

EVALUATING DEBRIEFING METHODS FOR HIGH FIDELITY SIMULATION  
An Evidence-Based Project

By:

Sabrina A. Glesmann, Angela Kastner, and Monika Venteicher

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Dr. Christopher Smallwood

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## Abstract

The purpose of this study is evaluating effectiveness of debriefing. The PICO(T) question asks “for nurse educators debriefing in simulation (P) how does using the Debriefing for Meaningful Learning (DML) method (I) compared to other simulation debriefing methods (C) influence simulation debriefing effectiveness as evidenced by a debriefing evaluation?”

Simulation creates problems for educators to ensure the experience meets best practice standards and guarantee quality learning opportunities. A comprehensive literature search was completed using online databases for evidenced based peer reviewed articles. Faculty driven debriefing, high-fidelity simulation, debriefing comparisons, effective debriefing, and the Debriefing for Meaningful Learning Method (DML) were inclusion criteria. The articles supported utilizing a structured debriefing method and understanding the debriefing process. The analysis indicated structured debriefing is needed and the instructor’s demeanor affects student participation and learning. There is a need to develop structured debriefing tools and evaluation methods. More debriefing research is necessary, specifically assessing student outcomes, debriefing standards, training, and evaluation methods.

The research concluded a structured debriefing process improves student-learning outcomes of critical thinking and problem-solving. It did not specifically support the Debriefing for Meaningful Learning (DML) as the single most effective method of debriefing. Many limitations contributed to the research reliability, including small sample sizes, different methods of evaluation, lack of faculty training, and varying educational levels of students. Debriefing is identified as the key reflective learning strategy that allows the students to achieve success.

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## **Simulation Debriefing:**

### **Evaluating Debriefing Methods for High Fidelity Simulation**

The use of high fidelity simulation laboratory experiences is becoming more common in nursing schools. The challenge is for educators to make the experience discussion relevant and meaningful to students. Several methods of debriefing simulation experiences have been developed. Determining what methods are the most helpful for students to gain new hands-on and critical thinking skills is necessary.

#### **Problem**

As nursing education plans to meet the changing needs of healthcare and nursing education, simulation has become a pedagogy that provides learning experiences, integrating problem-solving, prioritizing, and critical thinking skills. The implementation of simulation creates challenges and problems for nursing simulation educators to ensure the simulation experience, specifically debriefing the post simulation experience, meets the standard of simulation best practice, and provides students with a valid learning experience. As stated in criterion one of the Standards of Best Practice: Simulation Standard VI: The Debriefing Process (Decker et al., 2013), indicates that debriefing should “validate competence through the use of an established instrument” (pg. S27). How are simulation educators able to determine if debriefing methods are effective? Simulation faculty need an evidenced supported debriefing tool that is proven to effective for student learning.

#### **Purpose**

The purpose of evaluating the effectiveness of debriefing methods, is to validate that the debriefing method, specifically the DML, fosters reflective learning and assimilation of knowledge into practice. According to Dreifurest (2015), establishing the effectiveness of the

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Debriefing for Meaningful Learning (DML) debriefing method would provide professional guidance for nursing faculty and simulation educators to incorporate a quality debriefing method into their simulation program. As simulation education programs are being developed and expanding, educators and simulation faculty must work towards achieving the standards of best practice in simulation, including debriefing.

### **Background**

Simulation is a type of teaching pedagogy that is used to encourage, enhance, or validate a student's knowledge, skills, and attitude (Meakin et al., 2013). Simulation replicates a real life healthcare scenario to allow pre-licensure nursing students the opportunity to practice in a fully active environment. This type of teaching pedagogy has been progressively integrated into nursing education in the last 20 years (Aebersold & Tschannen, 2013). One reason for the increase of simulation is the decline in the availability of traditional clinical sites due to nursing school competition and a decline in inpatient census (Davis, Kimble, & Gunby, 2014). Most simulations follow a similar pattern in setup and execution of the scenario. There is pre-work required by the participant, actual participation in the scenario, and debriefing immediately following the simulated event (Aebersold & Tschannen, 2013). Debriefing is the activity that takes place after the scenario and is facilitated by an instructor with the purpose of reflection and transferring learning to future similar clinical situations (Meakin et al., 2013). This brings forth the question, do the students receive a deeper learning during debriefing if the facilitator follows a standardized tool during the debriefing portion of a simulation?

### **Theory/Model**

The simulation experience uses the experiential learning theory to educate pre-licensure nursing students. According to the University of Texas at Austin (2015) experiential learning is

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learning that encourages students to apply their knowledge and understanding to real-world situations where the instructor is directing and guiding the learning. The classroom, clinical, lab, or simulation experience all offer opportunities for experiential learning.

According to McLead (2013), Kolb's Experiential Learning Model fits the simulation experience for a student learning. The model begins by having the student experience the situation (the scenario), reflect upon the situation (the debriefing process), adapt to the situation, and then as the student encounters a similar situation in actual nursing practice, is able to react and implement correct interventions, prioritize care, and critically think. The students have experienced those skills previously in simulation scenarios.

### **Significance**

The significance of inquiring about debriefing is related to student learning. The purpose of debriefing is to give the student the opportunity to reflect on the experience, and to learn from it. There may be missed learning opportunities if debriefing guidelines lack consistency.

According to a national survey conducted by Fey and Jenkins (2015) "fewer than half (47.5 percent) of all debriefers had any training in debriefing, and only 19 percent of schools assessed the competence of their debriefers" (p. 364).

The Quality and Safety Education for Nurses (QSEN) competencies related to this problem focuses on quality improvement, evidence-based practice, teamwork, and collaboration. QSEN provides a framework to assist in preparing pre-licensure nursing students to have the knowledge, skill, and attitude needed to improve the quality and safety of care consistently in the place of their employment (QSEN, 2014). Nursing students have the opportunity to learn immediately in a debriefing session through the use of reflection and discussion on how their simulated actions would impact patient care. The safe learning environment encourages and



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fosters critical thinking and clinical judgment skills. The opportunity to compare simulation debriefing methodologies will guide evidence-based practice. What is the best method of debriefing to have the greatest impact on student learning? Researching and evaluating a reliable debriefing tool establishes continuous quality improvement in nursing education. As a result of the simulation, students have opportunities to work continuously, learn skills related to quality improvement, implement evidence-based practice, and participate in teamwork and collaboration.

### **PICO question**

For nurse educators debriefing in simulation (P) how does using the Debriefing for Meaningful Learning (DML) method (I) compared to other simulation debriefing methods (C) influence simulation debriefing effectiveness as evidenced by a debriefing evaluation?

### **Setting**

The setting is a simulation environment where pre-licensure nursing students are participating in a high fidelity simulation scenario with debriefing. This environment can range from one room with a single high fidelity manikin, to multiple rooms with several high fidelity manikins. The high fidelity manikins are operated by trained educators who would be included in the setting. These operators need to understand how the high fidelity manikin should respond to student interventions. The setting would also include an educator who would be responsible for facilitating the debriefing after the simulation scenario is completed by the nursing students.

### **Stakeholders**

The stakeholders for effective simulation debriefing are nurse educators, program directors, students, employers, patients, and funding sources. The use of an effective debriefing tool that promotes student learning will benefit all stakeholders. The nurse educators and

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students will be using and learning from the simulation and effective debriefing. The program director must research and determine what debriefing method to use with students. The patients and health-care employers will benefit because the students will have hands-on and critical thinking skill that develop from the simulation experience. The funding source, or developer of the debriefing tool will benefit as the debriefing method is used in education. The tool would further be validated for more widespread implementation and use in simulation education.

### **Potential/Actual Cost Benefits/Effectiveness**

According to Minority Nurse Staff (2016), the cost of the high-fidelity simulator can range from \$75,000-\$100,000. Frick, Swoboda, Mansukhani, and Jeffries (2014) found that “the total cost per student ranged from \$154 to \$426 at school 1 (a community college) and from \$445 to \$946 at school 2 (a large university)” (Frick, Swoboda, Mansukhani, & Jeffries, 2014, p. 12). This cost would include laboratory supplies, technology fee and faculty pay for the time in the simulation lab. According to the Center for Medical Simulation (2016), the cost of taking a five-day comprehensive instructor course using the DASH method of debriefing was \$4,875 for one instructor. A price for a training course for the Debriefing for Meaningful Learning was not available. The guiding questions and principles in debriefing materials may be copyrighted; therefore, one must be aware of any cost or usage fees associated with those debriefing methods.

Establishing the reliability and validity of simulation debriefing methods provides educators with methods to ensure effective student learning. Using the same effective method throughout the program will provide consistency in debriefing and enhance student achievement. This project will research and review the effectiveness of simulation debriefing methods.

### **Search Plan Method**

In searching for the correct information to answer the burning question, often times more than one resource is needed (Melnyk & Fineout-Overholt, 2015). Several databases were used to search for articles related to the PICO question including: CINAHL, PubMed, Medline, and Google Scholar. The search used keywords specifically related to the PICO question. After finding numerous articles, the group narrowed down the articles to ones that best supported the PICO question in relationship to what is asked by the PICO question. This search plan came up with a reasonable number of articles to evaluate.

### **Special Sources/ Journal**

A specialized journal used for several articles related to the PICO questions is *Clinical Simulation in Nursing* by Elsevier. *Clinical Simulation in Nursing* is an international, peer reviewed journal that is published weekly online and is the official journal used by the International Nursing Association for Clinical Simulation and Learning (INACSL). This journal is indexed in CINAHL and ScienceDirect (Elsevier, 2015).

### **Databases Searched**

PubMed, Google Scholar, Medline, and CINAHL were the databases used for the general search. Polit and Beck (2015) recommend using primary source research reports for the majority of the literature review. These research reports are studies that are written by the researchers who are experts in their of the study. These databases are chosen for the number of primary source research that could be found.

### **Search Terms & Strategy**

The search began in the PubMed database. Using the key phrase “debriefing for meaningful learning compared with other methods” and then the phrase “and like articles” was

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indicated resulting in 117 articles. In CINAHL using the keyword “debriefing for meaningful learning” produced six articles. Using the keyword “debriefing” resulted in 589 articles adding the Boolean phrase AND “simulation” narrowed the results to 231 articles. The secondary search was revised to using the key term debriefing, the Boolean Phrase AND “simulation in nursing education” leading to 34 results. To this result, the Boolean Phrase NOT “standardized patient” was added removing one article, leaving 33 articles in this search. Another search in CINAHL using the keyword “faculty”, the Boolean phrase AND “debriefing method” resulted in 7 articles, four of which were journal articles. Another search in CINAHL was completed using the keyword “simulation”, the Boolean phrase AND “debriefing”, in addition another Boolean phrase AND “instrument”. This result yielded 16 articles. Six of these were thesis papers, nine journal articles and one video. Debriefing effectiveness was another key term used in CINAHL resulting in 21 articles with five of those articles being cross referenced to the other CINAHL searches. A Google Scholar search was completed using the phrase “debriefing for meaningful learning versus other debriefing methods. This resulted in 47,500 articles. “In nursing simulation” was adding narrowing the results to 7,080. The final search terms used “Nursing faculty using debriefing for meaningful learn method compared with other debriefing methods in high fidelity simulation with nursing students” yielded 1,450 results. This was narrow further by changing the timeframe to 2012-2016. After changing the year, there were 738 articles and several duplicate articles were found from other databases, this then yielded one article.

Medline was the final search engine resource. The key term debriefing was used with the Boolean phrase AND simulation in nursing education resulting in 24 articles. The majority of the identified articles are also present in other databases. Key terms utilized were: debriefing for meaningful learning, simulation, faculty, debriefing, and simulation in nursing education.

**Inclusion/Exclusion Criteria**

The strategy of using exclusion and inclusion criteria is to generate search methods that effectively address the desired elements of the PICO question. Exclusion criteria included articles that utilized human simulation, virtual simulation, a standardized patient, case scenarios, all healthcare with the exception of nursing, articles greater than five years old, thesis work, dissertation work, and any pre-briefing in simulation. For the purposes of this study, the focus is targeted on educators utilizing high fidelity simulation situations and various debriefing methods specifically the Debriefing for Meaningful Learning method. Inclusion criteria includes faculty driven debriefing, high fidelity simulation, debriefing comparisons, effective debriefing, and the debriefing for meaningful learning (DML) method. The reason to exclude human, virtual and standardized patient is due to the need for research that is relevant to nursing education with high fidelity simulation. Keeping the research current, within the last five years, will assure the information is current and valid for future practice.

**Hierarchy Level of Evidence**

Melnik and Fineout-Overholt (2015), identify that the hierarchy of evidence will provide guidance related to the types of research studies that will most likely provide reliable answers to clinical questions. The higher the methodology ranks, the more likely the results will be accurate and provide confidence to the researchers that the interventions studied will provide repeated results.

Polit and Beck (2012) recommend approaching searching for research articles with a strategy in mind. The search strategy can begin in an electronic database. The search flow diagram, referenced in Appendix A, was the strategy used to complete the search for articles.

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After using the above mentioned databases and the search flow diagram; a list of nine articles met the inclusion criteria that will be used to support the PICO(T) question.

### **Analyzing the Literature**

The literature search identified nine articles that meet the search parameters. Individual critical appraisals were completed on those nine articles to assess the research and significance for nurse educators who use simulation debriefing. Critical appraisals are designed to comprehensively review the strengths and weaknesses of the research.

The newer nature of simulation, more specifically simulation debriefing, yielded limited systematic statistical research supporting the use of the Debriefing for Meaningful Learning tool, yet single Randomized Controlled Trial's (RCT), review of correlation studies, single correlation studies, and review of descriptive studies were appraised. Many aspects of the research are in the critical appraisals and will be included in the evidence matrix including the APA citation, level of evidence as determined per Polit and Beck (2012), research purpose, theoretical or conceptual research design, sample and size, research results, and comments related to research supporting or not supporting the question if the Debriefing for Meaningful Learning is a tool that should be used by educators in simulation debriefing. Completed critical appraisals of the nine articles are included in Appendix B along with the matrix analysis table in Appendix C.

### **Levels of Hierarchy**

Polit and Beck (2012) identifies a hierarchy of evidence that ranks the level of research based on the type of research. Level one indicates strong, more specific research evidence to support interventions to level seven, less strength supporting research evidence, see Figure 1.

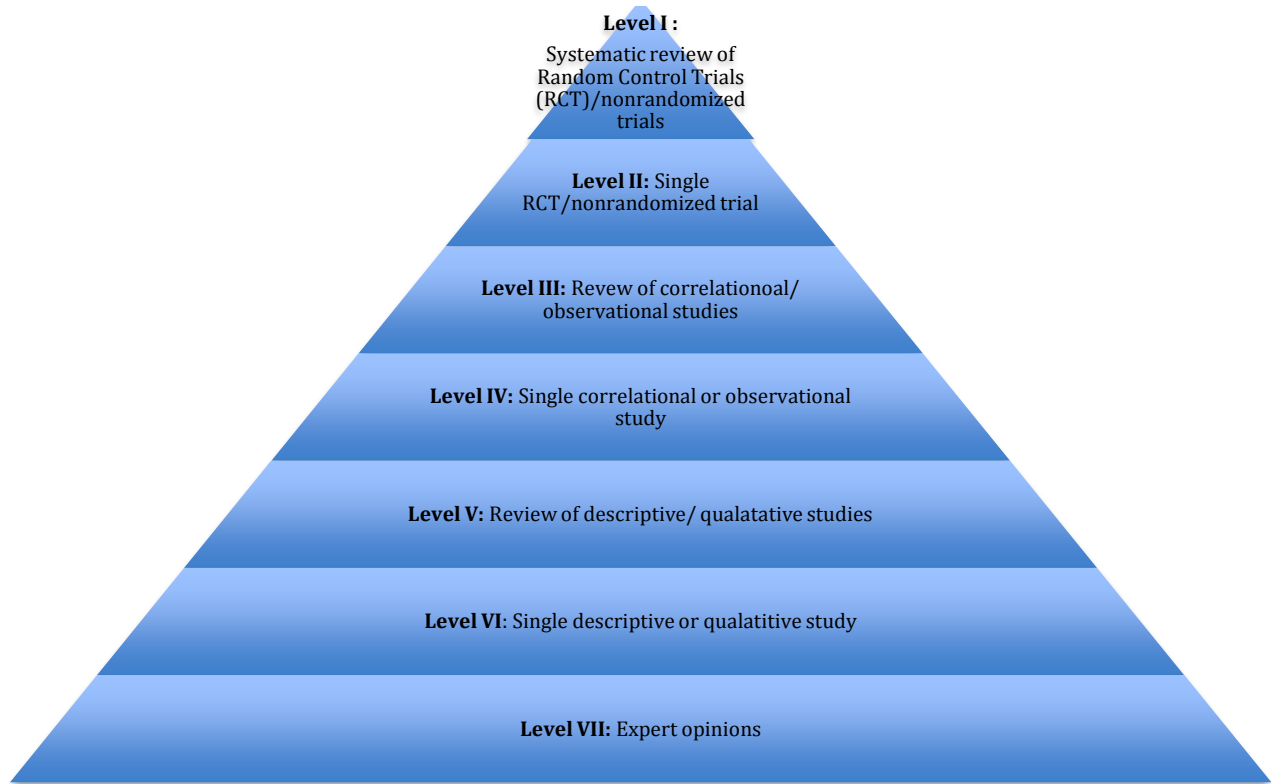
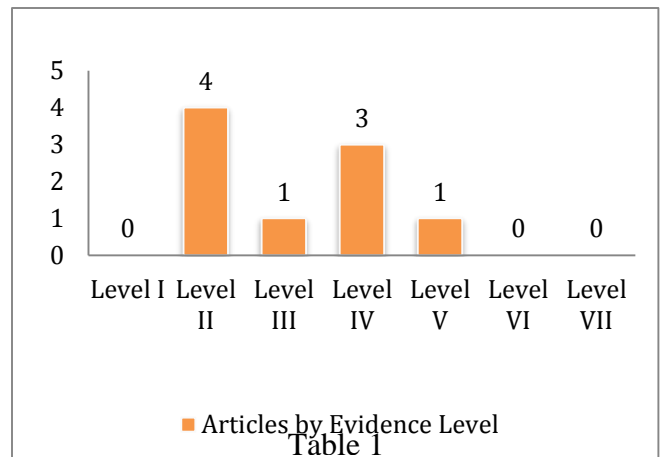


Figure 1: Evidence hierarchy (Polit and Beck, 2008, pg. 28).

