Nurse Education Today 34 (2014) 372–376

Contents lists available at ScienceDirect

Nurse Education Today

journal homepage: www.elsevier.com/nedt

Review

Successful debriefing — Best methods to achieve positive learning outcomes: A literature review

Claudine Dufrene [a,*], Anne Young [b]

[a] University of Texas Medical Branch School of Nursing, 301 University Blvd, Galveston, TX 77555, United States
[b] Texas Woman's University, 6700 Fannin, Houston, TX 77030, United States

ARTICLE INFO

Article history:
Accepted 24 June 2013

Keywords:
Simulation
Debriefing
Nursing education
Medical education

SUMMARY

The past several years have seen a dramatic increase in the use of simulation in nursing education. The process of debriefing, or guided reflection, follows these simulation activities. Although facilitated debriefing is recommended in the simulation literature, very few research articles reported results of the effectiveness of debriefing. A literature search was conducted using PubMed, Academic Search Complete, CINAHL, ERIC, and PsychInfo to identify articles and studies examining simulation and debriefing methods. A limited number of studies were found, that examined traditional faculty facilitated debriefing versus alternate forms of debriefing, debriefing versus no debriefing, and perceptions of debriefing. In most cases, improvement was noted in learners regardless of the debriefing process used. This review is grouped in two sections: (a) studies comparing debriefing strategies and (b) studies examining perceptions of the usefulness of debriefing.

Introduction

The past several years have seen a dramatic increase in the use of simulation in nursing education. The American Association of Colleges of Nursing (AACN) (2008) has recommended the inclusion of simulation in baccalaureate curricula. High fidelity simulators are used in simulation scenarios in which students participate in the scenario, usually in small groups. The process of debriefing, or guided reflection, follows these scenarios. Educators serve as facilitators and guide students through a discussion of the experience. This provides students with the opportunity to reflect on their actions (Lederman, 1992; Thiagarajan, 1992) and allows them to verbalize their thoughts on the consequences of their actions or lack of actions.

John Dewey first posited the phrase reflective thinking in 1910. Debriefing, or guided reflection, follows the concept of reflective thinking. Donald Schön (1983) further expanded this concept to encompass the reflective practitioner. Reflection-in-action and reflection-on-action, according to Schön, provide learners with the opportunity to consciously review their actions during and after an activity or situation. Sources in the literature recommend facilitated debriefing immediately following simulation (Fanning and Gaba, 2007; Ironside et al., 2009; Jeffries, 2005; Rudolph et al., 2006, 2007). In a concept analysis on debriefing, Dreifuerst (2009) identified active engagement as a defining attribute of debriefing and stated that it is a required component of experiential learning. In 2011, the Board of Directors of the International Nursing Association for Clinical Simulation and Learning (INACSL, 2011) published standards of best practice in simulation education. They indicate that effective debriefing should be facilitated by an individual trained in the debriefing process and who witnessed the simulation activity.

Effective simulation activities require extensive use of an educator's time, both in the preparation and implementation of the activities (Metcalfe et al., 2007; Nehring and Lashley, 2004; Seropian et al., 2004a,b). The standard practice in simulation activities calls for educators to observe student participation in simulation scenarios followed by facilitated debriefing led by these educators. Most often debriefing lasts longer than the actual simulation scenario. Depending on class size, a single simulation scenario will occupy an educator for at least an entire day. Heavy workloads and the time commitment needed to conduct effective simulations may limit adoption of simulation into nursing programs. Educators need to use their time effectively when conducting simulations. This needed time commitment leads to the question of whether other methods of debriefing should be considered.

Literature Search

In order to further explore options for debriefing, a literature review was conducted using PubMed, Academic Search Complete, CINAHL, ERIC, and PsychInfo to identify articles and studies examining simulation and debriefing methods. Search terms included "simulation", "debriefing", and "research" and were narrowed with limits of "meta-analysis", "randomized controlled trial", "review", "comparative study", and "controlled clinical trial". Some search terms were combined using the Boolean operator AND. The initial inclusion criteria were as follows: (a) research study with a focus on debriefing, (b) related to nursing students, (c) were English language, and (d) published in the last ten years. Of the 104 abstracts reviewed; only two met the inclusion criteria. Consequently, the search was

* Corresponding author. Tel.: +1 409 772 8207 (office); fax: +1 409772 3770.
E-mail address: ccdufren@utmb.edu (C. Dufrene).

0260-6917/$ – see front matter © 2013 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.nedt.2013.06.026

extended to include research studies with medical students and residents. A total of 13 were included in this review.

Although facilitated debriefing is recommended in the simulation literature, very few research articles reported results of the effectiveness of debriefing. The majority of these studies examined the effects of simulation and may or may not have identified whether debriefing was conducted following simulation. However, a limited number of studies were found, that examined traditional teacher led debriefing versus alternate forms of debriefing, debriefing versus no debriefing, and perceptions of debriefing. A total of thirteen studies are included in this review. This review is grouped in two sections: (a) studies comparing debriefing strategies and (b) perceptions of the usefulness of debriefing.

