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Early Evidence for Using a Train-the-Trainer Program to Teach Debriefing for Meaningful Learning

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Abstract

Background

Competent debriefers are essential to promote positive learner outcomes. While important, providing training to faculty may be difficult. The Train-The-Trainer (TTT) model is a successful approach for efficiently training large groups of individuals.

Methods

This study used a purposive, descriptive research design to test the feasibility and effectiveness of a TTT program for teaching debriefers how to implement and train others to use Debriefing for Meaningful Learning (DML).

Results

With training, assessment, and individualized feedback, trainers and trainees alike improved their ability to use DML, as well as self-assess their debriefing.

Conclusion

The TTT program was a successful, feasible, cost-effective way to provide DML training.

Keywords

Competency, Debriefing training, Debriefing for meaningful learning, Train-The-Trainer

Quality debriefing is a critical component of simulation pedagogy (Alexander et al., 2015). The Healthcare Simulation Standards of Best Practice™ recommend that debriefers should demonstrate competence, proficiency, be skilled in evidenced-based debriefing practices (INACSL Standards Committee et al., 2021a), and participate in ongoing professional development (INACSL Standards Committee et al., 2021b). Despite these recommendations, no definition of formal training or subsequent competency has been established (Bradley et al., 2019; Smiley, 2019). Training to use Debriefing for Meaningful Learning (DML), one common debriefing method, has primarily been delivered by a few DML experts (Bradley, 2019). However, as the demand for DML continues to grow, new strategies to successfully train and evaluate debriefers are needed to meet the growing need. Currently, there are limited reports detailing the amount and type of debriefer training needed to produce competent debriefers (Bradley et al., 2022; Bradley et al., 2023; Woda et al., 2022, Woda et al., 2023).

The purpose of this study was to test the feasibility and effectiveness of a Train-The-Trainer (TTT) program for teaching debriefers how to implement and train others in DML. Specifically, the following research questions were addressed: (a) How well can a DML trainer implement DML using the TTT process? (b) Is the DML trainer's subjective assessment of their debriefing different than an objective rating by an expert watching the same recording? (c) How well can a DML trainee implement DML after receiving training from a DML trainer? (d) Is the DML trainee's subjective assessment of their debriefing different than an objective rating by the DML trainer and an expert watching the same recording?

Literature Review

Train-The-Trainer

The basis of the TTT model is for experts to train novices by first offering them resources to understand and implement the task or topic, then training them to train other novices (Center for Disease Control [CDC], 2019; Poitras et al., 2021). This model has been recognized as a successful approach for developing trainers who can then train other individuals in skills or aspects of their professions to broaden the number of people trained (CDC, 2019; Woda et al., 2022). Three goals of this model include: (a) increasing content knowledge, (b) developing the skills of future trainers, and (c) building a community of competent trainers to maximize training resources (Servey et al., 2020).

The TTT model uses a tiered approach to efficiently train large groups of individuals in multiple tiers (Peterson, Watts, Epps, & White, 2017). The process begins with the expert providing training to the first tier (trainers) and is followed by those individuals then training the second tier (trainees). The use of champions (identification, development, and implementation) within the TTT model (Lane & Mitchell, 2013) is effective for training others on how to debrief (Woda et al., 2022). Debriefing training using TTT requires observation and competency assessment of each level of the trainers and trainees for this model to be successful (Woda et al., 2022) and improve debriefing performance of a large number of debriefers (Bradley et al., 2023; Woda et al., 2022; Woda et al., 2023) resulting in a resource-effective way to ensure they are trained in a consistent and time-efficient manner (Peterson, Watts, Epps, & White, 2017; Poitras et al., 2021).

Debriefing

Debriefing occurs at the end of a simulation or clinical experience when the debriefer guides the learners in a reflective discussion regarding key takeaways from the experience (Dreifuerst, 2015), to correct learners' misunderstandings and guide correct actions and thinking (Dreifuerst, 2015). The use of an evidence-based debriefing method helps achieve positive learning outcomes when learners are engaged in a reflective, structured conversation about the experience and how to apply their learning to future situations (Dreifuerst, Bradley, & Johnson, 2021; Kolbe, Grande, Lehmann-Willenbrock, & Seelandt, 2023).