Identifying and understanding how leveled research impacts the reliability and validity of the evidence is important to appropriately synthesize the research, and if or how, it could guide practice. Of the nine articles chosen for inclusion see Table 1 for the leveled hierarchy

distribution. No articles were leveled at level one, six or seven. Five articles were leveled at a level two or three, which may indicate a stronger foundation in the research. Three articles are leveled at levels four and five, which could have an impact on the reliability and validity of the research needed to support evidence based practice.



**Critical Appraisal of Individual Articles****Article 1: Chronister and Brown.**

Chronister and Brown (2012) conducted a Level II single random controlled trial (RCT) (Polit & Beck, 2012). This quantitative article asked the question about comparing and measuring the differences in the skill quality, skill response time, and knowledge retention outcomes using video assisted debriefing or not. This study provides insight into methods of debriefing that are utilized after high fidelity simulation and the influence that video assisted debriefing has on measureable outcomes. A small sample (n=27) of undergraduate nursing was randomly assigned to a simulation experience, a cardiopulmonary arrest (CPA). The Emergency Response Performance Tool (ERPT), and a 10 item written exam were taken by students' pre and post initial and repeat simulation. These tools measure any variances in skill performance and knowledge between the control and intervention groups.

The results showed a statically significant improvement in both the control and intervention group after exposure to the repeat simulation, not specifically the video assisted debriefing. The intervention of the video assistance in debriefing had minimal impact on student skill performance and knowledge. This study had design concerns and limitations including the small sample size and skewed representation of the population.

It is important for simulation educators to have an awareness of the potential that repeating simulations after debriefing and the positive impact on student learning. This article provided a single measurement of alternative debriefing methods, specifically emergency response, yet did not support the PICO(T) question assessing the utilization and implementation of the DML method in high-fidelity simulation debriefing. While this study did not directly



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support the PICO(T), this study allowed for the evaluation and measurement of debriefing methods and provides a basis to compare with research specific to the DML.

### **Article 2: Dreifruet**

Dreifruet (2012) conducted a Level II RCT (Polit & Beck, 2012) to determine if the Debriefing for Meaningful Learning (DML) debriefing method develops greater clinical reasoning skills than traditional methods of debriefing. Two hundred thirty-eight undergraduate BSN students participated in an exploratory quasi-experimental pretest-posttest study. Strong efforts were made by the research to represent population equality of this study. Students were randomly selected to control or experimental groups.

The Health Sciences Reasoning Test (HRST) and the Debriefing Assessment for Simulation in Healthcare (DASH) were used as measurement tools. The HRST was administered and designed intervals both pre and post simulation to all students. A statistically significant improvement was identified in the students who were debriefed using the DML than those that were not. Significance was noted in the perception of debriefing quality as evidence in the DASH measurement scores comparing the control and experimental groups. Additionally, a direct relationship between quality debriefing and superior clinical reasoning skills is identified.

This research provides support and validity for nurse educators to consider the DML as a tool for debriefing high fidelity simulation. This article strongly supports the PICO(T) question by statistical evidence measuring improvement of students who are debriefed using the DML compared to those who were not, and the measurement of student perception of superior quality of debriefing. It is not fully clear what methodologies are utilized in the control group, just that the DML is not utilized. The researcher was also the evaluator and the faculty implementing the DML tool during debriefing. This creates reliability and consistency in data reporting and

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collection, yet also presents concerns for the future with other faculty implementing the DML. What level of training and reliability must be established to more widely incorporate and study the DML in nursing education?

### **Article 3: Fey and Jenkins**

Fey and Jenkins (2015) studied nursing programs that use simulation and debriefing as part of nursing education. This study used a cross-sectional internet-based survey as the design. According to Polit and Beck (2012) a single correlation/observation study is Level IV on the evidence hierarchy.

The target sample was 1440 schools and 502 schools from across the country participated in the study. The participating population included diploma, associate, and baccalaureate programs using simulation activities for education and assessment purposes. The survey questions were constructed to gain information about the techniques, setting, timing and facilitators performing debriefing sessions.

According to Fey and Jenkins (2015), the majority of debriefing moderators lack training and their competency is not being assessed. This study also indicated that when a designated simulation administrator was present, theory-based debriefing was used. A couple of positive findings of this study are students scored higher in clinical reasoning when using Debriefing for Meaningful Learning, and the use of a structured debriefing process showed improved clinical judgment or thinking like a professional nurse.

Problems identified with this study are the lack of statistical citations to show correlations between structured debriefing and the promotion of clinical judgment, and a lack of an instrument to measure clinical reasoning. This article discussed methods that are effective to promote student learning in debriefing, which is part of our PICO question.

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**Article 4: Kolbe, Weiss, Grote, Knauth, Dambach, Spahn, and Grande.**

This article focuses on emergency scenarios and use of the TeamGAINS debriefing tool. The study is a single correlational/observation study. According to Polit and Beck (2012), the level of evidence is Level IV. The setting of the study was a Swiss hospital, and the participants were four anesthetists, 29 residents, and 28 nurses.

The participants were given a pre-test and post-test to determine the quality of debriefing, the perception of the leader, and the setting. An anesthesiologist and a psychologist debriefed the scenarios. According to Kolbe et al. (2013), the steps of TeamGAINS debriefing include:

1. Reactions.
2. Debriefing the clinical part of the scenario, clarify questions, allow for understanding the appropriate clinical procedures.
3. Transfer from simulation to reality.
4. Reintroduce the expert model systematically discusses the behavioral skills and their relationship to clinical outcomes.
5. Summarize learning experience and finish debriefing.
6. If required improve clinical skills. (p.545)

Kolbe et al. (2013) found that the team, through using TeamGAINS, was able to provide positive and negative feedback, and find ways to alter and improve their performance. The facilitator also found that using a model similar to family therapy, helped change behaviors and assisted with the training of the team. This article relates to our PICO question because it examines a method of debriefing that we could use to compare to the Debriefing for Meaningful Learning method.

Strength of this study is that a tool was used to incorporate components of DASH and OSAD, which were both found to be valid. Problems noted in this study are that it does not measure the improvement in clinical or behavioral skills, the population consisted of volunteer participants, and diversity was not mentioned. Another issue is only nine participants completed three of the measurement points, rather than four like the rest of the participants.

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### **Article 5: Lusk and Fater**

Debriefing has been used in a variety of professions: aviation, psychology, education, medicine, and nursing. High fidelity simulation experiences are relatively new to nursing and discovering the best approach to promote student learning is in the developmental stages. Lusk and Fater (2013) did a literature review of 27 publications. According to Polit and Beck (2012), a literature review is Level V on the evidence hierarchy.

This study looked at methods used to promote clinical reasoning. The Outcome Present State Test (OPT) model uses a worksheet to guide students through the changes in the scenario and encourages reflection on decision-making. The Debriefing for Meaningful Learning method includes six steps: “engage, explore, explain, elaborate, evaluate, and extend” (Lusk & Fater, 2013, p. 17). In addition to looking at debriefing methods, this study examined facilitator characteristics, timing, the number of participants, and generalizability of learning.

Students are allowed to explore their thinking and make mistakes without harming a patient in this environment. Debriefing will help correct errors in skills, decision-making, and judgment. According to Lusk and Fater (2013), simulation allows the students to cultivate hands-on knowledge while debriefing helps students to understand the rationale of decisions made and apply the information to other clinical situations.

Findings of this study include the importance of the designated simulation administrator (DSA). The presence of the DSA significantly reinforces high quality simulation based education and theory based debriefing. One problem with this study was that diversity was not discussed. This article relates to our PICO question because it discusses the use of Debriefing for Meaningful Learning and the Outcome Present State Test model for debriefing.

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### **Article 6: Mariani, Cantrell, Meakim, Prieto, and Dreifuerst**

Debriefing after a simulation-based experience is the time when the student's clinical reasoning and judgment skills, through reflective learning can be enhanced. This time also provides the opportunity to integrate quality and safety initiatives into the learning process and outcome of the scenario. It is thought that debriefing students in a systematic and structured process can promote a higher level of reflective learning. The study completed by Mariani, Cantrell, Meakim, Prieto, and Dreifuerst (2013) empirically tested and compared the clinical judgment of students who participated in the structured debriefing sessions, using the Debriefing for Meaningful Learning (DML) as the structured debriefing tool, and students who received unstructured debriefing. This study is a level II mixed-method, randomized control trial according to Polit and Beck (2012). Clinical judgment was measured using the Lasater Clinical Judgment Rubric (LCJR). This tool includes four areas identified for assessment: noticing, interpreting, responding, and reflecting. The LCJR provides a framework for assessing the student's clinical judgment in each of these areas. Within this study, the researchers identified a secondary objective, to explore the student's perception of the various factors of structured debriefing strategy thought to have had an effect on the simulation experience. Focus groups were used to gather the qualitative portion of this study.

A convenience sample of 86 college nursing students in their junior-level of nursing school enrolled in a medical-surgical nursing course voluntarily consented to partake in the study. The students were randomly assigned to clinical groups and then the entire clinical group was placed in either the control piece or the intervention piece of the study. Forty-two students ended up in the intervention group and 44 students were in the control group. The student's clinical judgment was assessed, using the LCJR, at the conclusion of the simulation experience,

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before the debriefing period started. Two simulations occurred, four to five weeks apart, with the LCJR completed at the end of each of those simulations. After the first simulation, the faculty filled out the LCJR on the students, and at the end of the second simulation the researchers filled out the clinical judgment tool on the students. All 86 students were invited to partake in the focus group, only seven students ended up participating in this portion of the study.

There was no statistical significance that could be found between the control group and the intervention group of nursing students. These empirical results would indicate that using a structured debriefing tool, such as the DML, would not make a difference on improving student's clinical judgment skills. The qualitative findings from the focus groups would indicate that the structured debriefing encouraged deeper reflection and meaningful learning to the students. This article directly relates to the PICO(T) question due to the correlation of the structured debriefing, in particular the Debriefing for Meaningful Learning (DML).

This study should be used with caution. There are several notable limitations to the study with a high potential of skewing the results. The first notable limitation is in who filled out the LCJR after each simulation experience. The same faculty member or research member did not do it each time. Another limitation is the number of participants in the focus groups. Only seven students out of 86 chose to participate. The overall homogeneity of the sample of students in terms of age and gender could skew the results. Finally, another limitation is noted to be the time between the first simulation and the second simulation. The students had additional exposure to clinical experiences that might have affected their clinical judgment more so than the structure debriefing they received.

This study showed using the Debriefing for Meaningful Learning method of structured debriefing, measuring student's clinical judgment using the LCJR, was not statistically

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significant. Student's clinical judgment skills were the same with unstructured debriefing. The limitations of the study have been identified and additional research with a more rigorous study design is suggested.

### **Article 7: Paige, Arora, Fernandez, and Seymour**

Simulation-based training is an increasingly acceptable method of training healthcare workers for real world experiences. The use of the simulation-based pedagogy has increased in the last ten years for surgeons, but the most effective feature of simulation, the debriefing process, is often overlooked. The research article by Paige, Arora, Fernandez, and Seymour (2015) explain developing a workshop around a busy surgeon's schedule to train surgeons on the debriefing process of simulation-based training and the effectiveness of the training. According to Polit and Beck (2012) this is a level IV single correlational study.

The workshop was based on Kolb's theory of experiential learning as the conceptual framework to build upon. In Kolb's theory, reflection after an experience, or simulation, offers the opportunity for the learner to reflect upon what took place and to conceptualize the experience in order to manage a real-world situation in the correctly. The workshop was split into two 90 minute sessions. Seven surgeons and one physician assistant, who had extensive experience in surgical education and simulation-based training, led the two groups. The attendees could attend either session, or just one of the two sessions depending on the time the surgeon had available. The first session contained the didactic components and interactive assessments of debriefing videos. The second session included an immersion into a simulation experience involving the post-debriefing. The effectiveness of the workshop was assessed using a pre/post-workshop questionnaire. A Likert scale was used to measure the self-efficacy in relation to the objectives of the workshop.

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According to the pre/post-questionnaires, the participant's level of self-efficacy had a statistical significance in how they felt towards the objectives related to the aspects of debriefing. The confidence of the participants increased related to their ability to identify key components of an effective debriefing, describing the essential phases of the debriefing process, describing the roles and job of the debriefer, utilizing successful debriefing techniques to conduct an effective debriefing, using an assessment tool to evaluate a debriefing and performing an effective debriefing following a simulation-based scenario. Effective debriefing is an essential skill for educators involved in surgical simulation based training, without it learning opportunities are missed. This article supports the PICO(T) related to the issue that debriefing must be done, but does not directly support using structured debriefing. This article supports the idea of training the trainer to make learning how to become an effective debriefer in surgical education.

### **Article 8: Reed**

Simulation provides a learning opportunity for nursing students to work through real world clinical situations where students can practice clinical skills, decision-making, assessment, teamwork, communication, and problem solving. One of the most important parts of simulation is debriefing, the reflective exercise that takes place immediately after the simulated scenario. Debriefing has been described as the reflective period following simulation, it is thought the majority of simulation learning takes place at this time. The best structure for this specific time period has yet to be identified. Evidence is showing the facilitator of the debriefing is a key component, but the structure that best contributes to learning has not been answered, this includes how to debrief and when to debrief. The research article by Reed (2105) explored the addition of written debriefing to the debriefing experience. According to Polit and Beck (2012), this is a level II single randomized control study.



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This was an experimental design used to compare nursing student's experiences between three different types of debriefing. These three types are discussion debriefing only, discussion debriefing followed by blogging, and discussion debriefing followed by journaling. This was a convenience sample of 58 nursing students in an obstetric nursing course attending a baccalaureate nursing program. The students used the Debriefing Experience Scale, which is a tool designed to evaluate the nursing student's experience during the debriefing. The students were randomly assigned to one of the three groups. Following a 35 minute simulation, all groups of students had 20 minutes of discussion debriefing. The discussion debriefing followed a structured format with five standard questions. The groups that had to blog and journal, the written portion of the debriefing, used the same five questions to guide this version of debriefing.

The results indicate the students prefer discussion only to blogging or journaling in debriefing. The students in the study did not see any additional benefit from the addition of the written debriefing component following a discussion debriefing after simulation. The discussion debriefing method used in this study was a structured debriefing using five specific prompts. This study directly supports the PICO(T) due to the structured format of debriefing. Students preferred the discussion debriefing over the additional written debriefing using the same five question prompts and identified there were not additional benefits from the added work of writing.

### **Article 9: Wazonis**

Wazonis (2014) systematically reviewed twenty-eight articles to assess the methods and evaluation of simulation debriefing along with descriptions of the interrelationships between methods. This systematic review of correlational/observational studies would be appraised at a level III according Polit and Beck (2012) evidence hierarchy. The reviewer used a

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comprehensive search, inclusive of broad key debriefing terms, and a second narrow search specific to debriefing tools. Included in the article appendix is a table of key terms searched, and article each term is associated with. The sample of articles is not exclusive to nursing simulation education. Seven of the 28 articles are research based experimental studies; the remaining articles are expert opinions, abstracts, presentations, papers, and worksheets. The quality of the articles chosen for inclusion was not clearly stated. Waznosis (2014) clarified debriefing terminology to ensure consistent understanding and use of terminology.

The reviewer did not specify a clear technique to compare the articles; the review identified the differences in methods, but no clear comparison of strengths and weaknesses of the different methods. A single reviewer limits the objectivity and inclusivity of data analysis. While this article provided an overview of debriefing methods, there was minimal research on the effectiveness of each method reviewed. This article failed to provide evidence to support the PICO(T) question of the effectiveness of the DML compared to other methods of debriefing, yet it did provide an overview of other debriefing methods.

Overall, it was found that there are various methods of debriefing and inconsistencies associated with those various methods in simulation education. This supports the need for a standardized evidence-based debriefing tool that is reliable and valid to positively influence learning during high fidelity simulation debriefing. The article does not provide any process to guide the implementation of standardizing debriefing for nursing simulation, or clear implications of this research for nursing education.

