical setting (Wotton et al., 2010). The International Nursing Association for Clinical Simulation and Learning (INACSL) have developed standards of best practice for debriefing in simulation-based learning which can be applied to high fidelity simulation education. Also, the **P**romoting **E**xcellence **A**nd **R**eflective **L**earning in **S**imulation (PEARLS) framework is one practical structured approach that could be applied when developing debriefing guidelines for simulation-based learning (Cheng et al., 2016).

The purpose of this practicum was to apply the INACSL (2016) standards of best practice for debriefing in simulation and utilize the **P**romoting **E**xcellence **A**nd **R**eflective **L**earning in **S**imulation (PEARLS) framework to develop a High Fidelity Debriefing Practice Guide for nurse educators. This report provides an overall summary of the practicum project including an overview of the methods, the development process, key characteristics of the debriefing guideline, the application of advanced nursing practice competencies and the next steps for the implementation and evaluation of the guide.

Overview of Methods

In this practicum project, four methods of data collection were utilized. First, an extensive literature review was conducted using multiple databases to examine current high fidelity debriefing practices and debriefing frameworks in nursing education (Appendix A). Second, consultations were completed with five nurse educators from three nursing education programs who were experienced with debriefing in high fidelity simulation (Appendix B). Third, an environmental scan was completed to assess and analyse information on existing local or national debriefing guidelines for nurse educators using high fidelity simulation (Appendix C). Finally, the outcomes of the aforementioned reports assisted in developing the High Fidelity Debriefing Practice Guide for nurse educators (Appendix D). The following sections will discuss details of these methods and how they helped to accomplish the goals and objectives of this practicum.

Literature Review Summary

The objectives of the literature review were to review and examine the existing literature regarding current debriefing practice guidelines for high fidelity simulation-based learning in nursing education and explore the PEARLS framework as a preferred approach for developing debriefing guidelines for high fidelity (Appendix A). An initial search of Google Scholar databases focused on scholarly research in peer-reviewed journals. An in-depth review was conducted by searching six databases: PubMed, CINAHL, Nursing and allied health database, Cochrane Database of Systematic Reviews, SAGE research methods, and ProQuest Central. All articles were in English and published from the year 2008 onwards. The following key terms were used to start the

search: debriefing best practices, simulation debriefing, and simulation-based nursing education. The phrase of "high fidelity simulation" and "debriefing," resulted in 6800 studies. Changing the phrase to "high fidelity simulation debriefing" and "nursing education" refined the search to twenty-seven research articles. Titles and abstracts were scanned to determine if the article was relevant and appropriate to be included in the literature review.

Only seven research articles were found that reflected the subject of the review, debriefing guidelines for high fidelity in nursing education. Those studies included experimental and quantitative designs with one comparative crossover randomized controlled trial and two experimental designs (Chronister & Brown, 2012; Grant et al., 2014; Shinnick et al., 2011); three of the studies were qualitative designs including one mixed method evaluative study (Bussard, 2016; Coutinho et al., 2016; Wotton et al., 2010); and one study was a literature review (Neil & Wotton, 2011). The review revealed that there was limited evidence for the existence of structured debriefing practice guidelines for nurse educators using high fidelity simulation, which validated the need for this practicum project.

A review of the literature also revealed that one framework that is commonly used by nurse educators to develop debriefing practices for simulation-based education is the **P**romoting **E**xcellence **A**nd **R**eflective **L**earning in **S**imulation (PEARLS) framework (Bajaj et al, 2018; Cheng et al., 2016; Eppich et al, 2015). The PEARLS framework is a blended approach to debriefing that merges various debriefing strategies to customize the post scenario discussion based on the learner's learning style, learning objectives, amount of time allocated for learning, and faculty experience. Although no literature could be

found that applied the PEARLS framework to guidelines for debriefing in high fidelity it was determined to be an appropriate framework for the development of the High Fidelity Debriefing Practice Guide.

Consultation Summary

The objectives of the consultations with key informants were to identify factors that would impede or facilitate effective debriefing practices in high fidelity simulation, compare and analyze effective methods for debriefing and acknowledge the perceptions of nurse educators related to debriefing practices in high fidelity simulation (Appendix B). Consultations occurred with five nurse educators who had extensive experience with high fidelity simulation in nursing education at Kwantlen Polytechnic University, Langara College and Douglas College in British Colombia, Canada. Each key informant agreed to participate in the consultation process via face-to-face interview or telephone.

Findings from the consultations with nurse educators revealed that they reported that they had a good understanding of the definition of debriefing in simulation but were less familiar with specific debriefing practices for high fidelity simulation-based education. Key informants discussed the factors that were impeding effective debriefing practices in high fidelity simulation including: time constraints, large groups of students, lack of experience in high fidelity simulation, limited funding for faculty to attend simulation workshops, no simulation coordinator to provide guidance and support and no structured guidelines for debriefing in high fidelity. Some of the facilitating factors supporting effective debriefing practices in high fidelity included: access to high fidelity technology (e.g. human patient simulator), experience with debriefing, and education for

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nurse educators on debriefing in high fidelity simulation. Consultations with these key

informants provided valuable insight into the factors that can impede or facilitate

effective debriefing practices in high fidelity simulation. Key informants confirmed the

need to develop clear, structured debriefing guidelines for high fidelity simulation. They

also provided the author with an opportunity to acknowledge the perceptions of

experienced nurse educators related to debriefing practices in high fidelity simulation.

Environmental Scan Summary

The objectives of the environment scan included reviewing online websites and other

educational resources to identify and acknowledge best standards of practice for

simulation-based debriefing in nursing education and apply those resources to the

development of debriefing guidelines for high fidelity simulation (Appendix C). The

environmental scan assessed and analysed information on existing local or national

debriefing guidelines or resources for nurse educators. Three resourceful documents and

an online webinar were found in the environmental scan that helped to create the

guidelines for this practicum project: the INASCL's (2016) standards of best practice for

debriefing in simulation as assimilated within the NLN Debriefing Across the Curriculum

document; Colette Foisy Doll's (2017) guide for facilitating simulation based-learning

and Elizabeth's Horsley's (2017) webinar. This environmental scan helped the author to

identify and acknowledge the best standards of practice for simulation-based debriefing

in nursing education and apply those resources to the development of the High Fidelity

Debriefing Practice Guide for nurse educators.

High Fidelity Debriefing Guide for Nurse Educators

The High Fidelity Debriefing Guide developed for this practicum was designed for nurse educators using high fidelity simulation in nursing education (Appendix D). The debriefing guide includes a detailed description of the PEARLS framework while addressing its application in a debriefing checklist. The following section will provide a brief summary of the guide's key features including the five phases of debriefing: setting the scene, participant reactions, description of the learning experience, analysis of the experience and application or summary of the experience.

The debriefing guideline contains a checklist that is colorfully displayed in a two-page table that can be photocopied and brought to the debriefing session. Setting the scene starts with preparing a debriefing script to guide the process and explain how a "safe environment" for learning will be created. In the reactions phase, students to express their thoughts and feelings about the scenario by responding to the question, "How is everyone feeling?" This phase is particularly important in high fidelity simulation as the cases are often based on high acuity care that can evoke emotional responses e.g. cardiac arrest, anaphylaxis. In the description phase, educators and learners create a shared understanding of the main learning objectives of the simulation. Students confirm that they understand the purpose of the simulation and everyone has a shared understanding of the learning objectives.

In the analysis phase, nurse educators help the students' transition from a description of the simulation to an analysis of their performance. The PEARLS framework suggests three strategies that can be used to analyze student performance

including: (1) learner-self assessment, (2) focused facilitation (e.g., evaluation rubric), and (3) providing information (e.g., policies and procedures). The educator can select two or three of these strategies to help guide the analysis phase. Finally, in the summary and application phase, educators help to verify whether the students were able to meet the learning objectives and summarize the main take home messages from the simulation.

The development of the High Fidelity Debriefing Practice Guide for nurse educators was based on the findings from the comprehensive review of the literature; consultations with key informants and an environmental scan. This practicum project applied the INACSL (2016) standards of best practice for debriefing to high fidelity simulation and developed the High Fidelity Debriefing Practice Guide for nurse educators using the PEARLS framework to developing debriefing guidelines.

Advanced Nursing Practice Competencies

The Canadian Nurses Association (2008) identifies four competencies for advanced nursing practice (ANP), which include clinical competencies, research competencies, leadership competencies and consultation and collaboration competencies. Acquiring ANP competencies has been a focus throughout this graduate program with many opportunities to develop and strengthen competencies. The following is a discussion of activities as examples that demonstrate the achievement of each of the advanced nursing competencies.

Clinical Competencies

This practicum project provided an opportunity to enhance clinical competencies by developing the High Fidelity Debriefing Practice Guide for nurse educators "based on

needs, priorities, and organizational resources," (CNA, 2008, p. 23). The need for the

High Fidelity Debriefing Practice Guide for nurse educators was identified by key

informants and validated during consultations with experienced nurse educators. This

demonstrated advanced clinical competencies by identify a learning need for nurse

educators and then developing the guidelines based on that need. The development of the

guide also took into consideration the organizational needs of nurse educators by

developing a guide that is self directed, easily reproduced and low cost for the

organization.

