Clinical Simulation in Nursing (2017) 13, 145-153

Clinical Simulation in Nursing

www.elsevier.com/locate/ecsn

Featured Article

Effects of Video-Assisted Debriefing Compared with Standard Oral Debriefing

Marycarol Rossignol, PhD, RN, CNL[*,1]

College of Nursing, Seton Hall University, South Orange, NJ 07079, USA

KEYWORDS
Video-assisted debriefing;
Simulation;
Stress responses;
State anxiety;
Performance

Abstract

Background: Video playback during debriefing is a frequent recommendation to develop skillful practice; however, research shows no clear benefit.

Method: A randomized controlled trial was conducted to determine the effects of type of debriefing on psychophysiological stress responses and performance of nursing students in a repeated simulation after approximately two weeks.

Results: Compared with oral debriefing, video-assisted debriefing had no significant effect on the psychophysiological stress responses and performance. Across sessions, state anxiety significantly decreased and performance score improved.

Conclusion: Reduced psychological stress and improved performance found in the repeat exposure validate the usefulness of simulation-based education to foster practice-based learning.

Cite this article:
Rossignol, M. (2017, April). Effects of video-assisted debriefing compared with standard oral debriefing. *Clinical Simulation in Nursing, 13*(4), 145-153. http://dx.doi.org/10.1016/j.ecns.2016.12.001.

Clinical students are expected to maintain performance quality under stressful conditions. Nevertheless, elevated stress responses may alter performance quality. Anxiety is a negative emotional response that can occur when threatened with pressure to perform. The biopsychosocial model of challenge/threat can help to explain the influence of stress on performance (Blascovich, 2008; Blascovich & Tomaka, 1996). According to the model, there is an ongoing interplay involving psychophysiological components influenced by perceptions of challenge and threat when under stress to perform. Those who perceive the performance situation as a challenge (low demands and high personal resources) will likely meet or exceed performance expectations with improved capabilities such as better attention, decision making, and efficient physiological responses. Conversely, not only those who perceive threat (high demands and low personal resources) are more likely to perform less proficiently with poor attentional control and less efficient physiological responses but also these physiologic responses can be harmful when there is long-term activation (Seery, 2011).

There are distinct patterns of cardiovascular responses that accompany psychological perceptions to challenge and threat. Whereas both challenge and threat have sympathetic-adrenomedullary activation (adrenaline), with threat there is also activation of the pituitary-adrenocortical

[1]Present address: Henry P. Becton School of Nursing & Allied Health, Fairleigh Dickinson University, 230 Park Avenue, M-SP3-01, Florham Park, NJ 07932, USA.

* Corresponding author: rossigma@fdu.edu (M. Rossignol).

1876-1399/$ - see front matter
http://dx.doi.org/10.1016/j.ecns.2016.12.001

axis (cortisol) (Seery, 2011). Challenge enhances cardiac performance (i.e., increased heart rate and cardiac output) and is accompanied by vasodilation of arterial blood vessels in skeletal muscles with a net result of no change in blood pressure. Whereas the threat pattern of cardiovascular responses is less efficient because despite enhanced myocardial performance (i.e., increased heart rate and cardiac output), the arterial blood vessels in skeletal muscles do not dilate triggering increases in blood pressure.

Key Points

- Despite the importance of debriefing, the appropriate format for conducting debriefings remains unclear.
- The debriefing format did not make a difference in stress response and performance.
- The reduced psychological stress and improved performance found in the repeat exposure validates the usefulness of simulation-based education to foster practice-based learning.

Studies in health care contexts provide evidence in support of the bio-psychosocial model. For example, when laboratory conditions are stressful, paramedics had lower scores in calculating drug dosages (LeBlanc et al., 2005), medical students showed impaired aspects in clinical reasoning (Pottier et al., 2013), and resident trainees demonstrated higher state anxiety scores, cognitive appraisal of threat, and cortisol levels (Harvey, Nathens, Bandiera, & LeBlanc, 2010).