### **Synthesis Discussion of Evidence**

The articles by Dreifuerst (2012) and Reed (2015) both support the use of the Debriefing for Meaningful Learning (DML). The randomized controlled trial by Dreifuerst (2012) is

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strengthen by the large sample size and the repeatability of the study. According to Reed (2015) providing verbal debriefing shortly after simulation supports the use of the DML.

Chronister & Brown (2012), Mariani, Cantrell, Meakim, Prieto, & Dreifuerst (2013), and Lusk & Fater (2013) agree it is beneficial to use a structured debriefing method, but did not specify the DML. Paige, Arora, Fernandez, & Seymour (2015) and Kolbe et al. (2013) studied the attitude and technique used in the structured debriefing method. Although the DML was not utilized in these studies, the use of structured debriefing, and a safe, inclusive debriefer was shown to develop critical thinking skills.

The literature review by Wazonis, (2014) is a starting point for professionals to begin understanding the debriefing process, but did not support structured debriefing. Fey & Jenkins (2015) recommend more research should be conducted regarding best practices for debriefing and debriefers. Comprehensive research comparing debriefing methods was not available.

### **New Understanding Generated by the Evidence**

This literature review was done in an attempt to determine the effectiveness of simulation debriefing methods, specifically the Debriefing for Meaningful Learning tool. Mixed results were found in the articles that were reviewed. Due to the issue of structured simulation debriefing being relatively new to the field of nursing, there was varying types of information. The new understanding derived from this literature review is that structured debriefing methods are needed, and that the instructors' demeanor affects student learning and involvement in discussion. There is a clear indication that more debriefing research and development is necessary. The development of structured debriefing tools and evaluation methods are two key areas that are identified specifically by the PICO question.

**Limitations**

Limitations found in several articles are related to the small limited samples. A lack of diversity in the sample populations is an identified issue. There is a lack of consistency in the methods used for debriefing simulation, in addition to a lack of consistent tools to measure student outcomes. Another limitation is the inconsistency related to the type of high-fidelity manikins used.

**Implications and Impact of Evidence**

The setting implications for simulation debriefing would include providing a private area for the discussion immediately after the simulation scenario. The instructor needs to set a tone of safety and inclusiveness in the debriefing setting. According to Kolbe et, al. (2013) and Fey and Jenkins (2015), a positive learning environment is needed to improve student results. The positive environment encourages participation and discussion among the students.

Stakeholders include nurse educators, program directors, students, employers, patients, and funding sources. From the literature review, there are positive implications for all of the above-listed stakeholders. Structured debriefing promotes improved student learning as evidenced by student evaluation, and transference. Transference of information from the theory to the clinical setting is improved with guided debriefing (Reed, 2015). The structured debriefing assists in assuring the simulation debriefer is on task reviewing each objective of the simulation. The structured debriefing benefits employers by ensuring hiring competent bedside nurses, thus increasing patient satisfaction. Further funding should be used to promote research to study and develop structured debriefing tools.

To measure the cost effectiveness of the debriefing methods; further long-term research is needed to evaluate the cost benefits of using simulation and therefore, structured debriefing in

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the simulation. The goal of the simulation is to put the student nurse in a real-life scenario that creates a safe environment for the student to apply theory to practice, with the hope of improving clinical judgment and critical thinking. The nurse with excellent critical judgment can assist in decreasing costs related to equipment needs, intervening before a client needs resuscitation, or allocating resources for the client appropriately. Formal debriefing in the pedagogy of simulation is a newer form of education, and further evidence-based research is needed to evaluate and support the benefits related to critical thinking and clinical judgment.

The use of structured debriefing should be considered a benefit to QSEN (Quality and Safety Education in Nursing) competencies. Specific scenarios can be written with objectives that focus on specific safety needs in nursing. Structured debriefing assists in guiding students towards the targeted safety objectives. Utilizing these competencies assure the safety objectives are identified and discussed during the debriefing period of the simulation. Structured debriefing is another avenue to ensure that quality and safety for the undergraduate nursing student is taught and emphasized in the nursing curriculum.

### **Future Recommendations for Nursing Research**

Future recommendations for nursing research would include conducting further studies evaluating not only the DML, but other standardized and non-standardized debriefing methods. Utilization of the DASH debriefing assessment tool as a standard for the measurement of debriefing effectiveness would establish a standardized, reliable, and valid tool for measuring debriefing effectiveness (Dreifurest, 2012). Another area in nursing research that should be investigated is the development and creation of additional tools to perform debriefing and debriefing evaluation. In reviewing the literature, structured debriefing created better learning

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outcomes than unstructured debriefing. With the development of new tools, additional research is needed to investigate if such tools are reliable and valid to utilize in nursing education.

### **Future Recommendations for Nursing Education**

Nursing Education is identified as the primary population that has the potential to benefit from the evidence and research obtained during this review. Nursing education needs to incorporate simulation and structured simulation debriefing into its programming and educational curriculum. Recommendations include the utilization of a standardized method of simulation debriefing that is reliable and promotes critical thinking, clinical judgment skills, and problem-solving skills. Nurse educators need to have research that supports the implementation of such debriefing tools to facilitate student learning.

Upon conclusion of the literature review, the use of structured simulation debriefing in nursing education has the potential to have a positive impact on student learning. Nurse educators need to have a clear understanding of the purpose, desired outcomes, and the process of debriefing to ensure quality active-learning. Initial and ongoing training for those who lead simulation debriefing is recommended to ensure reliability and repeatability of learning from structured debriefing. Education professionals need to be adequately trained to perform debriefing effectively and should have available training opportunities. Educators must remain current on the evolution of teaching pedagogies and student learning styles that best facilitate the transference and application of knowledge from education into practice through the use of simulation debriefing.

### **Future Recommendations for Nursing Administration**

Nursing administrators are charged with being current on most recent evidence-based changes and recommendations in education and practice. Administrators need to take a strong

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leadership position to be knowledgeable and take steps to implement and incorporate new evidence-based research into education and practice. Those in leadership have the ability to promote and enhance evidence-based change, or they have the potential to delay beneficial changes. Nursing school administrators should actively work towards identifying and incorporating the pedagogy of simulation first, and then use an evidenced-based method of structured debriefing. Leaders in nursing education need to promote and provide opportunities for faculty training, and support faculty as this type of teaching strategy is utilized.

Administrators in nursing practice can also use this evidence to influence situational events that would require reflective learning or the emotional debriefing of health care professionals who experience or witness a traumatic event. Situational debriefing may have a different objective than educational simulation debriefing, and thus may need a differently structured set of debriefing questions. For a quality process or quality education, nursing leadership and administration must be proactive in facilitating and implementing these recommended changes.

### **Future Recommendations for Nursing Practice**

Nursing practice was one area of this research that was not directly discussed. Indirectly, the nursing practice can be influenced by the quality of the educational experiences and student outcomes. The quality learning experiences in nursing education can impact the critical thinking and problem-solving ability of those who enter nursing practice as new graduate nurses. Additionally, it would be recommended that debriefing is further researched on how it can be used in professional development and situational issues where nursing professionals may need formal debriefing to discuss a traumatic or problematic situation in practice. It is suggested that

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nursing practice investigates the use of debriefing to assess the factors that precipitate practice errors in an attempt to plan and prevent future mistakes.

### **Conclusion**

As this literature analysis was completed, the research concluded a structured debriefing process improved student-learning outcomes of critical thinking and problem-solving abilities. The research did not specifically support that the Debriefing for Meaningful Learning (DML) was the single most effective method of debriefing. Many limitations contributed to the reliability of the research information including small sample sizes, different methods of evaluating the debriefing, lack of training for those conducting the debriefing, and different educational levels of students.

While the pedagogy of simulation is being increasingly utilized, as it is newer to nursing; the process from pre-brief, actual simulation scenario, and the debriefing process is essential to the overall success of the learning outcomes. Debriefing is identified as the key reflective learning strategy that allows the students to achieve success (Wazonis, 2014). It is more important than ever that debriefing is not a random quick discussion, but a thorough, comprehensive, and effective opportunity for learning. Evidence in the literature analysis shows that the incorporation of a structured plan, and set of debriefing questions improves student learning outcomes. Best practice using simulation debriefing needs to be determined, yet promising research supports continued investigation for the improvement of student learning utilizing simulation and simulation debriefing.



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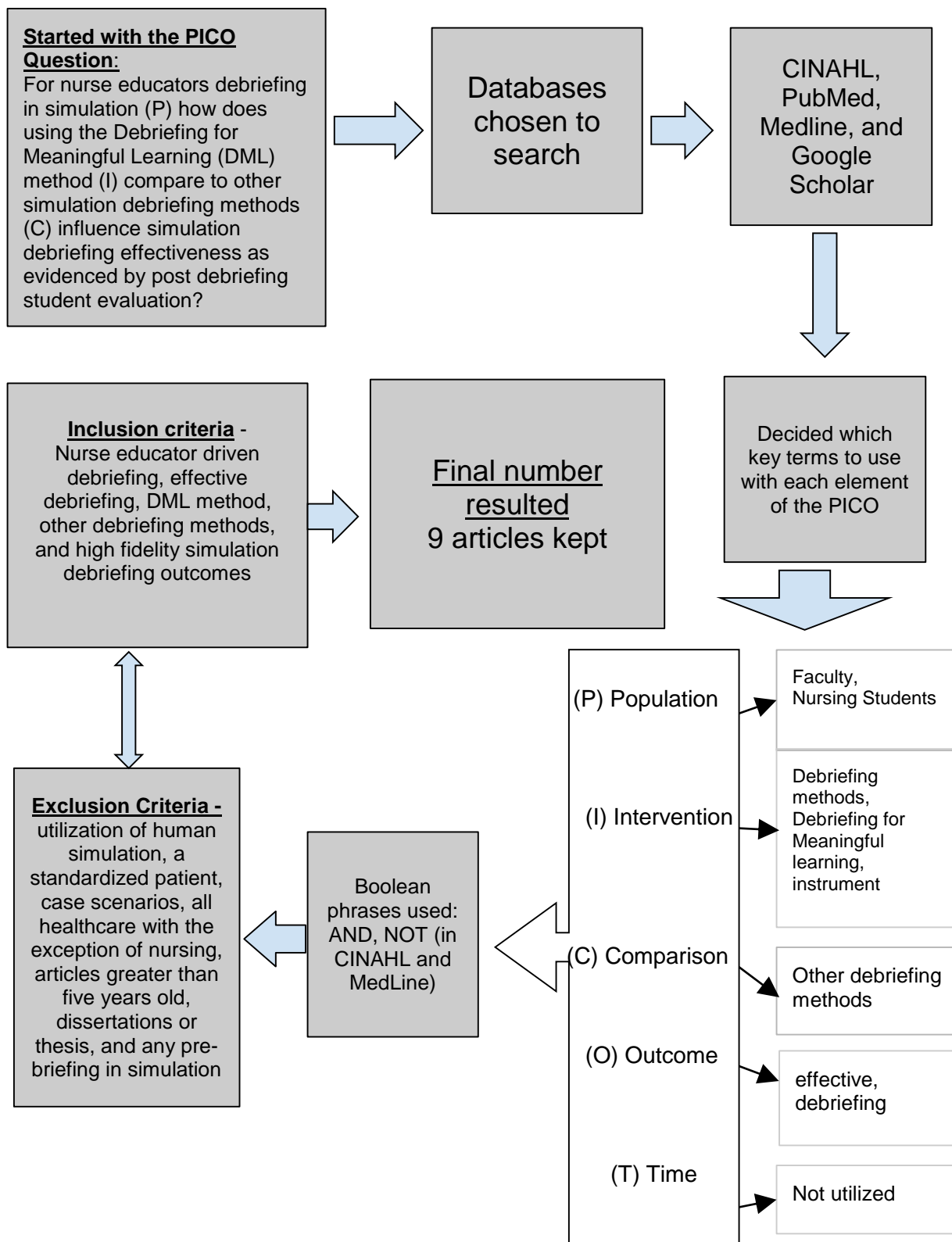
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Appendix A: Search Flow Diagram

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Appendix B: Critical Appraisal Tables

### Critical Appraisal of Chronister and Brown

**Citation:** Chronister, C., & Brown, D. (2012). Comparison of simulation debriefing methods. *Clinical Simulation In Nursing*, 8(7), e281-e288.

**Study purpose or research questions:** Compare the outcomes of skill quality, skill response time and knowledge retention in video assisted debriefing versus verbal only debriefing.

**Level of evidence:** Level 2 Single RCT (Polit & Beck, 2012)

#### Study validity:

Validity analysis criteria	Mark an x if very serious concerns	Your comments re major strengths and weaknesses +Strengths -Weaknesses
Problem and purpose statements		+Determine if there is a measureable skill and response differences between verbal only and video assisted debriefing. -This was a pilot study.
Design		-A cross overdesign with repeat experiences to a Cardio Pulmonary Arrest (CPA). I felt that this design did not clearly keep the experimental and control groups independent of each other because the design had one group receive video assist debriefing during the first simulation the other did not, and in the repeat simulation a week later, the group who received the video assist, did not, and the group that did not receive it initially then reviewed the video assist. While I understand the group may offer insight into comparison, the measurement of learning could then be skewed.
Ethical issues		+ University IRB was obtained, written consent from students. - Limited sample and diversity noted.
Sample and setting <ul style="list-style-type: none"> <li>• Inclusion and exclusion criteria</li> <li>• Selection method (random selection or assignment, convenience)</li> <li>• Size of n</li> </ul>	X	-A convenience sample of 37 BSN (n=37) students (89%) women were recruited. They were senior level students. Inclusion criteria were first time enrollees into the critical care course and in the second half of the fall semester. All the participants had five 90 minute echocardiogram classes, and 20 hours of classroom lecture. Random assignment to groups took place. -I feel this sample was not statically sampled and reflects a true sample of the university student population, much less a larger representation of student nurses.

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Measurement tools		<p>+The Emergency Response Performance Tool (ERPT) was used to measure skill performance on 19 indicators. It was documented that confidence measures were (r-.87 and Cronbach's <math>\alpha</math>= 0.92 respectively).</p> <p>+Basic level validity and reliability were reported in the article.</p> <p>Faculty that used the ERPT was trained to ensure inter-rater reliability a three hour training and repeat recorded performances were evaluated by the faculty. I feel that this was a good practice to ensure those evaluating students were consistent. Also different raters would review the video recorded CPA and with it was inter-rater reliability was 90%. 90% was agreed was an acceptable threshold for the inter-rater reliability</p> <p>-Student ability and motivation could have an impact on the limitations of this study.</p>
Data collection		<p>+The students were scored on the ERPT during both simulations.</p> <p>+A ten item test was used to measure knowledge taken both pre and post debriefing sessions.</p> <p>- The measurement was the different between the two groups and times. I feel, while the students may have the same experiential background, the student performance and motivation can have a large impact on the results of this small of a study.</p>
Procedures	X	<p>-The simulation and repeat simulation situation with video assisted for one group the first time through and for the other group the second time through. I thought there were many variables in this procedure, it was hard to know exactly was the research wanted to know.</p>
Data analysis		<p>+This data analysis had a significance level set a <math>p &lt; .10</math> due to the small sample size. What I found the most interesting was the p values were statistically significant for only the second time run through the scenario in the combined CPR, Shock, and complete scenario. The response to VT time and airway management were not statistically significant at all with either type of debriefing as well as repeating the scenario.</p>
Findings (discussion of results) and Interpretation of findings : conclusions of what is true ,		<p>+It was interesting because what was found was that the repeat of the simulation and the improvement in performance was statistically significant, yet the while the times were slightly faster in the video debriefed group it was not identified as statistically significant.</p>



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implications of conclusions		Which would indicate that the used of repeating a simulation would offer knowledge retention and improvement in skill performance.
Recommendations based on implications		+What I see as recommendation is that repeating complex emergency response simulation scenarios could have an impact on specific skills and knowledge retention. -I have to be weary of this article due to the limitations of the study and very small and lack of diversity sample that was used.
Presentation		+Tables were used well, was easy to read. - My biggest concern was the method of evaluation. There were two factors that ended up being evaluated, yet it appears as if the researcher wanted to evaluate just the variance between the verbal only and video assisted debriefing.
Credentials of the researcher		Connie Chronister RN, MSN, CCRN Diane Brown RN, MSN, CCRN
Assessment of validity of findings.		While I feel the researchers took steps to ensure reliability of the raters performing the ERPT, the validity is not supported a statistically relevant population sample. The convenience sample was used in the pilot study, which provides a basis on which to direct further research and study.

**Study Reliability:**

**What are the results?** What are the statistical answers to the research questions (statistical significance)? Results were not specific to the type of debriefing (verbal vs. non verbal), but to the repetition of the simulation.

**What is the clinical significance of the results?** As an educator I would see the potential in using the repeat simulation situation to reinforce skills and knowledge, yet I would be cautious due to the limitations of this study.

**Applicability:** This would be applicable to nursing and EMS faculty working in clinical simulation settings.

**Overall Comments on validity and reliability:** Overall I found this article interesting, yet appraising the research found many limitations and research that did not fully support the question presented. I did value that the research did show and was statistically significant the use of repeating simulation after either method of debriefing. This could further be used to research how other and different debriefing methods impact the performance on a repeat simulation.