Research Competencies

An APN is able to demonstrate research competencies when he or she is able to

generate, analyse, and utilize research findings (CNA, 2008). One way that an APN can

accomplish this is through critiquing, interpreting, applying and disseminating research-

based findings (CNA, 2008, p. 24). This competency was demonstrated in this project by

conducting an extensive literature review prior to developing the High Fidelity

Debriefing Practice Guide for nurse educators. The selected articles were critiqued using

the Public Health Agency of Canada's critical appraisal toolkit (2014). The results of the

research articles were then utilized in the educational resource. This an example of how

the research competency was demonstrated in this practicum.

Leadership Competencies

Advanced leadership competencies were displayed during this project by

becoming an "agent of change, consistently seeking effective new ways to practice, to

improve the delivery of care, to shape their organizations and to influence health policy"

(CNA, 2008, p. 24). Identifying the need for debriefing guidelines for high fidelity simulation and creating those guidelines demonstrated leadership by seeking a new way to practice and improve nursing education. Leadership was also demonstrated during the development of the guide by taking control of promoting change in the current nursing curriculum for high fidelity simulation based learning. The development of the High Fidelity Debriefing Practice Guide for nurse educators has demonstrated an ability to embrace leadership and start the change process.

Consultation and Collaboration

An APN demonstrates consultation and collaboration by communicating with members of the interdisciplinary team across an organizational, national and international level (CNA, 2008). An APN can consult and collaborate with health care members to develop quality improvement and risk management strategies (CNA, 2008). This competency was demonstrated in this practicum through consultations with experienced nurse educators across three different nursing education institutions to understand their perceptions of ineffective and effective debriefing practices in high fidelity simulation. It was also demonstrated during the development of the Guide as collaboration occurred with nurse researchers as the guide was developed.

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Implementation and Evaluation of the Guide

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The outcome of this practicum project was the development of the High Fidelity Debriefing Practice Guide for nurse educators. The next steps will involve the dissemination, implementation and evaluation of the guide. To begin implementation of the High Fidelity Debriefing Practice Guide it could be sent to the key informants who

participated in this project for their feedback and comments and to make changes and revisions as required. After receiving feedback from key informants, the revised guide could be presented to nurse educators interested in high fidelity simulation during education sessions at provincial and national meetings or conferences.

An implementation plan for the High Fidelity Debriefing Practice Guide could include providing education sessions on the guide to all nurse educators working in high fidelity simulation-based learning. The education sessions should focus on a discussion of the guide and how to use the checklist. Nurse educators could then implement the checklist by following the phases as outlined and customizing the phrases and questions to suit the simulation. (e.g. timing of debriefing session and learning objectives). The checklist could then be photocopied and used during the simulation to guide the process. The fill-in-the-blanks could be used to customize the checklist to the learning experience and the check boxes could be used to keep the nurse educator focused on the priority domains. If a rubric for evaluation exists, it can be used during a focused facilitation approach to the analysis phase.

Evaluation of this High Fidelity Debriefing Practice Guide could proceed in two stages. First, verbal and written feedback from the key informants could be used to revise the guide prior to nurse educators using it in practice. Second, nurse educators could be asked to implement the guide and provide feedback to the author for revisions or changes. Educators would be encouraged to reflect and evaluate the contents and applicability of the checklist to their simulation and adjust the phrases and questions as needed. The "Comments/Notes" section could also be used to document the evaluation of the checklist and suggested revisions (e.g. more space for questions). These suggested approaches to

implementation and evaluation of the High Fidelity Debriefing Practice Guide could be part of an implementation and evaluation plan developed by nurse educators using debriefing in high fidelity simulation-based education.

Conclusion

The development of the High Fidelity Debriefing Practice Guide for nurse educators is the final product of this practicum project. This educational resource was developed using the findings from an extensive literature review, consultations with key informants in three nursing education institutions and an environmental scan of debriefing guidelines for high fidelity. The High Fidelity Debriefing Practice Guide includes an evaluation component within the checklist to make modifications to the guide or the process in order to enhance student-learning outcomes. This practicum project has provided an opportunity to demonstrate all four APN competencies including clinical competence, leadership, research and collaboration. It is hoped that implementation of the High Fidelity Debriefing Practice Guide for nurse educators will aide in providing the structure and support required for nurse educators to create a consistent and effective approach to debriefing practices in high fidelity simulation.

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Appendix A

Literature Review

Debriefing Practice Guidelines for High Fidelity

Simulation Based Learning in Nursing Education

The aim of this review was to examine the literature on current debriefing practice guidelines for high fidelity simulation-based learning in nursing education. An initial search of Google Scholar databases was conducted, focusing on scholarly peer-reviewed journals. Phrases such as "high fidelity simulation debriefing," resulted in 6800 studies. All articles were in the English language and published from the year 2008 onwards. Changing the phrase to "high fidelity simulation debriefing and nursing" refined the search to 27 research articles. The title and abstract of these studies were scanned to determine whether they were relevant and appropriate for the literature review. An in-depth review was done by searching six databases: PubMed, CINAHL, Nursing and allied health database, Cochrane Database of Systematic Reviews, SAGE research methods, and ProQuest Central. The following key terms were used in the search: debriefing, feedback, nursing student, high-fidelity simulation, simulation debriefing, and simulation-based nursing education. The search revealed that research on HFS debriefing is scarce. Only seven appropriate research articles were found that were reflective of the subject of the review. The review included experimental, quantitative designs including one comparative crossover randomized controlled trial (RCT) and two experimental designs (Chronister & Brown, 2012; Grant et al., 2014; Shinnick et al., 2011); three of the studies were qualitative designs including one mixed method evaluative study (Bussard, 2016; Coutinho et al., 2016; Wotton et al., 2010); and one study was a literature review (Neil & Wotton, 2011).

Inclusion and Exclusion Criteria

Studies were selected that explored HFS debriefing in undergraduate nursing education, included educator driven debriefing, comparisons of debriefing methods,

effective debriefing practices and frameworks for HFS debriefing. Studies were excluded

if the participants were post graduate nurses, nurses who worked in health care settings,

and articles that used standardized patients. For the purpose of this project, the emphasis

was on the use of HFS debriefing methods in nursing education. No restrictions were

placed on nursing school settings or geographical location of studies in an effort to

provide a more comprehensive review.

Background

Nurse educators need clear, structured debriefing practice guidelines for high-

fidelity simulation-based learning to help bridge the gap between nursing education and

practice. Debriefing, which occurs as a post-experience analysis phase in simulation

education, facilitates the process of nursing students exploring, analyzing, reflecting,

assimilating their critical thinking skills, and validating their emotional experience to

improve their performance in clinical settings (Neil & Wotton, 2011). The use of

debriefing as a process to analyze an experience originated in the military and was used

for strategizing future actions post missions and military exercises. Military personnel

also used debriefing for defusing traumatic events by discussing and reflecting in small

groups about past occurrences in order to develop stress-relieving strategies while

improving psychological well-being (Fanning & Gaba, 2007). Neil and Wotton (2011)

indicate that nurse educators who implement high fidelity simulation (HFS) debriefing

practices promote an experiential learning process, which is imperative for enhancing a

student's nursing knowledge comprehension to help form mental representations of

health problems through pattern recognition and to promote a critical analysis of new

information to guide and improve future clinical experiences (Neil & Wotton, 2011).

Open and reflective dialogue in debriefing encourages nursing students to interpret their experiences into applicable knowledge in clinical settings (Neil & Wotton, 2011).

Currently, debriefing in high fidelity simulation-based education is integrated into nursing education curriculum as a means of bridging theory and practice and enhancing nursing knowledge and skill development (Wotton et al., 2010). The International Nursing Association for Clinical Simulation and Learning (INACSL) has developed standards of best practice for debriefing, which can be used to develop a best-practice framework to guide HFS debriefing. In addition, the Canadian Association of School of Nursing (CASN) has made many educational resources available to support HFS based learning. However, many nurse educators employ different methods for debriefing and these practices are not always consistent across programs. This is partly due to the presence of novice and inexperienced educators, limited research on structured debriefing guidelines, and limited opportunities to assess the effectiveness in debriefing in HFS education (Cheng et al., 2016).

One framework that can help nurse educators develop debriefing practice guidelines for high fidelity simulation-based education is the Promoting Excellence and Reflective Learning in Simulation (PEARLS) framework (Bajaj et al., 2018; Cheng et al., 2016; Eppich & Cheng, 2015). The following integrated literature review will explore Cheng et al.'s (2016) PEARLS framework for debriefing facilitation and examine current debriefing practice guidelines for high fidelity simulation-based learning in nursing education.

High Fidelity Simulation-Based Learning and Debriefing

High fidelity simulation (HFS) is an innovative teaching strategy that is currently widespread in nursing education (Neil & Wotton, 2011). During HFS students engage in clinical scenarios that replicate real life scenarios. Simulated learning experiences range from low, medium, to high fidelity. High fidelity simulation involves the use of human mannequins that are computer-enhanced, and exhibit physiological responses to interventions (i.e., coughing, pupils react to light, chest expansion with respirations, fluctuations of vital signs, lung and heart sounds that are audible using a stethoscope, palpable pulses). Some mannequins are equipped with physical attributes that allow procedures such as urinary catherization, insertion of chest tubes, or emergency tracheostomy. Nurse educators sit behind a two-way mirror and control the programmed mannequin responses using a laptop The facilitator can also speak as the patient through a microphone that is connected to the mannequin to guide the simulation.