Performance evaluations can be profound stressors because of the threat of a poor grade or poor evaluation (Dickerson & Kemeny, 2004) that contributes to threat appraisal and results in harmful cardiovascular stress responses. Nursing students have identified the highest anxiety-provoking clinical experiences to include being under observation or evaluated by faculty, initial learning experiences, and fear of making errors (Kim, 2003; Kleehammer, Hart & Keck, 1990). Simulation performances have also been perceived by students to be stressful (Judd et al., 2016; Keitel et al., 2011; Müller et al., 2009), particularly in the high-stakes summative evaluation (Horsley & Wambach, 2016).

In the performance of high-fidelity simulated scenarios, students experience the consequences of their decisions and actions or nonresponse and errors. The debriefing session held after the simulation exercise provides a special form of feedback structured to guide participants to reflect on performance and recognize acceptable practice and areas to improve. A strong debriefing facilitates better awareness of one's performance and reactions in stressful situations. Without the debriefing, participants' nonresponse or errors not only may remain unrecognized but also might erroneously become embedded into practice. In two studies that compared debriefed with nondebriefed groups, educational benefits such as lower rate of adverse events and higher test scores occurred only in the debriefed group (Hamad, Brown, & Clavijo-Alvarez, 2007; Shinnick, Woo, Horwich, & Steadman, 2011).

Despite the importance of debriefing, the appropriate format for conducting debriefings remains unclear. Video playback or review of key scenes during the debriefing is a recommended tool believed to support learning and improve the overall quality of debriefing (Decker et al., 2013; Fanning & Gaba, 2007; Motola, Devine, Chung, Sullivan, & Issenberg, 2013). Scherer, Chang, Meredith, and Battistella (2003) suggest that video review helps to align perception of performance with actual performance and thereby increase awareness of problems or gaps. They also posit that video review adds precision in targeting specific behavior changes in order to improve.

Regardless of broad acceptance, there is limited empiric evidence of educational benefits of video-assisted debriefing (VAD). In support of video review, Birnbach et al. (2002) found significantly improved overall performance scores of residents placing epidural anesthesia with use of video review compared with typical teaching sessions with the anesthesiologist. Chronister and Brown (2012) documented mixed findings with evidence of higher performance ratings in the VAD group but greater knowledge gains in the non–video-debriefed group in a small convenience sample. However, a recent meta-analysis of four studies that compared effects of VAD with non–VAD concluded that additional educational benefits from the video-assisted component were negligible (Cheng et al., 2014). Furthermore, ratings of the usefulness of VADs by students tend to be similar to oral debriefings (ODs) (Reed, Andrews, & Ravert, 2013).

Providing deliberate practice opportunities to improve skill acquisition of novice clinicians is the educational theory underlying use of simulation-based health care education. Deliberate practice include activities such as setting well-defined tasks or skills to achieve, receiving detailed feedback on performance of the task or skill, sufficient time to practice and repeat the task, and continued opportunities to refine skill performance (Ericsson, 2004).

Repetitive practice has been identified as a key feature of simulation-based health care education to improve practice-based learning (Barry Issenberg, Mcgaghie, Petrusa, Lee Gordon, & Scalese, 2005). Studies document improved performance, particularly over short and medium terms (i.e., one week to six months), on repeat exposure in simulated emergency medical situations using a patient simulator (Steadman et al., 2006; Wayne, Barsuk, O'Leary, Fudala, & McGaghie, 2008; Yee et al., 2005) and high skill retention three months after the initial simulation training (Tuttle et al., 2007).

The examination of psychophysiological responses and performance has not been studied in a repeated simulation scenario. Further study to compare outcomes of two types of debriefing is warranted. The aim of the study was twofold: investigate effects of stress responses and performance in a repeat exposure and examine effects of VAD compared with