**Critical Appraisal of Dreifuerst**

**Citation:** Dreifuerst, K. T. (2012). Using debriefing for meaningful learning to foster development of clinical reasoning in simulation. *Journal of Nursing Education*, 51(6), 326-333.

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**Study purpose or research questions:** To compare and evaluate clinical reasoning after debriefing using the Debriefing for Meaningful Learning tool and not using the DML tool.

**Level of evidence:** Level two, single RCT (Polit and Beck, 2012).

**Study validity:**

Validity analysis criteria	Mark an x if very serious concerns	Your comments re major strengths and weaknesses + Strengths - Weaknesses
Problem and purpose statements		+This study questions if the DML develops greater clinical reasoning skills than traditional methods. + Target audience is nursing educators.
Theoretical base from lit review and conceptual framework and concept definitions		+/-Noted scarce literature to draw comprehensive framework, yet the literature framework identifies deficiencies and inconsistencies in the structure and method of debriefing in high fidelity nursing simulation. -Definitions and variances in terminology not specifically addressed.
Design		+Exploratory quasi-experimental, pretest, post-test study to evaluate the relationship of using the DML in the development in clinical reasoning.
Ethical issues		+Approval from university IRB. -Very limited diversity.
Sample and setting <ul style="list-style-type: none"> <li>• Inclusion and exclusion criteria</li> <li>• Selection method (random selection or assignment, convenience)</li> <li>• Size of n</li> </ul>		+Sample included 238 undergraduate BSN, pre-licensure nursing students enrolled in seventh semester of eight semester program. Three different sets of student during the same semester, same syllabus, same faculty and the Welch and Brow-Forsythe robust test measured and supported the 3 groups combined for equality. The large combined set had a $p < .10$ with a medium effect and a type 2 error 0.01 and increase in power to 99%. Research took place during clinical simulation. Clinical groups were randomly assigned control or experimental. This sample represented the enrollment for the midwestern university BSN program. Experimental n - 120 Control n – 118
Measurement tools		+Health Sciences Reasoning Test (HSRT) (a high level of reliability was determined in this study). This tool was used to evaluate the clinical reasoning abilities measure both pre and post simulation debriefing.

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		<p>+Debriefing Assessment for Simulation in Healthcare (DASH) (very good reliability determined in this study). This tool was used post debriefing to measure the quality of the debriefing activity.</p> <p>+Debriefing for Meaningful Learning Supplemental Questions (DMLSQ). These questions were used for statistical analysis of the DML.</p>
Data collection		<p>+All students completed the 33 item HSRT 3 weeks prior to the experience and six online demographic questions. Post high fidelity simulation (HFS) the groups were divided into control and experimental groups when the debriefing took place. Immediately post debrief all students took the DASH and the DMLSQ and 3 weeks later took a second version of the HSRT as a post-test and a second opportunity to respond to the DMLSQ.</p>
Procedures		<p>+Pre and post-tests of the HRST and the DASH and DMLSQ after the HFS. Students took the evaluations</p>
Data analysis		<p>+A change in HRST test scores was used to measure clinical reasoning in the control and experimental groups. The null hypothesis was rejected (there would be no difference in test scores). There was a change in mean test scores that were statistically significant. The DML tool showed statistical significance to the HRST scores.</p> <p>+The DASH was a single post simulation evaluation tool. The results of the statistics were also significant indicated that the experimental group viewed the debriefing quality differently than the control group. Again the null hypothesis (there would not be any difference in perceived quality of debriefing) was rejected.</p> <p>+A third question was the relationship between the results of the HRST and the DASH and the null hypothesis was that there would not be any relationships in the change in quality, this hypothesis was also rejected when it was assessed that there was a relationship between greater clinical reasoning skills and quality debriefing.</p>
Findings (discussion of results) and Interpretation of findings : conclusions of what is true ,		<p>+The students exposed to the DML overall had a better score on the clinical reasoning test than those who didn't use the DML, in addition the students exposed to the DML viewed the quality of debriefing better than those who didn't. It also discussed that it was not the</p>

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implications of conclusions		specific content being measured, but the students' ability to think in the clinical setting. +The study also evaluated if there was a direct relationship between the used of the DML and the measurement of debriefing quality. A direct relationship was identified. So based on this sample one could conclude that the DML is a tool that improves the quality of debriefing and post simulation clinical reasoning skills compared to other methods. +An implication would be that nursing faculty that are facilitating debriefing can have a tool that improves the learning outcomes and clinical reasoning from the HFS.
Recommendations based on implications		While this study is limited to the sample size, demographics, and geographical location; it would suggest that the incorporation of the DML into nursing HFS debriefing can improve student clinical reasoning and improve the quality of debriefing.
Presentation		+Tables were used to identify the demographics, age, and correlation between the HRST and the DASH on quality. - I would have liked to see additional charts or tables to visually measure the degree of improvement compared to the control group.
Credentials of the researcher		Kristina Thomas Dreifurest, PhD, ACNS-BC, CNE Assistant Professor at Indiana University
Assessment of validity of findings.		For nursing education faculty working with HFS the findings are statistically significant yet the sample size was reflective of the Midwestern university of pre-licensure BSN students. Large multi-site studies would need to be performed to establish consistent reliability. The study provided a foundation to further examine the DML to provide consistent high quality debriefing in nursing education HFS programs.

**Study Reliability:****What are the results? What are the statistical answers to the research questions ?**

Question one - Change in mean HRST test scores from the Mann-Whitney-Wilcoxon test were statistically significant –  $U = 3973.5$ ,  $W = 10759.5$ ,  $Z = -6.059$ , and  $p = 0.000$ . Covariance analysis was  $F(1,237) = 28.55$ ,  $p < 0.05$ , with a large effect size of 0.84

Question two – DASH-SV responses the Mann-Whitney-Wilcoxon and Kruskal-Wallis statistical tests were used, experimental group ( $n = 120$ ,  $M = 5.58$ ,  $SD = 2.90$ ) the control ( $n = 118$ ,  $M = 4.23$ ,  $SD = 0.46$ ).

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Question three – Statistically the significance between the perceived quality and performance on the HRST. Which was proven on table 3 in the article with the exception of DASH element #1 and the DMLSQ worksheet.

**Applicability:** This information is applicable to guide future research in the development of standardized HFS debriefing tools. This study provided a starting point to identify the issue of effective debriefing and methods that are more effective than others. A standardized tool can provide nurse educators with a guide to facilitate debriefing, promote learning, and in the future develop a measurement tool for measuring learning in simulation.

**Overall Comments on validity and reliability:** Small sample size; the sample was limited to a very narrow spectrum of students as well as geographical location. Limited diversity; as noted in the demographics table, there was a very big percentage of female Caucasian participates, which in this study was reflective of the midwestern university undergraduate nursing students, but may not be reflective of a larger population variable. Faculty experience and training on the debriefing methods is also an unknown variable and how would that impact on the implementation of the DML tool or other debriefing tools. It was indicated that the reviewer was also the debriefing faculty, which may not appropriately reflect the variable nursing faculty that would be using this method.

### Critical Appraisal of Fey and Jenkins

**Citation:** Fey, M. K., & Jenkins, L. S. (2015). Debriefing practices in nursing education programs: Results from a national study. *Nursing Education Perspectives*, 36(6), 361-366

**Study purpose or research questions:** The purpose of the study was to describe debriefing practices in nursing education programs in the United States.

**Level of evidence:** Single correlation/ observational study Level IV

#### Study validity:

Validity/analysis criteria	Mark an x if very serious concerns	Your comments re major strengths and weaknesses
Problem and purpose statements		+The purpose of the study was to describe debriefing practices in nursing education programs in the United States.
Theoretical base from lit review and conceptual framework and concept definitions		+Debriefing is a reflective discussion that attempts to bridge gaps between experiencing an event and make sense of it. +Kolb's theory
Design		+/- Cross section internet based survey.
Ethical issues		- Diversity of the population is not discussed.
Sample and setting		+The sample is 1440.

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<ul style="list-style-type: none"> <li>• Inclusion and exclusion criteria</li> <li>• Selection method (random selection or assignment, convenience)</li> <li>• Size of n</li> </ul>		<p>+The setting is accredited pre-licensure nursing programs.</p> <p>+The inclusion all pre-license nursing programs (associate, baccalaureate and diploma)</p> <p>+/-The exclusion criteria were simulations done for teaching isolation psychomotor skills and simulation done for summative assessment. The programs that did not answer the survey were excluded.</p> <p>+Dean or program directors were sent email invitation</p> <p>-2 reminders at 2 week intervals.</p> <p>+The size of n =502.</p>
Measurement tools		+Survey based on Kolb's theory
Data collection		+286 completed surveys were required in order to have an adequate sample size based on a 95 percent confidence interval for margin of error and maximum variation in responses to the questions of interest. 502 programs returned surveys.
Procedures		<p>+Surveys were sent to every accredited pre-licensure nursing program in the United States.</p> <p>+Regression analysis determined variables that were associated with the use of theory based debriefing.</p>
Data analysis		+This study determined that most de-briefers do not have training in debriefing and that their competence was not assessed. Factor associated with the use of theory- based debriefing included the presence of a designated simulation administrator, training for de-briefers and competence assessment of de-briefers.
Findings (discussion of results) and Interpretation of findings : conclusions of what is true , implications of conclusions		<p>+Of the 502 programs that returned surveys—484 reported using simulations. 75% of school used a designated simulation administrator (DSA) (who is a RN devoting half or more of their work to simulation.</p> <p>-Fewer than half (47.5) of all de-briefers had any training and only 19 percent of schools assessed the competence of their de-briefers.</p> <p>+Although 34.3 percent of responding programs reported that a theory or model guided their debriefing practices. The data were examined to determine whether debriefing practices were consistent with Kolb's Experiential Learning Theory—82% met the criteria for practicing theory base debriefing.</p> <p>+Programs with a dedicated DSA were twice as likely to practice Theory Based Debriefing (TBD).</p>

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Recommendations based on implications		+The importance of the DSA as the driver of high quality simulation based education is clear. +Because the presence of a DSA is significantly associated with the use of theory based debriefing, deans and program directors should give consideration to establishing a faculty position that has oversight of the simulation program. + Future research should aim at identifying more specific training models and content that have an impact on learning outcomes.
Presentation		Published in Nursing Educator Perspectives
Credentials of the researcher		Mary K. Fey, PhD., RN, CHSE Louise S. Jenkins PHD, RN, FAHA ANEF
Assessment of validity of findings.		- The data collected was self-reported. - Since observation of debriefing sessions was estimated the frequency may be challenged. - Using only one theoretical framework may have limited information.

**Study Reliability:** This study does not discuss diversity and the sample was gathered from a voluntary sample of schools. These results may not be repeated.

What are the results? What are the statistical answers to the research questions (statistical significance)? Programs with a dedicated DSA were twice as likely to practice TBD  $p < .01$ . The association between the use of TBD with formal training in simulation still remained once age was accounted for.  $p = .01$  Nursing programs in which debriefing followed structure were 3.2 times more likely to practice TBD most of the time.  $p < .01$ . Programs that assessed competences of all de-briefers were 4.2 times more likely to use debriefing practices consistent with Kolb's theory.  $p < .01$ .

**What is the clinical significance of the results?** This clinical significance of this article is that simulation is being used in nursing education currently, but method of debriefings varies and competency of de-briefers is not always being assessed.

**Applicability:** This study can be used guide training and make recommendations to administrators.

**Overall Comments on validity and reliability:** This study did find what current practices are being used for debriefing, but the information gathered is reported by the programs, rather than by an observer. This study doesn't mention the diversity of the population survey, so the result may not be able generalized to all programs.

### Critical Appraisal of Kolbe, Weiss, Grote, Darnbach, Spahn, and Grande

**Citation:** Kolbe, M., Weiss, M., Grote, G., Knauth, A., Dambach, M., Spahn, D. R., & Grande, B. (2013). TeamGAINS: a tool for structured debriefings for simulation based team trainings. *BMJ Quality and Safety* 22(7), 541-553.

**Study purpose or research questions:** Introduction of a debriefing structure that combines the advantages of guided team self-correction, advocacy inquiry and the systemic-constructivist

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approach. Based on previous debriefing work, we have developed this debriefing structure for trainings aiming at teaching clinical as well as behavioral skills as we think they should best be trained interactively.

**Level of evidence:** Single correlational/observation study. Level IV

**Study validity:**

Validity analysis criteria	Mark an x if very serious concerns	Your comments re major strengths and weaknesses
Problem and purpose statements		+Introduction of a debriefing structure that combines the advantages of guided team self-correction, advocacy inquiry and the systemic-constructivist approach. To teach clinical and behavioral skills in training. Based on previous debriefing work; we have developed this debriefing structure for trainings aiming at teaching clinical as well as behavioral skills as we think they should best be trained integratively.
Theoretical base from lit review and conceptual framework and concept definitions		+The conceptual frameworks identified in the literature review: + Instructor versus learner guided briefing, training for instructors, structured debriefing techniques, and best practices for debriefings,
Design		+/-No control group study designs.
Ethical issues		-Diversity was not discussed in this study.
Sample and setting <ul style="list-style-type: none"> <li>• Inclusion and exclusion criteria</li> <li>• Selection method (random selection or assignment, convenience)</li> <li>• Size of n</li> </ul>		+/-The sample was 61 trainees. Voluntary participants +The setting was that debriefing was administered during a full-day simulation based training course in a Swiss teaching hospital. +/-No Exclusion criteria noted. +Even 9 trainees who only participated in three of the four measurement points were included. All participants were volunteers. +/-Participants were assigned to groups. +Size of n=61.
Measurement tools		+Self-reporting quality debriefing scale—Used components of DASH and OSAD.
Data collection		+5 point Likert scale for self- reporting and 6 point Likert—trainee reactions.
Procedures		+ Participants describe feelings and emotion related to simulation. +Clinical part of simulation discussed.



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		<ul style="list-style-type: none"> <li>+Transfer of simulation to reality.</li> <li>+Instructor reintroduces the expert model—discuss behavior and relationship skills related to clinical performance.</li> <li>+Summary of debriefing.</li> <li>+Practice clinical skill if needed.</li> </ul>
Data analysis		<ul style="list-style-type: none"> <li>+All 4 measurement points of debriefing quality scale positively correlated with the trainee reaction scale. No significant relationship between age, sex, years of work experience, job role and debriefing quality.</li> <li>Psychological safety and inclusiveness significantly increased with debriefing.</li> </ul>
Findings (discussion of results) and Interpretation of findings : conclusions of what is true , implications of conclusions		<ul style="list-style-type: none"> <li>+All 4 measurement points of debriefing quality scale positively correlated with the trainee reaction scale ( <math>p &lt; 0.01</math>). No significant relationship between age, sex, years of work experience, job role and debriefing quality. (<math>p &gt; 0.17</math>) Psychological safety and inclusiveness significantly increased with debriefing.</li> <li>A two two-sided paired t-tests. +The results indicate that psychological safety significantly increased from t1 (M=3.36, SD=0.63) to t2 (M=3.48, SD=0.54); <math>t(59) = -2.26</math>, <math>p = 0.028</math> (95% CI -0.22 to -0.01).</li> <li>Likewise, leader inclusiveness increased from t1 (M=3.21, SD=0.68) to t2 (M=3.33, SD=0.56); <math>t(60) = -2.07</math>, <math>p = 0.048</math> (95% CI -0.23 to -0.003).</li> </ul>
Recommendations based on implications		<ul style="list-style-type: none"> <li>+TeamGAINS could be useful to debriefing method for doctor and nurses to promote psychological safety, clinical and behavioral skills.</li> </ul>
Presentation		<ul style="list-style-type: none"> <li>+The tables and graphics were easy to read and understand.</li> </ul>
Credentials of the researcher		<ul style="list-style-type: none"> <li>+Prof. Dr. M. Kolbe, M. Weiss PhD, Prof. Dr. G. Grote, A. Knauth MD. M. Dambach, MD . D. R. Spahn, MD, B. Grande MD</li> </ul>
Assessment of validity of findings.		<ul style="list-style-type: none"> <li>+/-The study uses DASH and OSAD were both found to be valid, but the study does not measure the improvement in clinical or behavioral skills.</li> </ul>

**Study Reliability:** It is uncertain that this study could be replicated, because all of the participants volunteered to be in the study. There is no measure of improvement in the clinical or behavioral skills. This study doesn't have a diverse population.

What are the statistical answers to the research questions (statistical significance)? There is a positive correlation between trainee reaction and debriefing quality. Psychological safety and inclusiveness increased with this debriefing method. The clinical and behavior skills were not measured in this study.

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**What is the clinical significance of the results?** This study gives guidance on how to debrief simulation experiences in a safe and inclusive way for participants. Simulation experiences are being used more frequently in nursing education.

**Applicability:** This study is not generalizable because it took place in one hospital with participants who volunteered and were not of diverse population.

**Overall Comments on validity and reliability:** The study uses DASH and OSAD were both found to be valid, but the study does not measure the improvement in clinical or behavioral skills. The study did not have control group to compare simulation methods.

### Critical Appraisal of Lusk and Fater

**Citation:** Lusk, J.,M. & Fater, K. Postsimulation debriefing to maximize clinical judgment development. *Nurse Educator*. (2013); 38(1):16-19

**Purpose:** The literature review of debriefing and other disciplines, the authors suggest strategies that optimize debriefing after simulation as a means to promote clinical judgment among nursing students.