There are many benefits to using HFS in nursing education. HFS mannequins can mimic abnormal lung sounds and irregular heart sounds whereas a healthy patient cannot manifest abnormal vital signs or deteriorating heart or lung sounds. Nursing students are prompted to critically think and communicate in a simulated environment, which not only enhances their nursing knowledge and psychomotor skills but also strengthens their ability for effective decision making in practice settings (Bussard, 2016; Wotton et al., 2010). HFS also offers a safe learning environment that is comparable to a clinical setting and in which nursing students can focus and practice their skills without the external disruptions that would occur in a busy hospital environment (Neil & Wotton, 2011). The incorporation of HFS in the nursing curriculum is essential for preparing and transitioning new graduates into their future nursing careers.

Nonetheless, there are also limitations of HFS. High fidelity simulators are costly, require ongoing maintenance and may not be affordable or available for some teaching facilities. Krishnan, Keloth, and Ubedulla (2017) point out that scheduling and allocating enough time for HFS based learning is also difficult. Many schools have large student bodies and arranging the appropriate faculty to support a large group may not be feasible. Furthermore, poorly designed simulation can create negative learning experiences for students, if simulators cannot display physical changes of skin colour, and learner specific teaching is not possible in simulation-based teaching.

Debriefing with students after completion of a simulation can optimize the student's clinical knowledge, psychomotor skills, and provide a review his or her simulation performance (Neil & Wotton, 2011). Nurse educators guide and provide constructive feedback to students through reflective thinking exercises to bridge the gap between nursing theory and practice and to understand the various health concepts and learning objectives uncovered in the simulation scenario (Bussard, 2016). Through debriefing, students can critique, correct, and evaluate their clinical performance in an open dialogue (Neil & Wotton, 2011). The literature described two types of debriefing methods, which are oral face to face debriefing and video recording (Bussard, 2016; Chronister & Brown, 2012; Grant et al., 2014). However, there is minimal research that validates the effectiveness of the aforementioned debriefing methods and there are only a limited number of best-practice framework guidelines for simulation debriefing (Cheng et al., 2016). One of the few best practice frameworks for debriefing is the PEARLS approach.

The PEARLS Framework

The PEARLS framework is a blended approach to debriefing that merges various debriefing strategies to customize the post scenario discussion based on the learner's learning style, learning objectives, amount of time allocated for the HFS based learning, and to enhance faculty experience (Bajaj et al., 2018; Cheng et al., 2016; Eppich and Cheng, 2015). The debriefing process can overwhelm nurse educators and so Chang et al. (2016) developed this specific tool to help facilitate and guide educators in customizing their own debriefing practices (Bajaj et al., 2018). Educators can choose their preferred approach to discuss performance gaps, address the learning objectives and goals of clinical decision-making, increase nursing knowledge, and promote interprofessional collaboration (Foisy-Doll, 2017).

Standards of best practice guidelines for debriefing from the International Nursing Association for Clinical Simulation (2016) are highlighted within this structured framework or debriefing. Cheng et al. (2016) proposed that different strategies for debriefing can be classified into three broad categories, which are the following: (a) promoting learner self-assessment, (b) facilitating focused discussion to promote reflective learning, and (c) providing information in the form of directive feedback and/or focused teaching. By assimilating these three broad strategies, a blended debriefing approach is created where learners participate in an active and collaborative learner centered environment.

Debriefing Script

The PEARLS debriefing tool recommends educators create a scripted guide to be used before implementing the debriefing strategies. That script outlines to students how the educator plans to create a psychologically safe learning environment (Cheng et al.,

2016; Eppich and Cheng, 2015). The script addresses four areas including: (1) setting the scene for debriefing, (2) organizing the debriefing session to incorporate students' reactions followed by (3) describing the key elements of the scenario by using one of the debriefing approaches, and (4) probing questions that inspire educators to truthfully express their perspective about the clinical scenario (Cheng et al., 2016).

PEARLS Debriefing Framework

The debriefing process involves four distinct phases, namely reactions, description, analysis, and summary.

Reaction phase

Cheng et al. (2016) suggests starting the conversation with an open-ended question to allow students to express their initial thoughts and feelings. Follow up questions are also encouraged followed by silent time to prompt additional reactions. The authors encourage educators to acknowledge and validate the students' reactions as they surface, work towards understanding their triggered emotional responses, and end with summarizing the issues shared by the leaners before proceeding to the next phase (Cheng et al., 2016).

Description phase

Cheng et al. (2016) suggests that in this phase the educators and learners create a shared understanding of the main learning objectives of the scenario. Without discussing this phase, students may misdiagnose and misinterpret the learning objectives of the simulation. To avoid confusion, educators are advised to ask for confirmation between the student and ensure that everyone has a shared understanding of learning (Cheng et al., 2016).

Analysis phase

Cheng et al. (2016) introduces three types of strategies that educators can use to analyze student performance, namely learner-self assessment, focused facilitation, and providing information. Learner self-assessment strategies (i.e., what went well and what would the student improve and why, what was easy and what was challenging for the student?") are learner centred and can be used if the educator is limited with time or if participants were unable to express their thoughts and emotions during the reactions phase. As students provide feedback, educators are encouraged to emphasize positive behaviours (Cheng et al., 2016).

If time permits, a focused facilitation (e.g., advocacy-inquiry) approach can be utilized, in which educators can focus on selective problematic areas and initiate an in-depth discussion to resolve issues and provide feedback (Cheng et al., 2016). Educators focus on their observations, share their perspectives, and invite open inquiry to allow learners to discuss their rationale of action in the simulation. During the discussion, pros and cons of students' decision making and team behaviours are reviewed (Cheng et al., 2016).

Lastly, educators provide information while focusing on the solution to the problems raised in the scenario. Educators do most of the talking and provide direct feedback, especially when time is very limited, when students have poor insight, or when performance gaps are highly technical and teaching is required to offer clarity. Providing positive and constructive feedback and incorporating a "because" statement to address the reasons for change is suggested. If the learners have good insight, and if time is not limited, a learner led discussion is appropriate.

Summary phase

In the summary phase of debriefing, Cheng et al. (2016) suggest that students should be provided with an opportunity to share what they have learned in the scenario. Educators should focus on allowing the student(s) to indicate one or two statements that they had learned in the scenario. Without this phase, educators may not be able to verify if learners were able to meet the learning objectives. Alternatively, educators can also summarize by providing a brief review of the main take home messages especially if a student's synopsis does not align with the learning objectives. Therefore, it is important for educators to allocate sufficient time for this phase (Cheng et al., 2016).

Benefits of High Fidelity Simulation

Increased Knowledge

All seven studies indicated that increased knowledge was a common outcome in HFS debriefing (Bussard, 2016; Chronister & Brown, 2012; Coutinho et al., 2016; Grant et al., 2014; Neil & Wotton, 2011; Shinnick et al., 2011; Wotton et al., 2010). Two of these studies found significant results in knowledge enhancement. Shinnick, Woo, Horwich, and Steadman (2011) compared the impact of hands-on alone and hands-on high fidelity debriefing on heart failure clinical knowledge. High fidelity knowledge scores were initially lower from pre-test to first post-test (after the hands-on component in the simulation, $p<0.001$), however improved after debriefing ($p=<0.001$). Grant, Dawkins, Molhook, Keltner, and Vance (2014) compared the effectiveness of video assisted oral debriefing and oral debriefing alone after the HFS. Results of this study indicated that the students learned better with the combination of video assisted oral debriefing (mean score-6.62; SD= 6.07) than oral debriefing alone (mean score-4.23;

SD= 4.02). Lastly, the HFS survey in Wotton's (2010) mixed method study revealed that 97% of the students appreciated the usefulness of the knowledge gained from HFS debriefing.

Types of Debriefing Practices in Nursing

Oral debriefing (OD) and video assisted oral debriefing (VAOD) are common HFS debriefing practices used in nursing education Three studies compared the use of OD and VAOD and its effectiveness in increasing the students' knowledge and clinical judgement (Bussard, 2016; Chronister & Brown, 2012, Grant et al., 2014). Bussard's (2016) study revealed that the use of videos was more beneficial in enhancing the student's confidence, communication, decision making in clinical settings than oral debriefing alone. As previously mentioned, Grant et al.'s (2014) study coincided with Bussard's (2016) study, revealing that video assisted debriefing increased student performance. Nonetheless, the results of Chronister and Brown's (2016) RCT found a statistically significant improvement in both control and intervention group, but the intervention of the video assistance had a minimal impact on the student's skills performance and knowledge and higher retention of knowledge was discovered more in the verbal debriefing group (more time was used watching the video leaving less time for guided verbal discussion).

Supportive and Reliable Environment

A common theme in Neil and Wotton's (2011) literature review was that a supportive and trusting environment for students decreased feelings of anxiety and intimidation. In promoting a safe environment, educators took into consideration a student's background, culture, and his or her skills and abilities. In addition, the

establishment of trust between the student and the educator was also developed on the students' confidence in the educator's knowledge and expertise (Neil & Wotton, 2011).

Unstructured or Structured Framework

Using unstructured or structured debriefing frameworks was also a common theme (Coutinho et al., 2016; Neil & Wotton, 2011). Coutinho, Martins, and Periera (2016) explained that unstructured debriefing follows no specific format and educators can generally discuss what went right and wrong in the scenario and what students could do differently next time whereas structured debriefing requires the educator to guide students to reflect on the simulation experience in order to enhance their higher-order judgement and clinical reasoning. The authors encouraged the use of structured debriefing as it assisted in consolidating student knowledge and supported individual reflection practices. In addition, the authors stated that structured debriefing improved relationships and communication amongst team members. Neil and Wotton's (2011) literature review also discussed the theme of unstructured and structured debriefing practices and promoted structured debriefing, but did not reveal specific theoretical frameworks to help guide debriefing practices. Although Cheng et al.'s (2016) is a new theoretical framework that is suggested for HFS debriefing in this review, the need to explore additional frameworks and guidelines is noteworthy.