The simulation studies in the literature have explored the impact of simulation on different dependent variables using simulation as the independent variable (Brannan and Bezanson, 2008; Brown and Chronister, 2009; Hoffmann et al., 2007; Howard et al., 2010; Ironside et al., 2009). The effect of debriefing on the dependent variables was not measured in any of these studies. A limited number of articles were found, that compared debriefing methods with or without a debriefing group (Boet et al., 2011; Bond et al., 2006; Chronister and Brown, 2012; Grant et al., 2010; Morgan et al., 2009; Savoldelli et al., 2006; Shinnick et al., 2011; Van Heukelom et al., 2010; Welke et al., 2009; Zausig et al., 2009). The results of these studies did not show significant differences between groups that received some form of debriefing.

Debriefing Research Studies

Studies Comparing Debriefing Strategies

Debriefing can be accomplished through several methods, such as through group discussion with or without the use of videotape of the students' performances. This first study examines group performance before and after simulation and with and without debriefing. Shinnick et al. (2011) used a two-group, repeated measures experimental design to study prelicensure nursing students ($N = 162$), examining heart failure knowledge gains after simulation with and without debriefing. Students were randomly assigned to experimental or control groups by sections based on the school they attended on the day of the simulation activity. Three parallel 12-item multiple choice questionnaires were administered at different intervals. The control group ($n = 72$) completed the pretest questionnaire and the posttest 1 questionnaire 1 h following the pretest. Immediately following posttest 1, the control group participated in a simulation scenario followed by debriefing. Posttest 2 was administered to participants in the control group following the debriefing. The experimental group ($n = 90$), received the pretest followed by participation in a simulation scenario. Posttest 1 was administered to the experimental group immediately following the simulation. They then participated in a group debriefing followed by Posttest 2. There was no difference in pretest scores between the two groups; however participants in the experimental group had higher scores than participants in the control on posttest 1 and posttest 2. The scores of both experimental and control groups rose significantly after participating in simulation. Investigators concluded that the debriefing following the simulation resulted in significant knowledge gains by participants. The strength of this study was the evidence of outcomes following debriefing.

In another study the effects of two different types of debriefing were compared, oral debriefing or videotape assisted debriefing. Nursing and nurse anesthetist students ($N = 40$) participated in a pilot study comparing the effectiveness of videotape-facilitated debriefing to oral debriefing following high fidelity simulation. Grant et al. (2010) used a quasi-experimental design in which students in the intervention and control groups participated in two 1-hour simulations during the semester. Students were randomly assigned to roles for simulation. The experimental group participated in debriefing sessions with the addition of the video-taped sessions to assist in the discussion, while the control group participated in oral debriefing following each simulation. Students participated in a third simulation in which they were scored on their performance as a post-test only measure. The experimental group scored slightly higher than the control group; however there was no significant difference between the total performance scores. Researchers concluded that both debriefing methods were effective and suggested that students should rotate through different roles to further enhance learning.

Another debriefing strategy involved students critiquing their own performance versus having an instructor offering critique. Boet et al. (2011) compared student self-debriefing to instructor debriefing in a prospective, randomized, controlled repeated-measures design with anesthesiology residents ($N = 50$). Participants were randomized to one of the two groups, and then individually participated in a video-taped high fidelity crisis scenario. Participants in the self-debriefing group observed their performance on their own. They were instructed to observe their performance and note areas in which to improve on their skills. The participants were allowed to fast-forward or rewind the video during the debriefing. Participants in the instructor debriefing group received video assisted feedback from an expert instructor. The time frame for all debriefing sessions was limited to 20 min. Debriefing sessions were immediately followed by a second crisis simulation in which participants were again scored. Significant improvement was found between pre- and posttest scores for all participants regardless of debriefing method used. The researchers concluded that peer debriefing is a viable strategy for nontechnical simulation activities. A strength of this study was the randomized controlled design which allowed control for extraneous variation.

In a study by Bond et al. (2004), cognitive debriefing was compared to a technical knowledge debriefing group following two simulation exercises with emergency medicine residents ($N = 62$). The technical knowledge debriefing group was provided with additional information on the topics covered in the scenarios and the cognitive debriefing group was provided with detailed descriptions of the concepts used in the scenarios and information on cognitive errors. The debriefings were done using a PowerPoint with audio format and lasted 30 min per debriefing session. Results from a post-test simulation indicated no statistically significant differences in performance between the groups; however, post-survey data indicated that participants preferred the technical debriefing method.

Chronister and Brown (2012) used a comparative crossover design in a study with baccalaureate nursing students ($N = 37$) to compare the effects of debriefing with verbal feedback only with debriefing using video-assisted verbal discussion. Students were randomly assigned to one of the two groups and participated in a simulation scenario followed by one of the two debriefing methods. A pre-test was administered to students before the simulation activity. One week following the activity, students were administered a parallel exam as a post-test and then participated in a repeat of the same simulation activity. There was no significant difference in overall performance scores between the groups; however, the group that received video-assisted debriefing had significant increase in response times for the second simulation compared to the group that received the verbal debrief only. Post-test knowledge scores decreased in the video-assisted debriefing group and increased in the verbal debriefing only group. Analysis with a two-tailed t-test indicated a statistically significant difference between pre- and post-test scores for the verbal debrief only group.

Simulation debriefing was compared to home study and no debriefing in a prospective, randomized, controlled study by Morgan et al. (2009). Practicing anesthetists ($N = 58$) were randomly assigned to one of the three groups: high-fidelity simulation debriefing led by an experienced facilitator, a home study program, or no educational intervention (control group). The debriefing intervention consisted of a standardized PowerPoint presentation and one-on-one debriefing with a facilitator. The home study program consisted of peer-