**Level of evidence:** Systematic review of descriptive/ qualitative/physiologic studies. Level V.

#### Study validity:

Aspect of study	Comments of strengths and weaknesses
Problem and research questions	+It is not clear how debriefing can be structured to promote clinical judgment. +What type of debriefing that promotes clinical judgment?
Theoretical base: Literature review completed, conceptual underpinning	+/-Literature review completed. + “The structure for debriefing must be founded on the previous knowledge developed in clinical judgment development.” +Tanners model of thinking like a nurse.
Ethical issues	-Bias in selection sample in Debriefing for Meaningful Learning article
Design and tradition	Grounded theory is the design
Sample and setting	+27 publications contributed to this review.
Data collection and procedures	Electronic search of CINAHL, PsycINFO, MEDLINE using the words—debriefing, simulation, and simulation teaching. Hand search was done then to expand relevant
Rigor	-There is a lack of statistical citations in this paper to show a correlation been structure debriefing and promotion of clinical judgment. -Lack of an instrument to measure clinical reasoning.
Data analysis	-No data analysis present.
Findings and theoretical integration	+Students scored higher in clinical reasoning when using Debriefing for Meaningful Learning

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	<ul style="list-style-type: none"> <li>+Using Tanner's steps... reflecting, noticing, interpreting, responding and reflecting enhance the student's ability to use theoretical information in nursing practice.</li> <li>+The final outcome of such a structured process is improved clinical judgement or thinking like a nurse.</li> </ul>
Interpretations, implications and recommendations	<ul style="list-style-type: none"> <li>+The environment need to be safe and non- judgmental.</li> <li>+Debriefing needs adequate time and planning.</li> <li>+ Transfer of learning to other situations needs to be included.</li> <li>+Groups size smaller than 14.</li> <li>+A structured framework need.</li> </ul>
Global issues	<ul style="list-style-type: none"> <li>-This may be difficult to generalize due to selection bias and information gathered from other disciplines.</li> </ul>

**Overall Comments from analysis:** Looked at other disciplines who have been using debriefing longer than nursing. Students using the Debriefing for Meaningful Learning method scored higher in clinical reasoning, but two major limitations were noted: lack of instrument to measure clinical reasoning in nursing and bias selection of the sample. The results may not be generalizable or transferable to other populations. The lack of statistical data is a drawback to this article also.

### Critical Appraisal of Mariani, Cantrell, Meakim, Prieto, and Dreifuerst

**Citation:** Mariani, B., Cantrell, M. A., Meakim, C., Prieto, P., & Dreifuerst, K. T. (2013). Structured debriefing and students' clinical judgment abilities in simulation. *Clinical Simulation In Nursing*, 9(5), e147-55.

**Study purpose or research questions:** Two research questions were addressed: 1. Is there a difference in clinical judgment, as measured by the Lasater Clinical Judgment Rubric (LCJR) between students who received a structured debriefing session (DML) and students who did not receive a structured debriefing session? 2. Do students perceive that the role of the person conducting debriefing, the timing, the length, the method, and the effectiveness of the debriefing affected the benefit of the clinical experience?

**Level of evidence:** Level II (Polit and Beck, 2008)

#### Study validity:

Validity analysis criteria	Mark an x if very serious concerns	Your comments re major strengths and weaknesses
Problem and purpose statements		+The purpose of the study was to empirically test and compare the clinical judgment of students who participated in structured debriefing sessions using the Debriefing for Meaningful Learning (DML) and of students who received unstructured debriefing.

		+This study had a secondary objective, to explore student's perception of various factors of the structured debriefing strategy that were thought to have an effect on the simulation experience.
Theoretical base from lit review and conceptual framework and concept definitions		+ Debriefing is defined as the process whereby faculty and students reexamine the clinical encounter in order to foster the development of clinical reasoning and judgment skills through reflective learning. +Theoretically it was suggested that learning becomes meaningful only when all dimensions of performing a skill, including cognitive mastery and affective components are addressed. + The literature review found that only three studies focused on structured debriefing and the impact on student learning objectives. +Debriefing for Meaningful Learning Tool (DML) is described as a debriefing strategy that uses a consistent process to guide student reflection through clinical experience. DML uses 6 components, engage, evaluate, explore, explain, elaborate, and extend to structure the debriefing process. +The impact of debriefing on the development of clinical judgment in nursing is an important concept to study. This study potentially can add to the evidence of the best practice in debriefing in the development of student clinical judgment.
Design		+Mixed-method study used a quasi-experimental design for the quantitative component of the study - examining the effects of structured debriefing after two clinical simulation experiences.
Ethical issues		+An internal review board approved the process and the students volunteered to participate in the study. -Only 4 men participated in the study and the mean age was 20.5 years. All students were enrolled in the traditional nursing program.
Sample and setting <ul style="list-style-type: none"> <li>• Inclusion and exclusion criteria</li> <li>• Selection method (random selection or assignment, convenience)</li> </ul>		+The study took place during the first semester of the junior-level medical-surgical nursing. All junior level students enrolled in this clinical course participated in the two simulations, the first at midterm and the second at the end of the semester. +Study was conducted at a mid-sized university located in the mid-Atlantic region. -A convenience sample of 86 junior-level student that were enrolled in the med-surge class consented to voluntarily participate in the study – Originally 90

<ul style="list-style-type: none"> <li>• Size of n</li> </ul>		<p>students started in the class, 1 student chose to not participate, and 3 others did not complete their second scenario. This resulted in 95% response rate of eligible students who could participate in the study.</p> <p>+Students were randomly assigned to clinical groups, the entire clinical group was placed in either the intervention or control side of the study based on whether the faculty members attended the development session on the use of the DML.</p> <p>+6 instructors attended and 6 did not – keep the groups even. -42 students in the intervention group and 44 students in the control group for a total sample size of 86.</p> <p>+Based on the power analysis with the <math>p &lt; .05</math>, a power of .80, and a moderate effect size, at least 27 participants were needed in each group.</p>
Measurement tools		<p>+Student's clinical judgment abilities were assessed at the conclusion of each simulation experience, prior to debriefing.</p> <p>+The instrument for the assessment was the LCJR, the interrater reliability of the LCJR was found to be 0.87 by Gubrud-Howe (2008) and the internal consistency of the instrument was found to be 0.97 by Adamson (2011).</p>
Data collection		<p>-During the first simulation, participants in both the control and intervention group had their LCJR completed by course faculty. After the second simulation, only members of the research team evaluated students with the LCJR to assess their demonstration of the four components of clinical judgment. Students then received a score in each area.</p>
Procedures		<p>-42 students in the intervention group and 44 students in the control group.</p> <p>- During the first simulation, participants in both the control and intervention group had their LCJR completed by course faculty. After the second simulation, only members of the research team evaluated students with the LCJR to assess their demonstration of the four components of clinical judgment. Students then received a score in each area.</p>
Data analysis		<p>-The LCJR scores of the students in the intervention and control groups were compared after the first scenario, and again after the second scenario, 4 to 5 weeks later. Means of the total scores were analyzed</p>

		<p>with repeated measures analysis of variance (RM-ANOVA) to assess differences within groups and between groups as well as across time for the intervention and the control group.</p> <p>+A 2x2 repeated measures multivariate analysis of variance (MANOVA) was calculated to determine whether statistically significant difference existed on the subscales. The multivariate F test for group was not significant.</p> <p>+The interaction MANOVA to test for group x time was not significant.</p>
Findings (discussion of results) and Interpretation of findings : conclusions of what is true , implications of conclusions		<p>-The findings of this study show there were no statistical significances between the control group and the intervention group. The lack of a statistical significance could be due to the low observed power operating in the analysis and the low power could also be due to the sample size of the study.</p> <p>-These findings did not support a previous study in which the DML was shown to have a statistical significance on student learning, but that study used a different evaluation tool of students and the sample size was larger.</p>
Recommendations based on implications		<p>+For future studies related to the structured debriefing and the effect on student learning outcomes a larger sample size is needed.</p> <p>+Replication of this study would be recommended with a more diverse group of students.</p> <p>+Additional studies of the sensitivity of the LCJR to measure students' clinical judgment abilities has also been recommended.</p>
Presentation		The article was clearly outlined with excellent tables to visually show the reader the statistical results as well as the focus group questions and results.
Credentials of the researcher		Bette Mariani, PhD, RN, Mary Ann Cantrell, PhD, RN, Colleen Meakim, MSN, RN, Patricia Prieto, MBA, BSN, Kristina T. Dreifuerst, PhD, RN, ACNS-BC, CNE
Assessment of validity of findings.		<p>-The validity of the study should be questioned mainly due to the sample size.</p> <p>-Six limitations to the study were identified. These included the inadequate observed power for the statistical analysis, the LCJR was completed by the student's faculty member and after the second scenario</p>

	<p>the LCJR was completed on the students by the research team, the homogeneity of the sample in terms of age, gender, and type of program, a variation of the usual unstructured debriefing used in the control side of the study and the possibility of unidentified contamination of the intervention into the control, the 4-5 week time frame difference from the first scenario to the second scenario, the study design, and the low participation in the focus groups.</p> <p>+Due to the above limitations, especially the different groups of people filling out the LCJR on the students, one should question the results.</p>
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**Study Reliability:** The reliability of the study is in question, mainly due to the sample size. The six different limitations would also need to be assessed.

**What are the results?** The LCJR scores of the students in the intervention and control groups were compared after the first scenario, and again after the second scenario, 4 to 5 weeks later. Means of the total scores were analyzed with repeated measures analysis of variance (RM-ANOVA) to assess differences within groups and between groups as well as across time for the intervention and the control group. A 2x2 repeated measures multivariate analysis of variance (MANOVA) was calculated to determine whether statistically significant difference existed on the subscales. The multivariate F test for group was not significant. The interaction MANOVA to test for group x time was not significant.

**What are the statistical answers to the research questions (statistical significance)?** The first question can be answered in this critical appraisal of the quantitative research. The second answer can be found in the critical appraisal of the qualitative research. According to this study, there is no statistical significance in clinical judgment when the debriefing for meaningful learning tool was used as compared to a non-structured type of debriefing.

**What is the clinical significance of the results?** The significance of the study for nursing educators is that as long as debriefing is taking place after simulation, students reflectively feel that they have learned from the experience. The debriefing does not need to be structured.

**Applicability:** This study is applicable to the group PICO question. The burning question is related to using structured debriefing in simulation versus not using structured debriefing.

**Overall Comments on validity and reliability:** The study sample was too small and the inadequate observed power for the statistical analysis was low. The LCJR should have been completed the second time by the same faculty member who completed it the first time. I would be curious to ask the researchers why they chose to do their data collection in this manner. There are too many limitations to the study to call the study reliable. The recommendation would be to repeat the study with a larger, more diverse sample of nursing students and the same faculty members complete the data collection.

### Critical Appraisal of Paige, Arora, Fernandez and Seymour

## SIMULATION DEBRIEFING

**Citation:** Paige, J. T., Arora, S., Fernandez, G., & Seymour, N. (2015). Debriefing 101: training faculty to promote learning in simulation-based training. *American Journal of Surgery*, 209(1), 126-131.

**Study purpose or research questions:** The purpose of this study was to attempt to create an educational model for training that could be integrated into already established mechanisms for continuing medical education (CME) with a focus on the debriefing process in simulation increasing self-efficacy in facilitation.

**Level of evidence:** Level IV (Polit and Beck, 2012)

**Study validity:**

Validity criteria	analysis	Mark an x if very serious concerns	Your comments re major strengths and weaknesses
Problem and purpose statements			+The problem identified is related to the fact that the debriefing process is often overlooked. +The debriefing process is the critical component for fostering deep learning and promoting transfer skills and behaviors to clinical practice. +The purpose of this paper was to attempt to create an educational model for training that could be integrated into already established mechanisms for continuing medical education (CME).
Theoretical base from lit review and conceptual framework and concept definitions			+The theoretical base was based on Kolb's theory of experiential learning. In this theory, a concrete experience leads to reflection by the learner of the events related to it followed by abstract conceptualization of new rules and principles, which are tested through active experimentation. Behavioral changes are evidenced when the new rules and principles are accepted by the learner. The debriefing provides the opportunity for the learner to undergo reflection and conceptualization related to this experience.
Design			+/-The workshop was split into 2 separate 90 minute sessions; each could be attended as a stand-alone educational offering. The attendees could opt to go to one session and not the other session. The first session included didactic components and interactive assessment of debriefings using videos. The second session was devoted to an immersive simulation experience involving post-simulation debriefing. This session involved running an actual simulation based training. An additional volunteer was on hand to offer



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		feedback to the participants acting as de-briefers on the quality of their debriefing skills.
Ethical issues		-Diversity within the population and demographics of the participants of the workshop was not identified.
Sample and setting <ul style="list-style-type: none"> <li>• Inclusion and exclusion criteria</li> <li>• Selection method (random selection or assignment, convenience)</li> <li>• Size of n</li> </ul>		+The setting was a workshop structure that offered convenient educational training for surgical educators who are inexperienced in debriefing. All participants at the workshop were offered the pre and post- training self-efficacy questionnaire. The questionnaire included 8 statements related to the objective-driven aspects of debriefing. Objective Structure Assessment of Debriefing (OSAD) (the 8-item evidence-based tool for guiding and evaluation the quality of debriefing)  +/-The participants at the workshop could go to either sessions or just one depending on the time the participant had at the workshop available.  -There was no identified size of sample. This is a concern for the validity of the study.
Measurement tools		+Pre/Post training self-efficacy in objectives-driven aspects of debriefing.
Data collection		+The effectiveness of the workshop was then assessed using a pre/post workshop questionnaire. A Likert scale from 1 (not at all confident) to 5 (completely confident )
Procedures		+Pre/Post questionnaire was used to evaluate the effectiveness of the workshop.
Data analysis		The researchers used a Likert scale to measure the self-efficacy of the participants at the workshop, pre/post-training. Descriptive statistics were calculated for pre and post-session responses. An unpaired <i>t</i> test was performed to test the difference between the pre-post-training item mean scores. Bonferroni adjustment was applies to control for family-wise type I error rate because of the multiple tests.
Findings (discussion of results) and Interpretation of findings : conclusions of what is true , implications of conclusions		+Of the eight statements the participants evaluated their self-efficacy, 7 of them showed statistical significance after Bonferroni adjustment. After the workshop, the participants were more confident in identifying key components of an effective debriefing $p=.0006$ , describing the essential phases of the debriefing process $p=<.0001$ , describing the role of the de-briefer during the debriefing process $p=<.0001$ , describe the job of the de-briefer during the debriefing

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		process $p < .0001$ , utilizing successfully debriefing techniques to conduct an effective debriefing $p = .0005$ , use an assessment tool to evaluate a debriefing $p = .0003$ , and perform an effective debriefing following the simulation based scenario $p = .0009$ .
Recommendations based on implications		+The recommendations related to the workshop presented was to keep use of integrating high-fidelity simulation into the workshop environment, continued use of videos from the first presentation, to create a format of 2 stand-alone sessions comprising a 3-hour learning experience, and incorporating the Objective Structure Assessment of Debriefing (OSAD) (the 8-item evidence-based tool for guiding and evaluation the quality of debriefing) into the approach of evidence-based effective debriefing.
Presentation		+Table 1 and 3 in the article was easy to read and follow. Table 2 had check marks but no description of what the check mark meant.
Credentials of the researcher		+The credentials of the researchers include John T. Paige, M.D., Sonal Arora, M.B.B.S., Ph.D., Gladys Fernandez, M.D., Neal Seymour, M.D.
Assessment of validity of findings.		-There is a statistical conclusion validity concerns. The number of participants is not disclosed anywhere in the paper. It is indicated that a pre/post self-efficacy questionnaire was completed, but how many completed the questionnaire. The internal validity of the study is compromised. Within the workshop, participants could go to either both sessions or one session. There are results tracking who went to which session and which session might be the independent variable. Where they the same? There are several threats to the validity of this study.

**Study Reliability:**

**What are the results?** Of the eight statements the participants evaluated their self-efficacy, 7 of them showed statistical significance after Bonferroni adjustment.

What are the statistical answers to the research questions (statistical significance)? After the workshop, the participants were more confident in identifying key components of an effective debriefing  $p = .0006$ , describing the essential phases of the debriefing process  $p < .0001$ , describing the role of the debriefer during the debriefing process  $p < .0001$ , describe the job of the debriefer during the debriefing process  $p < .0001$ , utilizing successfully debriefing techniques to conduct an effective debriefing  $p = .0005$ , use an assessment tool to evaluate a debriefing  $p = .0003$ , and perform an effective debriefing following the simulation based scenario  $p = .0009$ .

**What is the clinical significance of the results?** For this group of surgical educators, the study shows the workshop would be an excellent way to increase self confidence in debriefing after a surgical Simulation.

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**Applicability:** This study would not be applicable to the PICO question designed by Group 4. The study offers valid reasons as to why debriefing is an important piece of simulation, but the results are not useful in validating the structured debriefing method.

**Overall Comments on validity and reliability:** The number of participants is not disclosed in this research article. The study could not be repeated in the exact manner to guarantee obtaining similar results.