Duration of the Debriefing Phase

Two research articles described an effective time-span for debriefing (Neil & Wotton, 2011; Wotton et al, 2010). Neil and Wotton's (2011) study suggested that extended debriefing sessions will help the educators examine a student's overall

understanding of the simulation scenario. A debriefing period two or three times longer than the simulation scenario was advised by one author in the review however no specific suggestions were made as to the amount of time required for debriefing (Neil & Wotton, 2011). Wotton et al.'s (2010) study recommended a 20 minute debrief as adequate but encouraged a longer duration.

Limitations

There is a need for more experimental research with rigorous research methodology to study the impact of debriefing in high fidelity, comparing the effectiveness of various debriefing practices beyond video assisted verbal debriefing or oral debriefing (Bussard, 2016; Chronister & Brown, 2012; Grant et al., 2014; Neil & Wotton, 2011; Wotton et al., 2010). Overall, the common occurrence of a small study sample size, data collected at one time frame and conducted in only one nursing school also puts forth a need for further research, and a repeat of studies with more participants in order to verify findings (Bussard, 2016; Chronister & Brown, 2012; Coutinho et al., 2016; Grant et al., 2014; Wotton et al., 2010).

A majority of the studies did not recommend an ideal duration of debriefing and whether video debriefing or oral debriefing will continue to serve as an effective debriefing technique for HFS. This may be due to the lack of analytic research studies available to compare the effectiveness of each debriefing method. In Shinnick et al.'s 2011 study a confounding variable was found as students in the study were discussing the study content amongst each other despite signing a confidentiality agreement. This is important to note for further research, as it would be beneficial to conduct studies that take measures to control for this type of variable.

Conclusion

HFS debriefing is a key component in the nursing education (Shinnick et al., 2011). There is support from the literature that suggests that HFS debriefing is essential to increasing student knowledge and their confidence in clinical setting. Based on the results of this literature review, the PEARLS approach can be deemed appropriate for developing debriefing guidelines for HFS based learning. The inclusion of experimental studies is warranted along with testing Cheng et al.'s (2016) PEARLS framework to guide debriefing practices. Future research can focus on developing best practice debriefing guidelines for HFS through evidence-based research to support student success in all clinical settings.

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Author	Participants/Methods/Outcome Measures	Results	Debriefing Guidelines	Comments
Bussard, (2016) Design: Qualitative, interpretive description study	**Participants** -20 prelicensure nursing students from Regional Medical School of Nursing in Ohio -students had completed their first medical-surgical course in a diploma nursing program **Methods** -students participated in four progressive high-fidelity simulations (HFS) using the same patient and were videotaped in each scenario. -Scenario 1, 2, 3 took 20 minutes following a 20-minute oral debriefing session whereas scenario 4 was 40 minutes long following a 40 minute oral debriefing session -in the oral debriefing session students were asked to self reflect on action. -students watched their video recorded scenario within 1 week without the presence of faculty and completed a post study survey **Outcome Measures** -The National League for Nursing/Jeffries Simulation Framework was used to design, implement and evaluate scenarios -clinical judgement model (CJM) by Tanner (2006) guided the study and helped develop the survey questions -Nvivo10 qualitative computer software used for survey analysis	-four themes: confidence, communication, decision making, and change in clinical practice -self-confidence improved -communication was poor in scenario but improved -decision making guided patient care -videos were more beneficial	-self reflection video recorded HFS is beneficial for prelicensure nursing students to develop clinical judgement	*Quality of the study:* Medium *Strengths:* -perceptions and self reflection of the nursing students were explored in HFS -video recorded HFS improved overall clinical judgement for nursing students *Limitations:* -study was conducted in one school with a small sample size of 20 -one expert nurse ensured content validity of the survey -not cost effective

| Chronister and Brown (2012)

Design: comparative crossover RCT design | **Participants**
- convenience sample of 37 BSN (n=37) students
-89% women were recruited
-senior level students
Methods
- outcomes of skill quality, skill response time and knowledge retention were compared in video assisted debriefing versus verbal debriefing using a high-fidelity simulation
-students engaged in a cardiopulmonary arrest scenario
-utilized the nursing education simulation framework to evaluate learning knowledge, skill performance, critical thinking, student confidence, and learner satisfaction
Outcome Measures (tools were valid and reliable)
-Emergency response performance tool (ERPT) was used to measure skill performance on 19 indicators
-confidence measures were r-.87 and Cronbach's x=92 respectively
-faculty that used the ERPT were trained and ensure inter-rater reliability a three hour training and repeat recorded performances were evaluated by the faculty | -quality of skill and response times were faster for students in the video assist and verbal debriefing
-higher retention was seen in the verbal debriefing group (more time was used watching the video leaving less time for guided verbal discussion which affected knowledge retention) | -video assist and verbal debriefing together positively affects nursing skills and response time | *Quality of the study:*
Medium

Strengths:
- study indicated that verbal debriefing improved learning retention and skill performance than those that were not debriefed

Limitations:
-absence of other debriefing methods outside of video debriefing
-small sample size |

| Coutinho, Martins, and Periera (2016)

Design: qualitative study | **Participants**
-22 final year students of an undergraduate nursing degree at the nursing school of Coimbra in April 2012
-inclusion criteria was noted (attended the curricular unit of ER nursing, agreed to participate in the study and having attended the nine hours of classes of the curriculum unit of ER nursing)
Methods
-students perceptions of structured debriefing (SD) was analysed
-voluntary, anonymous and confidential questionnaire (9-open ended questions) was used
Outcome Measures
Content analysis was based on Bardin's methodology
-structured debriefing was developed focused on Kolb's experimental learning theory and Shon's debriefing for meaningful learning | -five categories emerged from the content analysis: concept, attributes, cognitive impact, psychosocial impact, and affective impact
-categories were grouped into two dimensions; perceptions of debriefing and impact of structured debriefing on the students
-SD allowed the students to consolidate and systemize their knowledge, reflect individually on the activities and their ideas.
-a closer relationship was formed with colleagues, facilitating improved communication | -structured debriefing (i.e., the proposed 4 stage debriefing: meeting, positive reinforcement, analysis and summary) | *Quality of the study:* Medium

Strengths:
- study was able to confirm that students believe that SD has a positive impact and significant cognitive, psychosocial and affective benefits

Limitations:
-small sample size
- composed of students from one nursing school |

Grant, Dawkins, Molhook, Keltner, and Vance (2014) Design: pre and post test two-group randomized quasi-experimental design	**Participants** -48 undergraduate nursing students from -students were randomized into guidance groups; video assisted oral debriefing or oral debriefing alone **Methods** -intervention group (video assisted): received two 60 min practice simulation sessions during the semester followed up with a review of the video during debriefing -control group (oral debriefing): also received two 60 min practice simulation sessions as the as the intervention group followed up with oral debriefing only -all students were given nursing roles during the simulation **Outcome Measures** (tools were valid and reliable) -clinical simulation tool data collection tool (CSET) was adapted to record the occurrence of behaviours related to patient, safety, communication among team members. -descriptive statistics (ANOVA) used to compare mean differences between the groups on behaviors	-no significant difference between the two groups on their total performance scores (p=0.11), however the video assisted oral debriefing mean score was higher (6.62; SD=6.07) than oral debriefing alone (4.23; SD=4.02). -no significant difference between the students' total nursing behavior scores (p=0.65)	-nurse educators may use either video assisted oral debriefing or oral debriefing	*Quality of the study:* Strong *Strengths:* - investigators were blind to study group and collected the final performance data *Limitations:* - composed of students from one nursing school -the collection of data one time

Neil and Wotton, (2011) Literature Review (Non experimental descriptive study)	**Sample** -seven articles from United States and two from Australia **Methods** -literature search from 2000-2010 -database used: Ovid, ProQuest, MEDLINE, Cumulative Index to Nursing and Allied Health Literature and Expanded Academic ASAP -analysed the literature on the use of simulation debriefing in nursing education and to recommend areas of further study.	-six main themes emerged from thematic analysis: structured or unstructured debriefing; faculty debriefing, a safe and trusting environment, use of probing and cuing questions, the best time to debrief, and allocation of adequate time for debriefing	-debriefing is central to student learning for high fidelity simulations -structured debriefing provides a better reflective and supportive environment to facilitate discussion and student engagement	*Quality of the study:* Medium *Strengths:* - debriefing confirmed central to high fidelity simulation *Limitations:* - scarcity of nursing research exploring debriefing methods -minimal suggestions for the development of structured debriefing