DML is a faculty-facilitated, guided reflection, clinical teaching method grounded in educational theory (Dreifuerst, 2012). The debriefer uses a Socratic style of questioning to assist the learners to think like a nurse while they reflect on the thinking and decision-making processes that occurred during their patient care experience (Dreifuerst, 2015). Use of this theoretically derived debriefing method has positively impacted knowledge (Johnson, 2019; Loomis, Dreifuerst, & Bradley, 2022), clinical reasoning, clinical judgment skills (Dreifuerst, 2012; Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014) and problem-solving (Yang & Oh, 2021) among prelicensure nursing students.

Debriefing Training and Competence

While it is recommended that a debriefer possess competence, proficiency, and skill in evidence-based debriefing (INACSL Standards Committee et al., 2021a), debriefers frequently report a lack of training in competency assessment (Bradley, 2019). Many debriefers are unaware of effective debriefing strategies and lack confidence in their debriefing skills (Ng et al., 2021). The goal of a training program is to reduce barriers around effective debriefing and provide novice educators with mentorship that

includes performance feedback to facilitate debriefing strategies and increase confidence (Raney et al., 2020; Woda et al., 2022).

Available assessment instruments often place emphasis on the broad elements of debriefing (Robinson et al., 2020; White, Hayes, Axisa, & Power, 2021), rather than the competence of implementing the specific steps of a particular debriefing method (Lee et al., 2020). While debriefers often have varying levels of experience, the chances of success increase when a framework incorporating observations, best practices, evidence, and expert opinion is utilized (Cheng et al., 2020). The TTT model can aid retention of debriefing skills for both the trainer and the trainee (Robinson et al., 2020) and improve self-efficacy (Paige, Arora, Fernandez, & Seymour, 2015). Therefore, to become a competent debriefer, it is essential that training includes content regarding evidence-based debriefing, multiple opportunities for application, and debriefing practice, followed by performance assessment with feedback.

Theoretical Framework

The theory of deliberate practice emphasizes that learning occurs by repeatedly applying what has been learned with ongoing feedback from the expert (Ericsson, 2002). This theoretical framework underpins this study well as the TTT model requires learning and applying content with repeated practice and assessment to gain expertise and transition from a learner into the role of a trainer.

Methods

This study used a purposive, descriptive research design to test the feasibility and effectiveness of a TTT program for teaching debriefers how to implement and train others in DML. Following IRB approval, participants from prelicensure baccalaureate nursing programs in three midwestern states were recruited to be DML trainers and trainees. Participants were eligible for inclusion in the study if they had at least 1 year of prior debriefing experience and were currently teaching in simulation and debriefing with prelicensure BSN students. DML trainers agreed to (a) attend a formal DML training including the new TTT components, and (b) implement DML debriefing at least twice with students where their debriefing was recorded and assessed, and (c) provide DML training to at least one other debriefer referred to as DML trainees at their school which would also be recorded and assessed. Trainees agreed to implement and record DML debriefings at least twice within 3 months of their training such that recordings could be assessed by the DML trainer and a DML Expert.

Instruments

Demographic information was collected from all participants. The Debriefing for Meaningful Learning Evaluation Scale (DMLES), a 20-item DML behavioral rating scale (Bradley, Johnson, & Dreifuerst, 2021), was used for both subjective and objective assessment of the DML trainers and DML trainees. Each item assesses behaviors consistent with DML as either present or not present. Psychometric testing demonstrated construct validity, criterion-related content validity, and internal consistency reliability (Cronbach's $\alpha = 0.964$) (Bradley et al., 2021). Debriefers received feedback based on their debriefing assessment using the DMLES. A score of 16 or greater on the DMLES indicated a competent level of debriefing.

Procedure

DML trainer participants received formal DML training during a 4-hour in-person session led by DML experts (Woda et al., 2022). Training topics included the theoretical background, use of DML worksheets, instruction on the sequence, and process, use of colored markers, and how to ask Socratic questioning to guide reflective thinking (Dreifuerst, 2015). Training also consisted of how to subjectively assess one's debriefing using the DMLES (Bradley et al., 2021). Participants had opportunities to practice, ask questions, and receive feedback during the training session. After the training session, DML trainer participants practiced DML and then debriefed their own students using DML at least twice. The debriefing was recorded and uploaded to a secure website. Within 1 week, trainers self-assessed their debriefing using the DMLES while watching a recording. DML experts also viewed and rated the debriefing using the DMLES and provided detailed feedback. Few DML trainers needed to submit additional debriefings until they demonstrated competence based on the DMLES. After reaching competency but before training others, DML trainers attended a second 2-hour synchronous session via videoconferencing for a refresher training, which also included how to use the TTT model to train, assess, and provide feedback to DML trainees in their individual nursing programs.