### Critical Appraisal of Reed

**Citation:** Reed, S. J. (2015). Written debriefing: evaluating the impact of the addition of a written component when debriefing simulations. *Nurse Education In Practice*, 15(6), 543-548.

**Study purpose or research questions:** The study purpose is to see if writing will extent the learning found in debriefing.

**Level of evidence:** Level II (Polit and Beck, 2012)

#### Study validity:

Validity analysis criteria	Mark an x if very serious concerns	Your comments re major strengths and weaknesses
Problem and purpose statements		+The problem is related to debriefing in simulation. According to the article, currently debriefing practices generally involve a facilitator-led discussion of the simulation, with review of the video-recorded simulation sometimes added to provide purpose. In addition to discussion and video review, adding writing to the debriefing has been a suggested way to extend learning in debriefing, but it is understudied. The purpose of the research was to explore the impact of adding written debriefing to the nursing student debriefing experience.
Theoretical base from lit review and conceptual framework and concept definitions		+A literature review was completed. +Different methods of debriefing were discussed. These included facilitated discussion directly after the simulation, post writing reflection, journaling, or blogging. +Reflective learning process was reviewed for simulation debriefing. + Debriefing has been defined as the reflective period following a simulation, designed to solidify learning in an experimental exercise. It is guided by learning objectives of the simulation, and it should be attended

		by those group members, including the facilitator that had participated in the simulation.
Design		+An experimental study design was used to compare nursing student experiences between three types of debriefing: discussion only, discussion followed by blogging, and discussion followed by journaling.
Ethical issues		+University Institutional Review Board permission was obtained for the study. No compensation or additional points were given for the study. The study participants were mainly Caucasian and female, suggesting a lack of diversity in the study. Informed consent was given to the students.
Sample and setting <ul style="list-style-type: none"> <li>• Inclusion and exclusion criteria</li> <li>• Selection method (random selection or assignment, convenience)</li> <li>• Size of n</li> </ul>	X	-The sample for the study was a convenience sample of nursing students in an obstetric nursing course attending a BSN program at a university in the western United States. Less than 10 percent of the students were of a minority or male. The average age was 21.4 years and the students were in the fourth semester of a seven-semester program. The students in this course had participated in 5-6 previous simulations/debriefing exercises up to this point, prior to the study. Only discussion had been used in prior debriefing after simulations. Random assignment to a debriefing type was made for the three different groups by drawing the assignment out of a hat. Groups were not informed of the assignment until after the simulation scenario had been completed. Each group then completed discussion debriefing. There were a total of 58 nursing students eligible for the study. 48 actually ended up participating.
Measurement tools		The tool used to for measurement in the study was the Debriefing Experience Scale, designed to evaluate the nursing student experience during debriefing. This scale has 20 items rated separately in the area of experience and importance to the student. Only the experience portion of the scale was used for the study. The 20 items were rated from 1 (strongly disagree) to 5 (strongly agree) on a Likert-type scale. The collection tool also has an area for comments.
Data collection		+After the simulation, the students were informed of which group they would be placed into. All students completed discussion debriefing and were given the Debriefing Experience Scale (DES). +The students who were randomly assigned to either the blogging or the journaling were given one week to

		<p>complete after the simulation was completed. Data was obtained from completed scales and input into the SPSS using double entry.</p> <p>+ Data was then cleaned and statistically analyzed using IBM SPSS version 19.0 by a one-way ANOVA and Fisher's LSD post-hoc testing.</p>
Procedures		<p>+All students partook in the 35 minute simulation and all students had a 20 discussion debriefing. The facilitators that guided the discussion used the same five questions in debriefing. The discussion was led by the same facilitator that led the simulation. Two of the three facilitators had no formal debriefing training, the third had attended a 3-day simulation training sponsored by a simulation center with debriefing included but not with any specific debriefing method. Written debriefing was done through either blogging or journaling. Journaling was completed through e-mail. A copy of the same five question used in discussion debriefing were e-mailed to the students. Participants were instructed to address the five questions in there journal, email back to the facilitator within two days and the facilitator would then have two days to respond. Blogging was completed by using a private blogger set up through Google. Permission was needed to give access to the private blog to the students. An invitation was sent to each student, facilitator, and the investigator of the study. The privacy settings were set to keep the blog from coming up through any type of search engine. Blogging participants were told to start blogging within two hours of the simulation, to allow better recall of the simulation experience. Expectations were for the students to complete five blog entries, either discussing on or more of the same five questions in the verbal debriefing or responding to another student's post or comment. Blog entries were expected to be completed within two days. After the two days, this group of students then were expected to complete the DES and return it to the nursing center.</p>
Data analysis		<p>+48 of the 58 nursing students in the course chose to participate by returning the completed scales. 15 returned the scales in the discussion group only, 20 returned the scales in the journaling group and 13 returned the scales for the blogging group. Statistical significance was found only in three individual DES items showing students preferred discussion only</p>

		debriefing over discussion followed by writing. “The debriefing environment was physically comfortable” $p=.020$ , “Debriefing provided me with learning opportunity” $p=0.31$ , and “Debriefing helped me to clarify problems” $p=.008$ . Post hoc comparisons using the Fisher LSD test showed that students rated their experience with discussion only significantly higher than blogging on several of the DES items. Post hoc comparison showed that students rated their experience with discussion only significantly higher than journaling with the item “The debriefing environment was physically comfortable” ( $p=.030$ ).
Findings (discussion of results) and Interpretation of findings : conclusions of what is true , implications of conclusions		+The evidence from this study does not support the proposition that expanded learning can happen when written debriefing is added to discussion debriefing. This was evidenced by students rating their discussion alone over discussion followed by writing higher on four different items in the Learning and Making Connections subscale for the DES, as well as three other DES items.
Recommendations based on implications		+The recommendation of this study was suggesting a repeat study to confirm the results, but that adding written debriefing to the already verbal debriefing did not indicate a benefit to the students. A different debriefing structure was recommended to be used other than the five prompts given in this study.
Presentation		+The article was easy to follow with the one table used efficiently explaining statements assessed, giving the mean and the standard deviation.
Credentials of the researcher	X	-Shelly J. Reed is listed as employed at Brigham Young University with no credentials behind her name.
Assessment of validity of findings.		-There are several concerns related to the assessment of the validity of the findings. The sample size was small, but the tools used to gather information was validated. The study came from one University and had three different facilitators for the debriefing period. In addition, perceived learning from the student was measured with the DES, actual learning was not measured. This study would be recommended to be repeated on a larger scale with a wider variety of study participants. The actual age of the participants was not collected. An older generation of nursing students may have a different thought about the written reflection after debriefing.

**Study Reliability:** The tool used to gather information was validated through review of the items by three nationally known simulation experts in addition to a two-step factor analysis process. Reliability testing on the “experience” portion of the DES used for this study was performed. Cronbach’s alpha for the all “experience” portion of the scale was .89.

**What are the results?** 48 of the 58 nursing students in the course chose to participate by returning the completed scales. 15 returned the scales in the discussion group only, 20 returned the scales in the journaling group and 13 returned the scales for the blogging group. Statistical significance was found only in three individual DES items showing students preferred discussion only debriefing over discussion followed by writing. “The debriefing environment was physically comfortable”  $p=.020$ , “Debriefing provided me with learning opportunity”  $p=0.31$ , and “Debriefing helped me to clarify problems”  $p=.008$ . Post hoc comparisons using the Fisher LSD test showed that students rated their experience with discussion only significantly higher than blogging on several of the DES items. Post hoc comparison showed that students rated their experience with discussion only significantly higher than journaling with the item “The debriefing environment was physically comfortable” ( $p=.030$ ).

What are the statistical answers to the research questions (statistical significance)? Statistical significance was found only in three individual DES items showing students preferred discussion only debriefing over discussion followed by writing. “The debriefing environment was physically comfortable”  $p=.020$ , “Debriefing provided me with learning opportunity”  $p=0.31$ , and “Debriefing helped me to clarify problems”  $p=.008$ . Post hoc comparisons using the Fisher LSD test showed that students rated their experience with discussion only significantly higher than blogging on several of the DES items. Post hoc comparison showed that students rated their experience with discussion only significantly higher than journaling with the item “The debriefing environment was physically comfortable” ( $p=.030$ ).

What is the clinical significance of the results? The significance for simulation educators revolves around the transference of learning during the debriefing portion of simulation. The debate is still occurring related to the best way to debrief a simulation. Facilitator lead discussion, according to this study, was the best way to transfer learning. Adding the writing portion did not affect the students learning and in the blogging group appeared to “annoy” the students due to the additional work and it did not advance their learning.

**Applicability:** This study would assist in supporting a verbal debriefing discussion needs to be held after every simulation as evidenced by the students learning the most from the simulation at this time.

**Overall Comments on validity and reliability:** The sample size was small, but the tools used to gather information was validated. The study came from one University and had three different facilitators for the debriefing period. In addition, perceived learning from the student was measured with the DES, actual learning was not measured. This study is recommended to be repeated on a larger scale with a wider variety of study participants. The actual age of the participants was not collected. An older generation of nursing students may have a different thought about the written reflection after debriefing.

### Critical Appraisal of Wazonis

**Citation:** Wazonis, A. R. (2014). Methods and evaluations for simulation debriefing in nursing education. *Journal of Nursing Education*, 53(8), 459-465.

**Purpose:** To provide nurse educators with a review of the methods and evaluations of debriefing as well as to describe how the methods are interrelated.

**Level of evidence:** Systematic review of correlational/observational studies – Level 3

**Critique of systematic reviews and metasyntheses:**

Critique topic	Severity of flaw	Comments on strengths and weaknesses
Problem		+Clearly stated problem in nursing education, the scope is appropriate and important for nurse educators who use simulation debriefing. + Identification of not clearly defined terminology used in research. + Approach was comprehensive to debriefing, not clearly nursing specific, yet with limited research I feel this approach was adequate. - Only relates to education, not practice - Problem did not differentiate specific type or level of nursing students the debriefing methods would benefit.
Search strategy		+Two reported searches, one broad topic based, the second narrow and specific to debriefing tools. +Many online databases (listed), professional websites (listed) and topic specific journals were used. +Key words were identified and inclusive with synonyms of key terms. +/- In the broad search the reviewer used different supplementary methods for search parameters, in the narrow search only online databases were used. +/- A PRISMA flow chart not specifically used, yet a table was included in the article that associated key terms with the article associated with the terms.
Sample		+The inclusion criteria was identified in both the broad and narrow search. The broad search had two inclusion criteria, the narrow had four inclusion criterion. - Exclusion criteria were applied after the inclusion criteria search limited the selection of the narrow and broad searches. + A final twenty-eight articles were chosen for review, I feel this is a strong sample of articles -Sample not specific to the healthcare professions. - Only seven were research references, the other references were expert opinions, abstracts, presentations, papers or worksheets. -No original report referenced.



		+Excluded studies were identified due to different target demographic of participants in debriefing.
Quality Appraisal		-Quality of included studies was not identified specifically, with the exception that seven were identified as research based. -A clearly defined set of criteria for quality appraisal was not used. -A single reviewer reviewed the research, there was not any inter-rater professionals identified. +/- The appraisal information was chosen because it was the information that met the inclusion and exclusion search criteria, not specifically reviewed or selected for quality of information.
Data extraction		+ Many results and included terminologies in the data. +Specified differences in debriefing methods and tools identified per source + Reviewer clarified and discussed standard use of debriefing terminology -Excessive data extracted from review, not clear on significance for educators, and not significant to nursing practice. - Single reviewer, limited integrity of review.
Data analysis: overall		+The reviewer explained the data and the comprehensive understanding of differences +The review of types and methods was complete and descriptive. +A table was used to reference the key terms associated with articles selected. While this is a nice reference, I fail to see the purpose. -The reviewer was not entirely clear about the implications and recommendations for nursing education.
Data analysis: qualitative		-The reviewer did not identify a clear technique to compare the studies. The review identified the differences of each method, no real comparisons noted. + The method of interpretation was to formulate a consistent method for nurse educators to use in simulation debriefing. While I did understand differences in methods and need for standardized debriefing method, I did not extract how this process should be done. + A better understanding of the need for consistent debriefing was identified as well as the differentiations of methods used. It was limited on the impact on advancing new or consistent methods for nurse educators to use in debriefing

		+Sufficient information was presented to inform the reader of the methods and need for consistency, but not guidance for practice.
Conclusions		The reviewer appropriately concluded in the review what is taking place in nursing education, various debriefing methods, inconsistency, and the need for consistency. The reviewer identified limitations that supported that this review was to serve as a reference of methods and offer insight on methods available. For the purpose of evaluating the DML it identifies the specific method differences compared to other debriefing, qualitative, not measurement specific.

**Overall Comments:** Overall as a nurse educator I would be more confused by reading this article, yet it provides tools and a review of the methods to offer insight into methods if a nurse educator desires to investigate one method further. In answering our PICO question, there is a brief discussion on how the DML differs from other methods in its methodology in engaging student learning. I feel that it provides the question with a foundational knowledge of the other debriefing methods that are being used.

Appendix C: Matrix Tables

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## Quantitative Table

<p><b>Article citation in APA</b></p> <p><b>Level of Evidence</b></p> <p><b>PICO(T) Question</b></p>	<p><b>Purpose of research</b></p> <p><b>Conceptual framework or theory base if used</b></p> <p><b>Design used</b></p>	<p><b>Measurement tools used to collect data (list information about reliability &amp; validity of the tools also)</b></p>	<p><b>Sample &amp; size</b></p>	<p><b>Results of research (findings— statistical findings or anything of importance to the PICOT)</b></p>	<p><b>Comments:</b></p> <p><b>Do the study results answer or help to answer some of your PICOT question--explain? Make a comment about strength of evidence and could there be a change in practice/education? Do some of the articles provide the same information? What is it that is being said over and over? Is this information helping to answer your PICOT question? What is the strength of the evidence? What new information have you learned?</b></p>
<p>Chronister, C., &amp; Brown, D. (2012). Comparison of simulation debriefing methods. <i>Clinical Simulation In Nursing, 8(7)</i>, e281-e288.</p> <p>Level 2 Single RCT</p> <p>Compare the outcomes of skill quality, skill response time and knowledge retention in video assisted debriefing versus verbal only debriefing.</p>	<p>Compare the outcomes of skill quality, skill response time and knowledge retention in video assisted debriefing versus verbal only debriefing.</p> <p>This study utilized the Nursing Education Simulation Framework to evaluate learning knowledge, skill performance, critical thinking, student confidence, and learner satisfaction.</p>	<p>The Emergency Response Performance Tool (ERPT) was used to measure skill performance on 19 indicators. It was documented that confidence measures were (r-.87 and Cronbach's <math>\alpha</math>=.92 respectively).</p> <p>Basic level validity and reliability were reported in the article.</p> <p>Faculty that used the ERPT was trained to ensure inter-rater reliability a three-</p>	<p>A convenience sample of 37 BSN (n=37) students (89%) women were recruited. They were senior level students.</p>	<p>It was interesting because what was found was that the repeat of the simulation and the improvement in performance was statistically significant, yet the while the times were slightly faster in the video debriefed group it was not identified as statistically significant. Which would indicate that the used of repeating a simulation would offer knowledge retention and</p>	<p>Answering the PICOT- In this study it was determined that those who were debriefed with the DML performed better than those that did not, yet it was unclear about the inclusivity and comprehensiveness of the video debriefing method used. The PICOT was supported by the use of the ERPT tool, but that is not specific to nursing. This study largely, but not entirely contributed to answering the PICOT question. The limitations included the absence of other debriefing methods outside of video debriefing.</p> <p>Strength – This study was classified as a level 2 single RCT that is a reliable form of research which contributes to the strength of the results, yet it was noted that this</p>