Shinnick, Woo, Horwich, and Steadman (2011) Design: experimental (two groups pre-test and post test design)	**Participants** -convenience sample of four cohorts of prelicensure nursing students (n=162) from 3 nursing schools -inclusion criteria: prelicensure nursing students in the same course at each school who had successfully completed instruction in care of heart failure (HF) patients -exclusion criteria: students or family members with HF **Methods** -study examined the impact of hands on alone and hands on plus debriefing on heart failure clinical knowledge -parallel heart failure knowledge tests were given at pretest, and after the hands on (post test 1) and debriefing (post test 2) stages of the heart failure simulation -experimental group: received the pretest first, then simulation (hands on experience), post test, then a 30 min debrief session and ending with a post test 2. The control group: received the pretest first following the post test 1, simulation (hands on experience), a 30 min debrief session and then ending with post test 2. **Outcome Measures** (tools were valid and reliable) -Heart failure clinical knowledge questionnaire -data analysis was done using SPSS 16	-HF knowledge scores decreased from pre test to post test (after the hands on, p<0.001) however they improved after debriefing (p=<0.001)	-debriefing should be emphasized in a standardized simulation learning experience -recommend a nonjudgment and nonthreatening reflective style	*Quality of the study:* Medium *Strengths:* - debriefing element is the most vital component for knowledge retention -adequate sample size -content validation of the questionnaire was done by the same three simulation experts *Limitations:* - confounding variable- students were discussing the content of the simulation despite confidentiality agreement -different resident faculty gave their cardiac lecture -emphasis of HF varied from school to school

| Wotton, Davis, Button and Kelton (2010)

Design: mixed method (evaluative study) | **Participants**
-convenience sample of third year nursing students (n= 300) enrolled in a clinical nursing course

Methods
-250-297 students participated in 3 high fidelity simulation scenarios
-after the 15-20mins of debriefing, students completed an evaluation form (11 standardized questions rated on a 5-point Likert-type scale)
-debriefing was based on reconstruction and perceptions of the processes and the knowledge they used or should have access throughout the scenarios

Outcome Measures
-SPSS software
-Krueger's (1994) framework | -high fidelity simulation was enjoyable (mean=94.7%) and challenging (mean = 92.4%) yet congruent with the concepts in the course
-feelings of confusion (31.5%) were interpreted as a natural component of the program solving process
- usefulness of knowledge gained from experience was 97%
-debriefing assisted in clarifying student perceptions knowledge and rationale for practice | -debriefing aides in error correction, reflection, and identification of clinical problems and promotes insightfulness
-more than 15-20 minutes for debriefing is recommended | *Quality of the study:* Medium

Strengths:
- survey demonstrated that high fidelity is beneficial for students to bridge theory into practice by enhancing their cognitive and autonomous skills

Limitations:
- gaps in research on the process, time required, and learning associated with debriefing is required
-attrition bias |

Appendix B

Consultation Report

Debriefing is a practice that allows nursing students to explore, analyze, assimilate their critical thinking skills and validate their emotional experience in a simulated-based learning environment, to improve their performance in practical situations. The overall aim of this practicum project is to develop structured debriefing practice guidelines for nurse educators to utilize in high fidelity simulation-based learning. This will be accomplished through completing an extensive literature review, obtaining consultations with experts in the field and performing an environmental scan on existing debriefing guidelines for nurse educators. It is essential to consult with key stakeholders such as nurse educators with expertise in simulation and acknowledge and consider their perceptions of effective debriefing practices, to help to develop practices guidelines for debriefing.

It is essential to explore the different variations of current practices from experts in nursing education simulation to compare and analyze effective and non-effective methods for debriefing. Feedback obtained from nurse experts in clinical simulation will provide additional information and resources for the practicum project and will help with the development of the debriefing practice guidelines. The following consultation report will include a comprehensive assessment and analysis of the feedback provided by five key informants, who are employed as simulation facilitators in various nursing programs throughout the lower mainland.

Consultation Objectives

1. Develop a therapeutic relationship with the key informants, which may assist with
   them feeling comfortable to express their perspectives in a trustworthy
   environment.

2. Identify factors that impede and facilitate effective debriefing practices.

3. Compare and analyze effective methods for debriefing.

4. Acknowledge the perceptions of nurse educators and their current debriefing
   practices.

Setting and Sample

A total of five high fidelity simulation instructors were interviewed. Three

simulation educators from Kwantlen Polytechnic University (KPU) were interviewed

individually in their private offices. KPU instructors preferred to meet face-to-face

instead of conducting a telephone interview. The fourth educator was also interviewed in

her private office, as per her request, at Douglas College. Lastly, the fifth educator from

Langara College preferred to be interviewed via telephone. A copy of the interview

questions was emailed to them a week prior to help prepare for the interview.

Data Collection

The data was collected by face-to-face interviews and a telephone interview,

using a semi-structured interview guide. Any identifying information was removed before

presenting the findings in this final report. In the initial contact with the key informants, I

introduced myself, explained my role, the objectives of the practicum project, and the

specific objectives for the consultations. I explained how the data would be analyzed and

outlined my plan to use the information collected. Prior to starting each consultation, I confirmed with the participants to allow me to write down notes during the interviews. I wrote down all the necessary information during each consultation and reflected on the consultations immediately following our meeting. All of the answers were recorded verbatim, as I typed them onto a Microsoft word document (Appendix B). A safe and comfortable therapeutic relationship was formed during the interviews.

Data Analysis

Definition of Debriefing

International Nursing Association for Clinical Simulation and Learning (INACSL) standards of best practice defines debriefing as a discussion or reflection of an experience with the intent to assimilate new knowledge, skills, attitudes with pre-existing knowledge (INACSL, 2016). With this definition in mind, debriefing perceptions of all key informants interviewed were compared. All of the educators were able to define debriefing accurately by indicating that an in-depth conversation where students are able to express their thoughts and feelings should be considered after the simulation experience.

Impeding Factors

Most of the educators were able to express similar impeding factors of current debriefing practices. First, time was a significant impeding factor. Many of the instructors expressed that students spent more time in the simulation experience and there was less time available for debriefing. Second, the educators expressed that there is a lack of experienced faculty who are able to teach in a simulation-based environment. Educators

preferred nurses who have a long history of clinical experience. Third, student group sizes in high fidelity simulation were too large and often educators ran out of time to debrief with students individually. Several other impeding factors varied from educator to educator based on their personal experiences in high fidelity simulation. The following impeding factors were expressed: there was no simulation coordinator to provide guidance and support for educators, an unsafe and judgemental environment led to poor student outcomes, instructors taking over the debriefing phase and were not allowing students to reflect on their experience, no structural debriefing guidelines available, no consistency of accurate strategies to debriefing amongst educators and lack of funding to train educators in debriefing or to attend conferences, or workshops.

Facilitating Factors

All of the educators that were interviewed had similar responses describing facilitating factors for current debriefing practices. Establishing a supportive and safe environment for the students was a common response. In addition, the availability of having a large space with loads of equipment was also beneficial for student learning. One educator expressed that effective debriefing practices were attainable with a smaller group of students. Additional facilitating factors that were discussed by individual educators were the following: ensuring that students came prepared to the simulation, using higher thinking questions enabled a lengthier discussion amongst students, experienced faculty were able to provide better feedback and a detailed marking rubric assisted in assessing if students had met the learning objectives.

Current Debriefing Practices

Each nursing school has incorporated various approaches to debriefing. KPU follow evaluative marking rubric and spend less time reflecting about the experience. Evaluative feedback is provided based on student performance and questions such as "what went well, what didn't go well and what will you do different next time?" …is asked during a five-minute debriefing session. It appears that effective debriefing practices that support a student to reflect on their thoughts and feelings is less apparent. More time is spent to meet the scenario objectives to provide feedback on their skills and critical thinking and less time for reflection. This may be due to time constraints or if students are spending a longer time completing the scenario in simulation. Furthermore, KPU faculty are unfamiliar of debriefing methods, frameworks or standards of best practice for debriefing compared to Langara or Douglas College. Faculty at Langara College encourage students to complete a reflective journal after each simulation scenario. Faculty provides higher order quidding questions for the journals. It is interesting to note that this college also provides an opportunity to re-run the scenario again for the students to practice and reflect on their performance. They foster a student led discussion for debriefing. Lastly, Douglas College uses the Plus-delta debriefing model, the PEARLS framework and if time permits they attempt to spend 40 minutes during the debriefing phase. It is evident that faculty at Langara College and Douglas College foster effective debriefing practices more often compared to KPU.

Evaluation of Debriefing Practice

No evaluative methods for debriefing practices of nurse educators are noted in any of the schools except for Langara College. This college supports facilitator feedback, as one instructor provides constructive feedback to another.

Resources for Debriefing

All of the educators would like to have a set of flexible debriefing guidelines to utilize in any high-fidelity simulation-based scenario. Receiving additional education and training in understanding the debriefing process was a common response from faculty members. One instructor was interested to use a video debriefing strategy but requested to receive more training and guidance. The educators would like more funding in high fidelity simulation-based learning and would like to attend simulation related workshops and conferences.

Ethical Considerations

Due to the nature of the consultations, no formal permission is necessary, and approval does not have to be granted from the Health Research Ethics Review Board. When looking at the Health Research Ethics Authority Screening Tool these consultations do not fall within the parameters of the screening tool and approval is not necessary. Informal consent will be requested via email or telephone by outlining my purpose for the consultation, my goals for the consultations, and asking them if they agree to the interview. Their voluntary involvement in the consultation process would be a form of non-verbal consent to participate.

Conclusion

Information obtained from the consultations highlighted current debriefing practices, addressed the gaps of effective debriefing practices, which will aide in developing new debriefing practices guidelines for faculty members. Impeding and facilitating factors of current practices were analyzed. Nursing educators to support effective debriefing practices in the nursing curriculum should review all of the impeding factors. These consultations provided valuable insight into current practices in debriefing. The findings from these consultations were used to inform the debriefing guidelines developed for this project.