Trainers then recruited one to three faculty from their school to train to use DML debriefing. Trainers were provided consistent training materials and processes for training trainees, similar to how they were trained. Following this training and subsequent practice, the trainees then implemented DML debriefing at least twice with students during one semester. These debriefings were recorded and uploaded to a secure website. Within one week, the DML trainees self-assessed their debriefing using the DMLES while watching their recording. Each debriefing was also rated by their DML trainer and a DML expert using the DMLES. Each DML trainer demonstrated debriefing competence prior to training others. In addition to being competent, it was important that the DML trainers could accurately assess and provide feedback to their DML trainees. To ensure the accuracy of the trainers assessment and feedback, the DML expert reviewed the DML trainer's written feedback, provided additional feedback as needed, and clarified any incorrect scoring on the DMLES via email or virtual meetings. Once in agreement, the DML trainer then provided written feedback to the DML trainee. Additional details regarding the development and implementation of this TTT procedure have previously been published (Woda et al., 2022).

Data Analysis

Demographics and deidentified data were prepared using Microsoft Excel and uploaded into SPSS version 28. Descriptive statistics were used to summarize demographic characteristics. Inferential statistics included paired-samples t-tests and Pearson's correlations. A $p < .05$ was used for all statistical comparisons.

Results

Initially, 32 individuals participated as DML trainers. Most (72%) were Master's prepared Nurse Educators ($n = 23$), 94% were Caucasian ($n = 30$), and 91% were female ($n = 29$). However, due to the COVID-19 pandemic, many participants withdrew due to the stress of a continually changing clinical environment, change in teaching assignments, or for personal reasons, resulting in 12 DML trainers. There were five trainers that reported training 1 trainee ($n = 5$ trainees), another five trainers that

trained two trainees ($n = 10$ trainees), and two trainers that trained three trainees each ($n = 6$ trainees). A total of 21 individuals who participated as DML trainees, 86% were Master's prepared ($n = 18$), 95% were Caucasian ($n = 20$), and 95% were female ($n = 20$).

A paired-samples t-test was used to answer the first research question to determine whether there was a statistically significant mean difference in trainer DMLES scores from the first debrief to the last debrief. There was an improvement from the first debrief submitted ($M = 13.66$, $SD = 3.09$, range 8-20) to the final debrief submitted ($M = 16.88$, $SD = 2.91$, range 12-20). Although there was not a statistically significant improvement in trainer DMLES scores by the midpoint ($p = .293$), there was a significant improvement by the final assessment ($p = .005$), improving from a mean score of 13.66 to 16.88; all but two participants demonstrated competence by scoring greater than 16. One of the two participants withdrew, while the other received additional DML training, submitted two additional debriefing videos, and demonstrated competence before training DML trainees.

To answer the second research question, a paired-sample t-tests was run to determine if there was a statistically significant mean difference between the trainer DMLES subjective rating while watching their recorded debriefing, and the objective expert DMLES score. For the first two debriefings, trainers rated themselves significantly higher than experts did ($p < .01$ for both debriefings). By the third and final debriefing, trainers and experts were rating more similarly and there were no statistically significant differences between the subjective rating and the objective expert rating ($p = .15$). The DMLES items 13 (reflection-in-action), 14 (reflection-on-action), 16 (reflection-beyond-action), and 17 (DML process) demonstrated a mismatch between subjective and objective, but these differences were not statistically significant.

To address the third research question, a paired-samples t-test was run to evaluate if there was a statistically significant mean change in Trainee DMLES scores rated by the experts from the first to the second debrief. Although there was not a statistically significant improvement ($p = .111$), there was a practically important change (Spurlock, 2019) as trainees improved from a mean score of 13.76-16.29, an improvement of 2.5 points on a 20-point scale. This is practically important because it is equivalent to improving from 68.8 to 81.5 on a 100-point exam.