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	<p>Previous studies mention video-assisted debriefing as an alternate teaching method and evaluation of stress and decision-making. A cross over design with repeated experiences to a Cardio Pulmonary Arrest (CPA).</p> <p>This design did not clearly keep the experimental and control groups independent of each other because the design had one group received video assisted debriefing during the first simulation session the other did not, and in the repeat simulation a week later, the group who initially received the video assist, did not, and the group that initially did not receive video assist did have the video assist.</p>	<p>hour training and repeat recorded performances were evaluated by the faculty.</p> <p>In addition, different raters would review the video recorded CPA and with it was inter-rater reliability was 90%. 90% was agreed was an acceptable threshold for the inter-rater reliability</p> <p>--Student ability and motivation could have an impact on the limitations of this study.</p>		<p>improvement in skill performance.</p> <p>The research found many limitations and research that did not fully support the question presented. I did value that the research did show and was statistically significant the use of repeating simulation after either method of debriefing. This could further be used to research how other and different debriefing methods impact the performance on a repeat simulation.</p>	<p>study had a limit of a small sample size.</p> <p>New Information – The utilization of the DML proves an improved learning retention and skill performance than students not debriefed with the DML. This is important for nursing educators to promote and facilitate high quality learning in simulation debriefing by using the DML.</p> <p>Applicability to practice – To apply the DML as a standard of practice more information and research with larger sample sizes is justified before the incorporation of the DML as a standardized tool for debriefing into nursing education.</p> <p>Comparison- This article supported the used of the DML for a debriefing method like in Lusk and Fater (2013). There was a similar structure in the research design with Kolbe et al. (2013) in that a measurement tool outside of nursing was used to evaluate the effectiveness of the debriefing. One article did not have statistical significance between the control and experimental groups, one using the DML and one not. This would suggest that the DML is not effective.</p> <p>Overall- This article specifically pointed to the benefit of using a structured debriefing tool like the DML. There were articles that</p>
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					supporting this finding and one that did not.
<p>Dreifuerst, K. T. (2012). Using debriefing for meaningful learning to foster development of clinical reasoning in simulation. <i>Journal Of Nursing Education, 51(6)</i>, 326-333.</p> <p>Level two, single RCT</p> <p>This study questions if the DML develops greater clinical reasoning skills than traditional methods. Target audience is nursing educators.</p>	<p>This study questions if the DML develops greater clinical reasoning skills than traditional methods. Target audience is nursing educators.</p> <p>Noted scarce literature to draw comprehensive framework, yet the literature framework identifies deficiencies and inconsistencies in the structure and method of debriefing in high fidelity nursing simulation.</p> <p>Exploratory quasi-experimental, pretest, post-test study to evaluate the relationship of using the DML in the development of clinical reasoning.</p>	<p>Health Sciences Reasoning Test (HSRT) (a high level of reliability was determined in this study). This tool was used to evaluate the clinical reasoning abilities measure both pre and post simulation debriefing.</p> <p>Debriefing Assessment for Simulation in Healthcare (DASH) (very good reliability determined in this study). This tool was used post debriefing to measure the quality of the debriefing activity.</p> <p>Debriefing for Meaningful Learning Supplemental Questions (DMLSQ). These questions were used for statistical analysis of the DML.</p>	<p>Sample included 238 undergraduate BSN, pre-licensure nursing students enrolled in seventh semester of eight semester program. Three different sets of student during the same semester, same syllabus, faculty were determined similar and combined for use. Clinical groups were randomly assigned control or experimental. This sample represented the enrollment for the Midwestern university BSN program.</p> <p>Experimental n - 120 Control n - 118</p>	<p>The students exposed to the DML overall had a better score on the clinical reasoning test than those who didn't use the DML, in addition the students exposed to the DML viewed the quality of debriefing better than those who didn't. It also discussed that it was not the specific content being measured, but the students' ability to think in the clinical setting.</p> <p>The study also evaluated if there was a direct relationship between the used of the DML and the measurement of debriefing quality. A direct relationship was identified, so based on this sample one could conclude that the DML is a tool that improves the quality of debriefing and post simulation clinical reasoning</p>	<p>Answering PICOT – This article did answer the PICOT question about the effectiveness of the DML. Two measurement instruments validated that the DML improves student clinical reasoning skills and improves the student perception of simulation debriefing.</p> <p>Strength – The article is classified as a level 2 RCT which is considered a reliable form of research. This study included a larger sample size and standardized measurement tools which improves the strength and repeatability of this study.</p> <p>New Information – This article includes the supporting evidence that the DML is a valuable tool for simulation debriefing. It was also proven that the student perception of debriefing quality is better when the DML is utilized.</p> <p>Applicability to practice – This article would support the incorporation of the DML as a debriefing tool in simulation debriefing. Educators could have a reliable and valid tool to promote effective debriefing.</p> <p>Comparison – There is similar information for the support of using the DML for effective simulation debriefing. Other articles did discuss</p>

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				skills compared to other methods.	<p>other non-standardized debriefing methods specific to the DML, but gave insight into other methods. Mariana et al (2013), did not support any significant benefit of clinical implications for the use of the DML versus other debriefing methods.</p> <p>Overall this article offers support for educators to consider a standardized method of debriefing simulation. It also supports the need for further research into the mainstream incorporation of a specific simulation debriefing method into nursing education.</p>
<p>Fey, M. K., &amp; Jenkins, L. S. (2015). Debriefing practices in nursing education programs: Results from a national study. <i>Nursing Education Perspectives</i>, 36(6), 361-366.</p> <p>Level of evidence: Single correlation/ observational study Level IV</p> <p>The purpose of the study was to describe debriefing practices in nursing education programs in the United States.</p>	<p>The purpose of the study was to describe debriefing practices in nursing education programs in the United States.</p> <p>Survey based on Kolb's theory</p> <p>The data collected was self-reported. Since observation of debriefing sessions was estimated the frequency may be challenged.</p> <p>Using only one theoretical framework may have limited information.</p>	<p>Survey based on Kolb's theory Regression analysis determined variables that were associated with the use of theory based debriefing.</p> <p>This study does not discuss diversity and the sample was gathered schools that volunteered to be part of the sample These results may not be repeated.</p>	<p>The sample is 1440.</p> <p>The size of n =502.</p>	<p>Programs with a dedicated simulation administrator (DSA) were twice as likely to practice theory based debriefing (TBD). <math>p &lt; .01</math>. The association between the use of TBD with formal training in simulation still remained once age was accounted for. <math>p = .01</math> Nursing programs in which debriefing followed structure were 3.2 times more likely to practice TBD most of the time. <math>p &lt; .01</math>. Programs that assessed competences of all</p>	<p>Answering the PICOT - The study results do not help to answer the specific PICOT question, but the information from the study shows what is currently occurring in simulation and debriefing in the United States.</p> <p>Strength - This study showed a need for development of best practices or standards for debriefing. The evidence of this study showed that having a DSA increased the use of TBD by two times. Formal training increased the use of TBD, it also discussed the need for assessing competencies of debriefers.</p> <p>Applicability to practice – Program administrators need to consider the development and incorporation of a identified person specifically trained for simulation debriefing even if not using the DML. It is suggested the simulation debriefers have a</p>

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				<p>debriefers were 4.2 times more likely to use debriefing practices consistent with Kolb’s theory. p &lt; .01.</p> <p>This study determined that most debriefers do not have training in debriefing and that their competence was not assessed. Factor associated with the use of TBD included the presence of a DSA, training for debriefers and competence assessment of debriefers.</p> <p>This clinical significance of this article is that simulation is being used in nursing education currently, but method of debriefings varies and competency of debriefers is not always being assessed.</p>	<p>debriefing competency evaluation to ensure accurate and effective debriefing.</p> <p>New information –The information gained is that more studies need to be done regarding best practices for debriefing and debriefers.</p> <p>Comparison - A general theme in the articles regards the importance place on debriefing of simulation to help the participants process and learn from the activity. There are mixed messages in the articles regarding whether debriefing for meaningful learning (DML) improves student outcomes. Another common thread is the characteristics of the debriefers: inclusivity, non-judgmental, attitudes, and non-punitive.</p> <p>Overall – This article identified areas of need when it comes to the reliability and consistency of simulation debriefing.</p>
<p>Kolbe, M., Weiss, M., Grote, G., Knauth, A.,</p>	<p>Introduction of a debriefing structure that combines the</p>	<p>Self-reporting quality debriefing scale—</p>	<p>The sample was 61 trainees.</p>	<p>All 4 measurement points of debriefing quality scale</p>	<p>Answer the PICOT - This study helps to answer part of PICOT question, because it examines another</p>



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<p>Dambach, M., Spahn, D. R., &amp; Grande, B. (2013). TeamGAINS: a tool for structured debriefings for simulation based team trainings. <i>BMJ Quality Safety</i>. 22(7), 541-553.</p> <p>Study purpose or research questions: Level of evidence: Single correlational/observational study. Level IV</p> <p>Introduction of a debriefing structure that combines the advantages of guided team self-correction, advocacy inquiry and the systemic-constructivist approach.</p>	<p>advantages of guided team self-correction, advocacy inquiry and the systemic-constructivist approach.</p> <p>Based on previous debriefing work, we have developed this debriefing structure for trainings aiming at teaching clinical as well as behavioral skills as we think they should best be trained interactively.</p> <p>No control group study design.</p>	<p>Used components of DASH and OSAD.</p> <p>The study uses DASH and OSAD were both found to be valid, but the study does not measure the improvement in clinical or behavioral skills.</p> <p>It is uncertain that this study could be replicated, because all of the participants volunteered to be in the study. There is no measure of improvement in the clinical or behavioral skills. This study doesn't have a diverse population.</p>	<p>Size of n=61.</p>	<p>positively correlated with the trainee reaction scale (<math>p &lt; 0.01</math>). No significant relationship between age, sex, years of work experience, job role and debriefing quality. (<math>p &gt; 0.17</math>) Psychological safety and inclusiveness significantly increased with debriefing. A two two-sided paired t-tests. The results indicate that psychological safety significantly increased from t1 (<math>M=3.36</math>, <math>SD=0.63</math>) to t2 (<math>M=3.48</math>, <math>SD=0.54</math>); <math>t(59)=-2.26</math>, <math>p=0.028</math> (95% CI <math>-0.22</math> to <math>-0.01</math>). Likewise, leader inclusiveness increased from t1 (<math>M=3.21</math>, <math>SD=0.68</math>) to t2 (<math>M=3.33</math>, <math>SD=0.56</math>); <math>t(60)=-2.07</math>, <math>p=0.048</math> (95% CI <math>-0.23</math> to <math>-0.003</math>).</p> <p>There is a positive correlation between trainee reaction and debriefing quality.</p>	<p>debriefing methods. A problem with the results is that this study may not be replicated because all the participants volunteered to be in the study.</p> <p>Strength – A strength of this study is that there is a positive correlation between psychological safety and inclusiveness of debriefing and the trainee reaction. The debriefer should adapt these characteristics to improve student reactions.</p> <p>New Information - The new information gained from this article was the method of debriefing. There is a positive correlation between trainee reaction and debriefing quality. Psychological safety and inclusiveness increased with this debriefing method.</p> <p>Applicability to practice – The foundational concepts of student environment conducive to learning. This would include debriefer interaction, safe environment, and inclusivity. Educators must consider this when planning for diversity.</p> <p>Comparison – Similarities with a couple articles in that the development of the debriefing process and personnel must facilitate a positive learning environment. There was a similar structure in the research design with Chronister et al. (2012) in that a measurement tool</p>
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## SIMULATION DEBRIEFING

				Psychological safety and inclusiveness increased with this debriefing method. The clinical and behavioral skills were not measured in this study.	outside of nursing was used to evaluate the effectiveness of the debriefing. This article did not specifically compare to others in addressing the function and utilization of the DML.  Overall - The articles examined the importance placed on debriefing of simulation to help the participant process and learn from the activity. There are mixed messages in the articles regarding whether debriefing for meaningful learning (DML) improves student outcomes. Another common thread is the characteristics of the debriefers-- inclusive, nonjudgmental, and not punitive. Also there is a need for diversity of the sample population for studies.
Mariani, B., Cantrell, M. A., Meakim, C., Prieto, P., & Dreifuerst, K. T. (2013). Structured debriefing and students' clinical judgment abilities in simulation. <i>Clinical Simulation In Nursing</i> , 9(5), e147-55. Level of evidence: Level II  Two research questions were addressed: 1. Is	Two research questions were addressed: 1. Is there a difference in clinical judgement, as measured by the Lasater Clinical Judgment Rubric (LCJR) between students who received a structured debriefing session (DML) and students who did not receive a structured debriefing session? 2. Do students perceive that the role of the person	The study empirically tested and compared the clinical judgement of students who participated in the structured debriefing sessions, using the Debriefing for Meaningful Learning (DML) as the structured debriefing tool, and students who received unstructured debriefing.	Sample size was 86 college nursing students in their junior-level of nursing school.	There was no statistical significance that could be found between the control group and the intervention group of nursing students. These empirical results would indicate that using a structured debriefing tool, such as the DML, would not make a difference on improving student's clinical judgment skills.	Answering the PICOT - This article supports using structured debriefing and more specifically the Debriefing for Meaningful Learning (DML) method. The DML assisted in focusing the students on the learning objective that was meant to be met during the simulation. This is evidenced in the focused group results, the students felt their learning was more proficient. Strength - Good sample size was used for the quantitative portion of the study. Weakness – only 7 students participated in the focus group. Applicability to practice- This article supports the use and incorporation of

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<p>there a difference in clinical judgment, as measured by the Lasater Clinical Judgment Rubric (LCJR) between students who received a structured debriefing session (DML) and students who did not receive a structured debriefing session? 2. Do students perceive that the role of the person conducting debriefing, the timing, the length, the method, and the effectiveness of the debriefing affected the benefit of the clinical experience?</p>	<p>conducting debriefing, the timing, the length, the method, and the effectiveness of the debriefing affected the benefit of the clinical experience?</p> <p>Debriefing is defined as the process whereby faculty and students reexamine the clinical encounter in order to foster the development of clinical reasoning and judgment skills through reflective learning.</p> <p>Theoretically it was suggested that learning becomes meaningful only when all dimensions of performing a skill, including cognitive mastery and affective components are addressed.</p> <p>The literature review found that only three studies focused on structured debriefing and the impact on student learning objectives.</p>	<p>Clinical judgment was measured using the Lasater Clinical Judgment Rubric (LCJR). This tool includes four areas identified for assessment: noticing, interpreting, responding, and reflecting. The LCJR provides a framework for assessing the student's clinical judgment in each of these areas.</p>			<p>a standardized debriefing method. Program directors may choose to investigate and implement a standardized process using a standardized tool like the DML. Comparison: Similarities were identified between this article and Dreifuerst (2012) and Chronister &amp; Brown (2012). They include the utilization of the DML and the measurement of how it affected clinical learning. This article had differences between articles that focused on the training and clinical judgment of the person administering the debriefing, not specific to the DML.</p> <p>New information - In general, this study supports the need for structured debriefing.</p> <p>Overall- This article supports the need for a standardized simulation debriefing tool to enhance student learning from simulation debriefing. The DML was identified as a tool that could fit this need.</p>
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	<p>Debriefing for Meaningful Learning Tool (DML) is described as a debriefing strategy that uses a consistent process to guide student reflection through clinical experience. DML uses 6 components, engage, evaluate, explore, explain, elaborate, and extend to structure the debriefing process.</p> <p>Focus groups discussion took place for the qualitative portion of this particular study.</p>				
<p>Paige, J. T., Arora, S., Fernandez, G., &amp; Seymour, N. (2015). Debriefing 101: training faculty to promote learning in simulation-based training. <i>American Journal Of Surgery</i>, 209(1), 126-131.</p> <p>Level of evidence: Level IV</p> <p>The purpose of this paper was to attempt</p>	<p>The purpose of this paper was to attempt to create an educational model for training that could be integrated into already established mechanisms for continuing medical education (CME).</p> <p>The theoretical base was based on Kolb’s theory of experiential learning. In this theory, a concrete</p>	<p>Pre/Post training self-efficacy in objectives-driven aspects of debriefing.</p> <p>The questionnaire included 8 statements related to the objective-driven aspects of debriefing. Objective Structured Assessment of Debriefing (OSAD) (the 8-item evidence-based tool for guiding and</p>	<p>There was no identified size of sample. This is a concern for the validity of the study.</p>	<p>Of the eight statements the participants evaluated their self-efficacy, 7 of them showed statistical significance after Bonferroni adjustment. After the workshop, the participants were more confident in identifying key components of an effective debriefing <math>p=.0006</math>, describing</p>	<p>Answering the PICOT- This study would not be applicable to the PICO question. The study offers valid reasons as to why debriefing is an important piece of simulation, but the results are not useful in validating the structured debriefing method. Strength – Self efficacy increased between the pre and the post survey. There was not an identified size of the group. This would be identified as a weakness. Applicability to practice –This article addressed the method of training of the debriefer in the simulation setting.</p>