Reference

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Health Research Ethics Authority Screening Tool

	Question	Yes	No
1.	Is the project funded by, or being submitted to, a research funding agency for a research grant or award that requires research ethics review	☐	☒
2.	Are there any local policies which require this project to undergo review by a Research Ethics Board?	☐	☒
	IF YES to either of the above, the project should be submitted to a Research Ethics Board.	☐	☐
3.	Is the primary purpose of the project to contribute to the growing body of knowledge regarding health and/or health systems that are generally accessible through academic literature?	☒	☐
4.	Is the project designed to answer a specific research question or to test an explicit hypothesis?	☐	☒
5.	Does the project involve a comparison of multiple sites, control sites, and/or control groups?	☐	☒
6.	Is the project design and methodology adequate to support generalizations that go beyond the particular population the sample is being drawn from?	☐	☒
7.	Does the project impose any additional burdens on participants beyond what would be expected through a typically expected course of care or role expectations?	☐	☒
LINE A: SUBTOTAL Questions 3 through 7 = (Count the # of Yes responses)		1	
8.	Are many of the participants in the project also likely to be among those who might potentially benefit from the result of the project as it proceeds?	☒	☐
9.	Is the project intended to define a best practice within your organization or practice?	☒	☐
10.	Would the project still be done at your site, even if there were no opportunity to publish the results or if the results might not be applicable anywhere else?	☒	☐
11.	Does the statement of purpose of the project refer explicitly to the features of a particular program, Organization, or region, rather than using more general terminology such as rural vs. urban populations?	☒	☐
12.	Is the current project part of a continuous process of gathering or monitoring data within an organization?	**yes**	
LINE B: SUBTOTAL Questions 8 through 12		5	
	SUMMARY	6	

Key Informant Interview Questions

Name: _____

1. Describe the education and training support you have participated in for debriefing competency development for simulation-based learning?

2. How do you define "effective debriefing practices"?

3. Which benchmarks do you use to ensure currency in your simulation debriefing practices? (e.g., Standards of Best Practice, Guidelines, Literature about Debriefing Frameworks/Model & Techniques, other).

4. In your experience, what factors impede or facilitate your ability to be effective in your simulation debriefing practice?

    a. Impeding factors

    b. Facilitating factors

5. Describe the simulation debriefing process you currently employ?

6. List all theoretical framework/model(s) that ground your debriefing practices?

7. What formative evaluative process(es) do you use to measure your performance as a facilitator in debriefing simulation learning events?

8. Do you employ valid and reliable tools for facilitator competency assessment, including debriefing competency assessment?

9. What kind of resources would you like to see for debriefing?

10. Is there anything else you would like to discuss related to effective debriefing practices?

Appendix C

Environmental Scan Report

The overall aim of this practicum project was to develop structured debriefing practice guidelines for nurse educators to utilize in high fidelity simulation-based learning education. This was accomplished through completing an extensive literature review, obtaining consultations with experts in the field and performing an environmental scan on existing debriefing guidelines for nurse educators. This environmental scan report includes a review of Canadian standards of best practice for debriefing in simulation from online resources such as INACSL (International Nursing Association for Clinical Simulation and Learning), Debriefing Across the Curriculum-A living document from the National League for Nursing (NLN) and MacEwan University's resource called facilitating simulation-based learning. An online webinar video describing the art of debriefing in simulation-based learning was also reviewed. In addition, an educational resource created by an educator from Kwantlen Polytechnic University was discussed in the environmental scan report. The aforementioned resources will aide in formulating a supporting foundation to develop the debriefing guidelines for this project.

Purpose and Objectives

The overall purpose of this environmental scan is to collect and analyze information on existing local or national debriefing guidelines, in an effort to assist with developing the structured debriefing practice guidelines for nurse educators proposed by the practicum project. Specific objectives include:

1. Review online and other alternative educational resources that identify and acknowledge best standards of practice for simulation-based debriefing in nursing education.

2. Examine the online and other alternative educational resources in relation to developing debriefing practices.

3. Discuss the findings in relation to developing debriefing guidelines for simulation-based learning approaches in nursing education.

Sources of Information and Data Collection

This environment scan will begin with an assessment and description of the INACSL's Canadian standards of best practice for debriefing in simulation. INACSL is an interprofessional and internationally renowned team of people involved in simulation. Their standards of best practice for simulation is used in United States and internationally (INACSL, 2016). This document provides a five-item criteria list, which is necessary to meet the standard for simulation debriefing. INACSL's (2016) five item criteria includes:

> (a) the debrief is facilitated by a person(s) competent in process of debriefing, (b) the debrief is conducted in an environment that is conducive to learning and supports confidentiality, trust, open communication, self-analysis, feedback, and reflection, (c) the debrief is facilitated by a person(s) who can devote enough concentrated attention during the simulation to effectively debrief the simulation-based experience, (d) the debrief is based on a theoretical framework for debriefing that is structured in a purposeful way and (e) the debrief is congruent with the objectives and outcomes of the simulation based experience. (p. S21-S22).

This document was developed as a building code for debriefing in order to improve a student's future performance in educational and clinical settings. Additional required

elements and details for debriefing are outlined for each of the five criteria. No specific debriefing method is discussed in the document, but the standards of best practice are suggested as a foundation for developing guidelines. There are no questioning tools or a specific time duration for debriefing discussed in this document.

The second resource named Debriefing Across the Curriculum-A living document from the National League for Nursing discussed the importance of integrating debriefing in nursing education. The definition of debriefing and suggestions of debriefing is addressed along with factors affecting the expanded and consistent use of debriefing (i.e., teaching with and about content, active learning, evidence-based debriefing, and evaluation of debriefing methods). Recommendations for deans, directors, chairs of nursing programs, nurse faculty and for member of the NLN are also outlined. No specific debriefing methods, questioning tools or the duration of debriefing time is described in this resource.

The third resource called facilitating simulation-based learning was compiled by a nurse named Colette Foisy-Doll from MacEwan University. This resource is an educator guide to simulation-based learning. This 67-page document is comprised of definitions of predebriefing and debriefing, debriefing frameworks and techniques (e.g., Plus-Delta-Gamma, circular questioning, PEARLS etc.), debriefing facilitator assessment tools such as Debriefing Assessment for Simulation in HealthCare (DASH) and Objective Structured Assessment of Debriefing (OSAD), debriefing self/peer assessment guides, and an overview on asking better questions (i.e., higher order vs. lower order thinking questions) are explained. This document includes a variety of debriefing methods,

questioning and evaluation tools and discusses the duration of debriefing time. This document will be valuable for developing debriefing guidelines for this project.

The fourth resource is an online webinar video describing the art of debriefing in simulation-based learning. This one-hour online video is available to view on the Canadian Association of Schools in Nursing (CASN) website. Elizabeth Horsley is the presenter in the video and she is a simulation interest group member and debriefing expert at CASN. In this instructional video, Elizabeth provides a debriefing toolkit for novice nurse educators in the department of simulation. She begins the video by discussing the origination of debriefing from the military. She discussed the difference between providing feedback and the essence of practicing debriefing. It was interesting to note that feedback is a one-directional conversation between the instructor and the student(s) as they are given information based on his or her performance in the simulation (Horsley, 2017). Horsley (2017) compares the definition of feedback to debriefing which is a form of discussion and reflection based on the students' simulation experience, with the intent to integrate new nursing knowledge. Principles of debriefing was associated with the INACSL's (2016) standards of best practice for debriefing. In addition, brief guidelines for beginners in debriefing and suggestions for adjusting to a learner's frame of mind and ensuring performance gap closures (i.e., what was desired vs. what actually occurred in the simulation) was communicated. Examining questioning tools (e.g., advocacy/inquiry tool) and highlighting the terms "I noticed you were…, I think you were…, I'm concerned…I'm impressed…, and I wonder what you were thinking…" (Horsley, 2017, 26:27) were emphasized. Towards the end of the presentation she

emphasized on ensuring that educators summarize the key points of the debriefing with the learners and allowing them to verbalize take home messages. She concludes the presentation by discussing INACSL's (2016) standards of best practice and encouraging educators to have a blended approach using aspects of the PEARLS framework, incorporating higher level debriefing skills and using the debriefing assessment of competence tools such as the DASH and OSAD. Nonetheless, the presenter did not communicate the appropriate time allocated for a debriefing session.

Lastly, the Kwantlen Polytechnic University (KPU) simulation instructor had provided an educational evaluation resource for the course Health Foundations 2250 that she used for debriefing (H. Olson, personal communication, October 15, 2018). This resource was an evaluation marking rubric. No debriefing methods, questioning tools or the time spent for debriding was indicated in the evaluative marking tool. A five-minute evaluative feedback post simulation was provided based on the student's performance.

Data Analysis

INASCL's (2016) standards of best practice is assimilated within the NLN Debriefing Across the Curriculum document, Collete Foisy Doll's (2017) guide of facilitating simulation based-learning and in Elizabeth's Horsley's (2017) webinar. The emphasize of these standards are essential while developing simulation-based debriefing guidelines. The standards of best practice in simulation debriefing specifies a debriefing process which aides in enhancing student learning, self-awareness and self-efficacy (INACSL, 2016). Nonetheless, the KPU evaluative feedback resource did not indicate debriefing standards but the document did follow three of five standards of best practice.

First the instructor was competent in supporting the process of debriefing, second, a safe learning environment was provided for students during simulation and third, a form of an evaluative feedback process was performed in order to meet the objectives of the simulation-based experience. Hence, INACSL's (2016) standards of best practice for simulation debriefing is beneficial in the development of high-fidelity simulation debriefing guidelines.

The NLN's document of Debriefing Across the Curriculum is a useful resource that describes the background and significance of debriefing in clinical simulation. Although this document is brief, it provides concise definitions and recommendations to facilitate the debriefing process. Therefore, this document will also aide in developing high fidelity simulation debriefing guidelines.

Colette Foisy-Doll's (2017) educator guide is fundamental in the process of developing high fidelity simulation debriefing guidelines. The various debriefing frameworks and techniques are thoroughly described and incorporates the appropriate references of authors that developed the models for debriefing. This document will also provide details of Adam Cheng's PEARLS framework.

Horsley's (2017) webinar video was an essential debriefing toolkit for novice educators in simulation. This instructional video addressed definitions and the significance of predebriefing/debriefing, incorporated debriefing strategies and evaluation methods that were also present in Collete Foisy-Doll's (2017) educator guide. Various debriefing techniques were discussed in the webinar and this was valuable to aide new educators in enhancing their personalized debriefing approaches in simulation-based

learning. This webinar video will help facilitate in the development of high-fidelity simulation guidelines.

The KPU evaluative feedback resource (H. Olson, personal communication, October 15, 2018) does not provide details or support the debriefing process. This document provides insightful information in understanding the instructor's perception of debriefing and its use in high fidelity simulation-based learning. Therefore, this resource will not be utilized to form high fidelity simulation debriefing guidelines.

Ethical Considerations

Due to the nature of the environmental scan, no formal permission is necessary, and approval does not have to be granted from the Health Research Ethics Review Board. When looking at the Health Research Ethics Authority Screening Tool, this environmental scan does not fall within the parameters of the screening tool and approval is not necessary.

Conclusion

Debriefing in clinical simulation promotes understanding and supports the transfer of knowledge, skills and attitudes with a focus on best practices in order to promote safe quality patient care (INACSL, 2016). This environmental scan report included a comprehensive description of five debriefing resources. Four of the debriefing resources, as previously described, was used in the development of the debriefing practice guidelines.

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Health Research Ethics Authority Screening Tool

	Question	Yes	No
1.	Is the project funded by, or being submitted to, a research funding agency for a research grant or award that requires research ethics review		x
2.	Are there any local policies which require this project to undergo review by a Research Ethics Board?		x
	IF YES to either of the above, the project should be submitted to a Research Ethics Board. **IF NO** to both questions, continue to complete the checklist.		
3.	Is the primary purpose of the project to contribute to the growing body of knowledge regarding health and/or health systems that are generally accessible through academic literature?	x	
4.	Is the project designed to answer a specific research question or to test an explicit hypothesis?		x
5.	Does the project involve a comparison of multiple sites, control sites, and/or control groups?		x
6.	Is the project design and methodology adequate to support generalizations that go beyond the particular population the sample is being drawn from?		x
7.	Does the project impose any additional burdens on participants beyond what would be expected through a typically expected course of care or role expectations?		x
LINE A: SUBTOTAL Questions 3 through 7 = (Count the # of Yes responses)			
8.	Are many of the participants in the project also likely to be among those who might potentially benefit from the result of the project as it proceeds?	x	
9.	Is the project intended to define a best practice within your organization or practice?	x	
10.	Would the project still be done at your site, even if there were no opportunity to publish the results or if the results might not be applicable anywhere else?	x	
11.	Does the statement of purpose of the project refer explicitly to the features of a particular program, Organization, or region, rather than using more general terminology such as rural vs. urban populations?	x	
12.	Is the current project part of a continuous process of gathering or monitoring data within an organization?	**yes**	
LINE B: SUBTOTAL Questions 8 through 12 = (Count the # of Yes responses)	**6**	
	SUMMARY **Evaluation Research**		

Appendix D

High Fidelity Debriefing Guide for Nurse Educators

A High Fidelity Debriefing Guide for Nurse Educators

Creative Commons. (2016). *Example of a medical simulation*. [Digital image]. Retrieved from
https://en.wikipedia.org/wiki/Medical_simulation#/media/File:PHOTOS_INSIDE_THE_CLASSROOM_UPDATE
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Introduction

The **High Fidelity Debriefing Guide** is one tool that nurse educators could use to guide their debriefing practices for high-fidelity simulation (Appendix A). It is based on the Promoting Excellence And Reflective Learning in Simulation (PEARLS) debriefing framework designed to guide debriefing practices in high fidelity simulation-based learning experiences (Bajaj et al., 2018; Cheng et al., 2016; Eppich and Cheng, 2015). The standards of practice for debriefing from the International Nursing Association for Clinical Simulation (INACSL) was used throughout this document and within the structured framework used to develop the checklist (INACSL Standards Committee, 2016).

Nurse educators use debriefing practices as a post-experience analysis in simulation to facilitate the process of students exploring, analyzing, reflecting, assimilating critical thinking skills and validating emotional experiences to improve their performance in the clinical setting (Neil & Wotton, 2011). Debriefing practices in simulation education can promote an experiential learning process that is imperative for enhancing knowledge comprehension and promoting a critical analysis of new information (Neil & Wotton, 2011). Clear, structured debriefing practice guidelines are especially important for nurse educators when they are implementing high fidelity simulation experiences, because those simulations are realistic in nature and are often based on high acuity, low occurrence experiences that can evoke strong reactions and feelings (e.g. cardiac arrest).

Debriefing Practices for High Fidelity

Nurse educators use debriefing practices for high fidelity simulation after the completion of a high fidelity simulation to optimize the student's clinical knowledge,

psychomotor skills and review the simulation performance (Neil & Wotton, 2011). Educators guide and provide constructive feedback to students through reflective thinking exercises to bridge the gap between nursing theory and practice and to understand the various health concepts and learning objectives uncovered in the simulation (Bussard, 2016). Through debriefing, students are able to critique, correct, and evaluate their clinical performance using open dialogue (Neil & Wotton, 2011).

Nurse educators use two types of effective debriefing methods; (1) oral face-to-face debriefing and (2) video recording with post simulation review of videos (Bussard, 2016; Chronister & Brown, 2012; Grant et al., 2014). Both are effective and both usually focus on skill acquisition, however, debriefing practices for high fidelity simulation-based education should also include reflective learning, directive feedback and focused teaching as outlined in the PEARLS framework.

The PEARLS Framework

One framework that can help nurse educators develop debriefing practices for high fidelity simulation-based education is the **P**romoting **E**xcellence **A**nd **R**eflective **L**earning in **S**imulation (PEARLS) framework. The PEARLS debriefing framework is a practical structured guide for nurse educators that can assist with guiding debriefing practices in high fidelity simulation-based learning experiences (Bajaj et al., 2018; Cheng et al., 2016; Eppich and Cheng, 2015). The PEARLS framework is a blended approach to debriefing that merges various debriefing strategies to customize the post scenario discussion based on the learner's learning style, learning objectives, amount of time allocated for learning, and faculty experience.

The PEARLS framework begins with setting the scene which involves creating a describing script then moving into the four phases including: (1) reactions, (2) description, (3) analysis and (4) summary. Each of these phases has distinct objectives, tasks and suggested phrases and questions (Appendix A). Chen et al. (2016) also proposed strategies for the analysis phase of debriefing that include: (a) promoting learner self-assessment, (b) facilitating focused discussion to promote reflective learning and (c) providing information in the form of directive feedback and/or focused teaching," (p. 420).

Debriefing Script

The PEARLS framework recommends that nurse educators create a debriefing script before implementing the debriefing experience to "set the scene" and guide the debriefing process. This will enable educators to create a safe and trusting learning environment and meet the objectives for each phase. The script should include phrases or questions to set the scene for debriefing, organize the debriefing session to incorporate students' reactions and describe the key elements of the scenario. The script should also prepare educators for one of the debriefing approaches and create probing questions that inspire both educators and students to truthfully express their perspective about the clinical simulation (Cheng et al., 2016). Sample phrases and questions are provided in the **High Fidelity Debriefing Checklist** (Appendix A).

The Four Phases of Debriefing

The debriefing process involves four distinct phases, including reactions, description, analysis, and summary.

Reactions

The first phase of debriefing includes starting the conversation with an open-ended question to allow students to express their initial thoughts and feelings towards the scenario (Cheng et al., 2016). Furthermore, follow up questions are encouraged by providing a period of silence, which will prompt students to think about ad add to their responses. All of the students are encouraged to express their reactions as educators work towards recognizing and acknowledge their emotions as they surface. It is also important in this phase for educators to help students comprehend the underlying reasons of experiences that may have triggered an emotional response (Cheng et al., 2016)

Description of Experience

In this second phase of the debriefing process the educators and learners create a shared understanding of the main learning objectives of the high fidelity simulation. Without adequate discussion of the learning objectives in this phase students may misdiagnose and misinterpret the focus of the simulation. To avoid confusion, educators are advised to ask students for confirmation that they understand the purpose and learning objectives of the experience and ensure that everyone has a shared understanding of the description of the experience (Cheng et al., 2016).