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<p>to create an educational model for training that could be integrated into already established mechanisms for continuing medical education (CME).</p>	<p>experience leads to reflection by the learner of the events related to it followed by abstract conceptualization of new rules and principles, which are tested through active experimentation. Behavioral changes are evidenced when the learner accepts the new rules and principles. The debriefing provides the opportunity for the learner to undergo reflection and conceptualization related to this experience.</p> <p>The workshop was split into 2 separate 90 minute sessions, each could be attended as a stand-alone educational offering. The attendees could opt to go to one session and not the other session. The first session included didactic components and interactive assessment of</p>	<p>evaluation the quality of debriefing) There is a statistical conclusion validity concerns. The number of participants is not disclosed anywhere in the paper. It is indicated that a pre/post self-efficacy questionnaire was completed, but how many completed the questionnaire. The internal validity of the study is compromised. Within the workshop, participants could go to either both sessions or one session. There are results tracking who went to which session and which session might be the independent variable. There are several threats to the validity of this study.</p> <p>Of the eight statements the participants evaluated their self-efficacy, 7 of them showed statistical significance after</p>		<p>the essential phases of the debriefing process <math>p &lt; .0001</math>, describing the role of the debriefer during the debriefing process <math>p &lt; .0001</math>, describe the job of the debriefer during the debriefing process <math>p &lt; .0001</math>, utilizing successfully debriefing techniques to conduct an effective debriefing <math>p = .0005</math>, use an assessment tool to evaluate a debriefing <math>p = .0003</math>, and perform an effective debriefing following the simulation based scenario <math>p = .0009</math>.</p>	<p>Comparison- A group training and debriefing session was utilized in this article, which is similar to Chronister &amp; Brown (2012) and Kolbe et al. (2013). Kolb's theory was utilized as a framework in this article and in Fey and Jenkins (2015). New information – Self-efficacy increased from the pre survey to the post survey. A method of train the trainer may be an option to educate Faculty on the importance and technique of simulation debriefing. Overall – This article discusses a potential educational model for surgeons utilizing simulation in education. This article supports the importance of utilizing debriefing to build self-efficacy in students whether they are physicians and nurses. There was not an identified structured debriefing method, but unstructured debriefing was done and proved important to learning.</p>
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## SIMULATION DEBRIEFING

	debriefings using videos. The second session was devoted to an immersive simulation experience involving post-simulation debriefing. This session involved running an actual simulation based training. An additional volunteer was on hand to offer feedback to the participants acting as debriefers on the quality of their debriefing skills.	Bonferroni adjustment.			
<p>Reed, S. J. (2015). Written debriefing: evaluating the impact of the addition of a written component when debriefing simulations. <i>Nurse Education In Practice, 15</i>(6), 543-548.</p> <p>Level of evidence: Level II</p> <p>The study purpose is to see if writing will extent the learning found in debriefing.</p>	<p>The study purpose is to see if writing will extent the learning found in debriefing.</p> <p>A literature review was completed. Different methods of debriefing were discussed. These included facilitated discussion directly after the simulation; post writing reflection, journaling, or blogging. Reflective learning process was reviewed for simulation debriefing.</p>	<p>The tool used to for measurement in the study was the Debriefing Experience Scale, designed to evaluate the nursing student experience during debriefing. This scale has 20 items rated separately in the area of experience and importance to the student. Only the experience portion of the scale was used for the study. The 20 items were rated from 1 (strongly</p>	<p>The sample for the study was a convenience sample of nursing students in an obstetric nursing course attending a BSN program at a university in the western United States</p> <p>There were a total of 58 nursing students eligible for the study. 48 actually ended up participating.</p>	<p>48 of the 58 nursing students in the course chose to participate by returning the completed scales. 15 returned the scales in the discussion group only, 20 returned the scales in the journaling group and 13 returned the scales for the blogging group. Statistical significance was found only in three individual DES items showing students preferred discussion only debriefing over discussion followed</p>	<p>Answering the PICOT - This study would assist in supporting the evidence a verbal debriefing discussion needs to be held after every simulation as evidenced by the students learning the most from the simulation at this time. This helps to support the Debriefing for Meaningful Learning (DML) as an effective method due to the basis it is a verbal discussion held after debriefing.</p> <p>Strength – This study could be repeated but would advise a bigger group of nursing students.</p> <p>Applicability to practice – The potential of adding a written component to debriefing, in addition</p>

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	<p>Debriefing has been defined as the reflective period following a simulation, designed to solidify learning in an experimental exercise. It is guided by learning objectives of the simulation, and it should be attended by those group members, including the facilitator that had participated in the simulation.</p> <p>An experimental study design was used to compare nursing student experiences between three types of debriefing: discussion only, discussion followed by blogging, and discussion followed by journaling.</p>	<p>disagree) to 5 (strongly agree) on a Likert-type scale. The collection tool also has an area for comments.</p> <p>There are several concerns related to the assessment of the validity of the findings. The sample size was small, but the tools used to gather information was validated. The study came from one University and had three different facilitators for the debriefing period. In addition, perceived learning from the student was measured with the DES, actual learning was not measured.</p> <p>This study would be recommended to be repeated on a larger scale with a wider variety of study participants. The actual age of the participants was not collected. An older generation of nursing students may have a</p>		<p>by writing. “The debriefing environment was physically comfortable” <math>p=.020</math>, “Debriefing provided me with learning opportunity” <math>p=0.31</math>, and “Debriefing helped me to clarify problems” <math>p=.008</math>. Post hoc comparisons using the Fisher LSD test showed that students rated their experience with discussion only significantly higher than blogging on several of the DES items. Post hoc comparison showed that students rated their experience with discussion only significantly higher than journaling with the item “The debriefing environment was physically comfortable” (<math>p=.030</math>).</p>	<p>to a discussed debriefing post simulation, would be the applicability to practice. The discussion of what type of written debriefing that would to be utilized; blogging versus journaling.</p> <p>Comparison – This was the only article to discuss adding the written debriefing component post simulation. It is similar to only one other article, Paige et al., (2015) in that it used unstructured verbalized debriefing. Other articles were focused on more of a structured debriefing method.</p> <p>New information - This article touched on the age group of the students. Most of the students are of the “Facebook” generation and have grown up with technology and expect information to be given to them in an entertaining way, for example using blogging as a form of written debriefing, but interestingly the students did not like to blog about their simulation experience. Most felt uncomfortable with other students reading their reflections and did prefer the journaling due to the privacy, no one else reads their comments. I find this interesting because this generation seems to have no trouble posting anything they think/feel online, but are concerned about their blogging. In turn, I believe this shows a lack of confidence in their nursing skills</p>
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		different thought about the written reflection after debriefing. The tool used to gather information was validated through review of the items by three nationally known simulation experts in addition to a two-step factor analysis process. Reliability testing on the “experience” portion of the DES used for this study was performed. Cronbach’s alpha for the all “experience” portion of the scale was 0.89.			related to whatever simulation scenario they were placed in.  Overall – This article has good information related to written debriefing but does not support the PICO question. It did add a component of debriefing that could potentially be utilized as a separate method of debriefing.
Wazonis, A. R. (2014). Methods and evaluations for simulation debriefing in nursing education. <i>Journal of Nursing Education, 53</i> (8), 459-465.  Level of evidence: Systematic review of correlational/observational studies – Level 3	To provide nurse educators with a review of the methods and evaluations of debriefing as well as to describe how the methods are interrelated.  Specified differences in debriefing methods and tools identified per source.	The reviewer did not identify a clear technique to compare the studies.  The review identified the differences of each method, no real comparisons noted.  The method of interpretation was to formulate a consistent method for nurse educators to use in simulation debriefing.	A final twenty-eight articles were chosen for review, I feel this is a strong sample of articles.  Only seven were research references, the other references were expert opinions, abstracts, presentations, papers or worksheets.	The reviewer was not entirely clear about the implications and recommendations for nursing education.  The reviewer appropriately concluded in the review what is taking place in nursing education, various debriefing methods, inconsistency, and the need for consistency. The reviewer identified	Answering the PICOT - There is a brief discussion on how the DML differs from other methods in its methodology in engaging student learning. I feel that it provides the question with a foundational knowledge of the other debriefing methods that are being used, but is does not indicate how the effectiveness of the DML compares to the effectiveness of the methods. It was largely a descriptive analysis of the different methods. It was very vague and did not answer the PICOT question.



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<p>To provide nurse educators with a review of the methods and evaluations of debriefing as well as to describe how the methods are interrelated.</p>	<p>Single reviewer, limited integrity of review.</p>			<p>limitations that supported that this review was to serve as a reference of methods and offer insight on methods available. For the purpose of evaluating the DML it identifies the specific method differences compared to other debriefing, qualitative, not measurement specific.</p>	<p>Strength – The inclusion of twenty-eight articles included a wide variety of methods for comprehensive review, yet the review did not compare the characteristics of the strengths or weaknesses of the debriefing method. The level 3 of the research evidence hierarchy does place less strength in the results of the review.</p> <p>Applicability to practice – This article was very descriptive of debriefing methods, but not specific to implications for practice. Where educators may value knowing the different method available this article does not describe how to use in practice.</p> <p>Comparison - This article is different in the fact it was a systematic review of the different methods of debriefing, not the effectiveness of how they work. Many of the other articles evaluated a specific method or methods in practice.</p> <p>New Information – New information about the varying degrees of types and methods of debriefing was newer information.</p> <p>Overall – This was informative reading for those with little to no understanding of simulation debriefing and could provide a starting point for professionals to begin understanding the debriefing process.</p>
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Qualitative Table

<p><b>Article citation in APA</b></p> <p><b>Level of Evidence</b></p> <p><b>PICO(T) Question</b></p>	<p><b>Purpose of research</b></p> <p><b>Conceptual framework or theory base if used</b></p> <p><b>Design used</b></p>	<p><b>How was data collected &amp; analyzed?</b></p>	<p><b>Sample &amp; size</b></p>	<p><b>Results of research</b></p>	<p><b>Comments</b></p> <p><b>Do the study results answer or help to answer some of your PICOT question--explain? Make a comment about strength of evidence and could there be a change in practice/education? Do some of the articles provide the same information? What is it that is being said over and over? Is this information helping to answer your PICOT question? What is the strength of the evidence? What new information have you learned?</b></p>
<p>Lusk, J., &amp; Fater, K. (2013). Postsimulation debriefing to maximize clinical judgment development. <i>Nurse Educator</i>, 38(1), 16-19. Systematic review of descriptive/ qualitative/physiologic studies. Level V The literature review of debriefing and other disciplines, the authors suggest strategies that optimize debriefing after simulation as a means to promote clinical judgment</p>	<p>The literature review of debriefing and other disciplines, the authors suggest strategies that optimize debriefing after simulation as a means to promote clinical judgment among nursing students. Literature review completed. “The structure for debriefing must be founded on the previous knowledge developed in clinical</p>	<p>Electronic search of CINAHL, PsycINFO, MEDLINE using the words—debriefing, simulation, and simulation teaching. Hand search was done then to expand relevant</p> <p>There is a lack of statistical citations in this paper to show a correlation been structured debriefing and promotion of clinical judgment.</p>	<p>27 publications contributed to this review.</p>	<p>Students scored higher in clinical reasoning when using Debriefing for Meaningful Learning Using Tanner’s steps... reflecting, noticing, interpreting, responding and reflecting enhance the student’s ability to use theoretical information in nursing practice. The final outcome of such a structured process is improved clinical judgment or thinking like a nurse.</p>	<p>Answering the PICOT - This study examined Debriefing for Meaningful Learning (DML) and the findings were that students using the Debriefing for Meaningful Learning method scored higher in clinical reasoning. This answers the PICOT question because it examined the DML method of debriefing. There were two major limitations were noted: lack of instrument to measure clinical reasoning in nursing and bias selection of the sample. The results may not be generalizable or transferable to other populations. The lack of statistical data is a drawback to this article also.</p>

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among nursing students.	judgment development.” Tanner’s model of thinking like a nurse Grounded theory is the design	Lack of an instrument to measure clinical reasoning.			<p>Strength – Many different debriefing methods were reviewed for type and style of method and description of the each.</p> <p>Applicability for practice – Very little information from this article would be applicable to impact any change in practice. No statistical data supported any justification to change practice, yet it was comprehensive information describing the methods.</p> <p>Comparison – This article had similar information like in Wazonis, (2014) in the description of types of debriefing. Very little similarities comparing to this article to those that used randomized controlled trials comparing a control and experimental groups.</p> <p>New Information - The new information learned from this article is that there was a lack of an instrument to measure clinical reasoning in this study.</p> <p>Overall – The theme of this article was that the structure of the debriefing process not necessarily the tool was the priority in effective debriefing.</p>
Mariani, B., Cantrell, M. A., Meakim, C., Prieto, P., & Dreifuerst, K. T. (2013). Structured	Two research questions were addressed: 1. Is there a difference in clinical judgement,	The focus groups lasted 60 minutes each. Both groups were tape-recorded, and each included a	All 86 students who participated in the simulations were invited to take part in the focus groups, and	Overall, students found debriefing, despite the type, assisted them in becoming more	Answering the PICOT – This article supports using a structured debriefing and more specifically the Debriefing for Meaningful Learning (DML) method. The DML assisted in

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<p>debriefing and students' clinical judgment abilities in simulation. <i>Clinical Simulation In Nursing</i>, 9(5), e147-55. Level of evidence: Level II</p> <p>Two research questions were addressed: 1. Is there a difference in clinical judgment, as measured by the Lasater Clinical Judgment Rubric (LCJR) between students who received a structured debriefing session (DML) and students who did not receive a structured debriefing session? 2. Do students perceive that the role of the person conducting debriefing, the timing, the length, the method, and the effectiveness of the debriefing affected the benefit of the clinical experience?</p>	<p>as measured by the Lasater Clinical Judgment Rubric (LCJR) between students who received a structured debriefing session (DML) and students who did not receive a structured debriefing session?</p> <p>2. Do students perceive that the role of the person conducting debriefing, the timing, the length, the method, and the effectiveness of the debriefing affected the benefit of the clinical experience? Debriefing is defined as the process whereby faculty and students reexamine the clinical encounter in order to foster the development of clinical reasoning and judgment skills through reflective learning. Theoretically it was suggested that learning becomes meaningful only</p>	<p>note taker in the group.</p> <p>The audio recordings were secured into an electronic file and transcribed by a professional transcription service.</p> <p>The researchers did all they could to keep the content of the focus groups from becoming skewed. They had an outside transcription service transcribed.</p> <p>The trustworthiness of the research is determined to be there for this part of the study.</p> <p>With this size, the reliability of the qualitative part of the study should be discussed. If a larger sample size could be obtained the study could be repeated and confirmed, either in agreement to what these findings are or in disagreement.</p>	<p>7 students accepted the invitation (8.1%).</p>	<p>proficient in basic nursing skills and recognizing the importance of using available lab data and checking the physician's orders.</p> <p>There were differences between the structured debriefing and the usual unstructured form of debriefing. Students perceived the DML to foster student-focused learning and assist in recognizing the affective component of learning.</p> <p>Students experienced the usual unstructured form of debriefing as more instructor-focused, with the feedback highlighting what the students performed incorrectly during the simulation experience.</p> <p>The students in the focused group felt the structured debriefing assisted the students</p>	<p>focusing the students on the learning objective that was meant to be met during the simulation. This is evidenced in the focused group results, the students felt their learning was more proficient.</p> <p>Strength - Good sample size was used for the quantitative portion of the study. Weakness – only 7 students participated in the focus group.</p> <p>Applicability to practice – This article supports the importance of debriefing in simulation. Debriefing appears to be the piece of simulation where the students experience the most reflective learning. This article focuses on the importance of effectively utilizing the debriefing time period.</p> <p>Comparison - Similarities were identified between this article and Dreifuerst (2012) and Chronister &amp; Brown (2012). This includes the utilization of the DML and the measurement of how it affected clinical learning. This article had differences between articles that focused on the training and clinical judgment of the person administering the debriefing, not specific to the DML.</p> <p>New information - In general, this study supports the need for structured debriefing.</p> <p>Overall – This article supports the PICO question in that structured debriefing, specifically the Debriefing for Meaningful Learning (DML)</p>
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## SIMULATION DEBRIEFING

	<p>when all dimensions of performing a skill, including cognitive mastery and affective components are addressed. The literature review found that only three studies focused on structured debriefing and the impact on student learning objectives. Debriefing for Meaningful Learning Tool (DML) is described as a debriefing strategy that uses a consistent process to guide student reflection through clinical experience. DML uses 6 components, engage, evaluate, explore, explain, elaborate, and extend to structure the debriefing process.</p> <p>Focus groups discussion took place for the qualitative portion</p>			<p>in learning and they felt more proficient.</p> <p>The instructor-led focused with unstructured debriefing method felt more punitive. The sample size used for the study should be evaluated</p>	<p>would improve student learning outcomes.</p>
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	of this particular study.				
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Appendix D: Query Letter

## SIMULATION DEBRIEFING

May 23<sup>rd</sup>, 2016  
Virginia Henderson Global Nursing e-Repository  
STTI Headquarters  
550 West North Street  
Indianapolis, IN 46202  
Submission Query

Dear Editor,

We would like to submit a manuscript to the Virginia Henderson Global e-repository. The manuscript is a literature review of high-fidelity simulation debriefing practices, specifically assessing the effectiveness of the Debriefing for Meaningful Learning (DML) debriefing method. Our research question is for nurse educators debriefing in simulation; how does using the Debriefing for Meaningful Learning method compare to other simulation debriefing methods influence simulation debriefing effectiveness as evidence by a debriefing evaluation?

As simulation is becoming a more popular pedagogy, post-simulation debriefing is a vital component of the learning experience. Effective debriefing facilitates better understanding of content and critical thinking. Nurse educators debriefing in simulation should be informed of reliable and valid tools to use during simulation debriefing. This information could also be of value to health professionals who debrief situational events. We have chosen the Virginia Henderson Global Nursing e-Repository because of the free online access to a large population of health professionals. The Henderson eRepository is a comprehensive database of peer reviewed nursing research that promotes the evolution of nursing and nursing practice.

Upon this query letter, Angela Kastner, Sabrina Glesmann, and Monika Venteicher are in the final stages of completing the Master's Degree program in nursing education with Nebraska Methodist College in Omaha, Nebraska. Monika Venteicher has been working in nursing education for four years with a vested interest in the simulation pedagogy. Angela Kastner has one year of experience in nursing education and recently attained employment as a simulation coordinator. She is interested in effective simulation debriefing. Sabrina Glesmann has been involved in nursing education for eight years and has assisted with simulation debriefing.

We could have the manuscript ready by August 1<sup>st</sup>, 2016. We could be flexible with the submission date if requested sooner. Monika Venteicher has volunteered to be the contact for future communications. Her contact information is xxx-xxx-xxxx or email her at xxxxxx.xxxxxxxx@xxxxxxx.xxx.

Sincerely,

Angela Kastner, BSN RN

Sabrina Glesmann, BSN RN

Monika Venteicher, BSN RN