Analysis of Student Performance

In phase three of the debriefing process, nurse educators have three types of strategies they may use to analyze student performance including: (1) learner-self assessment, (2) focused facilitation, and (3) providing information. Learner self-assessment strategies (i.e., what went well and what would the student improve and why,

what was easy and what was challenging for the student?") are learner centered and can be used to prompt students to express their thoughts and emotions during the reactions phase. As students provide feedback, educators are encouraged to discuss positive behaviors and address significant performance gaps, especially if those gaps have been previously addressed e.g. policies and protocols (Cheng et al., 2016).

If time permits, a focused facilitation approach can be utilized, in which educators can focus on selective problematic areas and initiate an in-depth discussion to resolve issues and provide feedback e.g. did not follow the policy. Nurse educators can focus on outlining their objective observations, sharing their perspective, and inviting open inquiry to allow learners to discuss their rationale for action in the high fidelity simulation. During the discussion, pros and cons of the students' decision making and team behaviors are reviewed (Cheng et al., 2016).

Lastly, educators can provide information while focusing on the solution to any problems observed in the scenario e.g. review policy. Educators can lead this discussion on information and provide direct feedback especially when time is limited, students have poor insight into their behavior, or when performance gaps are highly technical, and teaching is required to offer clarity e.g. chest pain protocol. Providing positive and constructive feedback and incorporating a "because" statement to address the reasons for change is suggested (Cheng et al., 2016).

Application and Summary of Debriefing

In the application and summary phase of debriefing, students are provided with an opportunity to share what they have learned in the high fidelity simulation. During this

phase educators focus on encouraging the student(s) to make one or two statements about what they learned in the scenario. Without this phase, educators may not be able to verify if the students were able to meet the learning objectives. Alternatively, educators can summarize by providing a brief review of the main take home messages especially if a student's summary does not align with the purpose or learning objectives. Therefore, it is important for educators to allocate sufficient time for this phase (Cheng et al., 2016).

Implementation and Evaluation of the Checklist

Nurse educators can implement and evaluate the PEARLS debriefing guidelines for high fidelity simulation based nursing education by using the **High Fidelity Debriefing Checklist** (Appendix A).

Implementation

Nurse Educators can implement the **Checklist** by following the phases as outlined and customizing the phrases and questions to suit the simulation (e.g. timing of debriefing session and learning objectives). The **Checklist** displays objectives for each phase, as well as suggested sample questions and phrases. In the Analysis phase educators can use the check boxes for the top two or three domains to help focus the discussion of analysis.

Evaluation

As nurse educators use the **Checklist** they can reflect on and evaluate the contents and applicability to their simulation and make adjustments to the phrases and questions as needed. The "Comments/Notes" section can be used to evaluate the guideline and

document suggested revisions to the checklist for future implementation (e.g. change the

domain focus).

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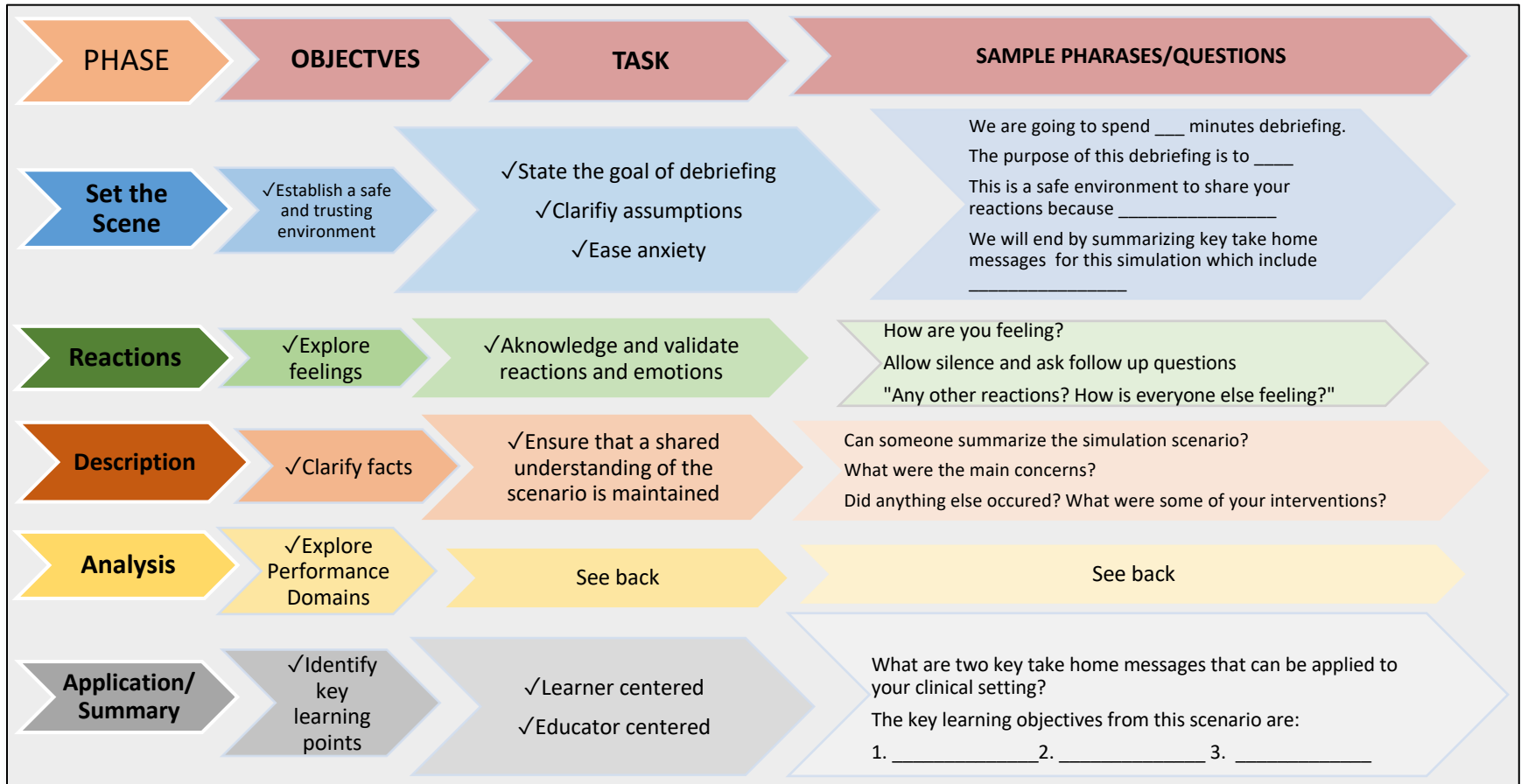
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Appendix A. Debriefing Checklist for High Fidelity Simulation

PHASE	OBJECTVES	TASK	SAMPLE PHARASES/QUESTIONS
Set the Scene	✓Establish a safe and trusting environment	✓State the goal of debriefing ✓Clarifiy assumptions ✓Ease anxiety	We are going to spend ___ minutes debriefing. The purpose of this debriefing is to ____ This is a safe environment to share your reactions because _____ We will end by summarizing key take home messages for this simulation which include _____
Reactions	✓Explore feelings	✓Aknowledge and validate reactions and emotions	How are you feeling? Allow silence and ask follow up questions "Any other reactions? How is everyone else feeling?"
Description	✓Clarify facts	✓Ensure that a shared understanding of the scenario is maintained	Can someone summarize the simulation scenario? What were the main concerns? Did anything else occured? What were some of your interventions?
Analysis	✓Explore Performance Domains	See back	See back
Application/ Summary	✓Identify key learning points	✓Learner centered ✓Educator centered	What are two key take home messages that can be applied to your clinical setting? The key learning objectives from this scenario are: 1. _____ 2. _____ 3. _____

Adapted from Bajaj, K., Meguerdichian, M., Thoma, B., Huang, S., Eppich, W., & Cheng, A. (2018). The PEARLS Healthcare Debriefing Tool. *Academic Medicine, 93*(2), 336.

ANALYSIS PHASE

Transition from description to analysis

"Now that we are clear about what happened in the scenario, let's explore and discuss the events that took place.

There were areas where you (or all) managed well and some areas that were more challenging."

Select the top two or three performance domains. Use one, two or all of the debriefing strategies below

Check the Top Three Performance Domains

Cognitive	Teamwork	Decision Making	Technical Skills	Communication	Leadership	Situational Awareness
☐	☐	☐	☐	☐	☐	☐

DEBRIEFING STRATEGIES FOR HIGH FIDELITY

1. Learner Self- Assessment - Promote reflection to assess performance - Student led discussion on any performance domain. Educators address critical performance gaps not addressed by students.

2. Focused Facilitation - Probe deeper on key aspects. Focus on one or all performance domains. Analyze student performance related to learning objectives.

3. Provide Information: Address gaps in behavior. Educators provide direct feedback and teaching. May focus on any of the performance domains and address relevant knowledge and tips to perform the action correctly.

SAMPLE PHRASES AND QUESTIONS

Self Assessment: What did you do well and why? What did not go well? What would you have done differently and why? What skills would like to improve on? Were there any gaps in your performance? Did you follow policy?

Probing: Let's spend a few minutes thinking about your performance. Do you think you performed well? Why or why not? Did you meet the objectives? Why or why not? What was your underlying rational to your actions?

Information: I noticed that you (indicate behavior). Next time, you may want to (suggest the appropriate behavior) because (provide a rationale).

Comments/<u>Notes:</u>

Adapted from Bajaj, K., Meguerdichian, M., Thoma, B., Huang, S., Eppich, W., & Cheng, A. (2018). The PEARLS Healthcare Debriefing Tool. *Academic Medicine, 93*(2), 336.