A paired-samples t-tests was used to answer the final research question and determine whether there was a statistically significant mean difference between the trainee's subjective DMLES ratings, the objective trainer score, and the objective expert rating after watching the trainee's recorded debriefing. When compared to DML experts, trainees' subjective scores were significantly higher for both their debriefings ($p = .01$; $p = .04$ respectively). Trainers scored their trainees' debriefings significantly lower for the first debrief ($p = .00$), but they were scoring much more similarly, with no statistically significant differences for the second debrief ($p = .14$). Trainers and experts rated more similarly for both debriefings and demonstrated mismatch ratings between the trainees, the trainers, and the experts on DMLES items 13 (reflection-in-action), 14 (reflection-on-action), and 17 (DML process).

Discussion

Overall, the TTT model was found to be an effective way of providing DML debriefing training. The ability of both trainers and trainees to implement DML correctly improved over time to a level of

competence. This is an important finding as it provides another option for debriefing training that can be widely implemented.

Interestingly, both the DML trainers and the DML trainees initially assessed their debriefing with higher DMLES scores than the experts. This indicates the Dunning Kruger Effect (DKE), a cognitive bias in which people who are unskilled in a particular task overestimate their ability (Bradley, Dreifuerst, & Johnson, 2022). The data revealed a DKE when debriefers who were not skilled in DML scored themselves higher on the DMLES in comparison to the DML experts who score debriefing true to the rubric, which is consistent with prior studies of the impact of DML training (Bradley et al., 2022). In fact, debriefing experts were still scoring the DML trainers lower than the subjective assessment at the second debriefing evaluation. However, by the final debriefing, DML trainers and experts were scoring similarly, even though the more novice trainees were still overestimating their competence. The former is likely due to the individualized written feedback provided to the DML trainers. This feedback was specific to the DMLES and gave specific details on what behavior was either absent or was not done correctly, including suggestions for improvement. Trainee overestimation of competence represents the persistent cognitive bias of the novice perspective (Bradley et al., 2022) supporting the need for expert feedback for those who are new to providing DML training and evaluation for others.

Positive findings from the TTT program are likely due to the inherent repeated deliberate practice with DML debriefing along with the individualized feedback that was provided to each DML trainer and DML trainee based on the expert assessment of their recorded debriefing. This included both feedback for improvement and feedback on how to correctly rate themselves using the DMLES. Therefore, DML trainers became more critical of their subjective assessment and evaluations of others.

Interestingly, DMLES item 13 (reflection-in-action), item 14 (reflection-on-action), and item 16 (reflection-beyond-action) demonstrated the most notable discrepancies between subjective and objective ratings. Similar findings of rater mismatch on these items have been reported previously (Bradley et al., 2022). These discrepancies between subjective and objective assessment suggest that additional or improved training and education is needed regarding the use of these three types of reflection during debriefing and how to improve facilitating reflective thinking in learners. Additionally, more training may be needed during debriefing training to improve assessment using the DMLES.

Training using a TTT approach adds to the growing evidence supporting improved debriefing competence after receiving training (Bradley, 2019; Bradley et al., 2022, Bradley et al., 2023; Pannekoeke, Knudsen, Kambe, Vae, & Dahl, 2023; Woda et al., 2022, Woda et al., 2023). Other work further demonstrates that training debriefers can have a positive impact on student outcomes (Endacott, Gale, O'Connor, & Dix, 2019), but, attending faculty development workshops is challenging for many nurse educators due to time and cost constraints (Cheng et al., 2017; Vázquez-Calatayud, Errasti-Ibarrondo, & Choperena, 2021). Moreover, these types of debriefing trainings typically do not provide performance evaluation (Cheng et al., 2017). Therefore, a TTT program may be a useful alternative that is also cost-effective. Additionally, the TTT program provides a model for use within simulation centers to demonstrate competency evaluation of debriefers, a necessary component of endorsement and accreditation.

Limitations

This study had several limitations. Because of the timing and the impact of COVID-19, study participation decreased over time and the resulting sample was small. Although DML could be used after any simulation, external factors such as limited time or available space to complete debriefings may have impacted the debriefers' ability to implement DML correctly, yet there was no mechanism to capture this. The time between when the training content was delivered to the DML trainers and when the DML debriefing occurred may have impacted the findings as a result of COVID-19 related changes in clinical and simulation experiences and curriculum.

Conclusion

This study evaluated the impact and feasibility of using a TTT program to teach others how to use DML debriefing. Overall, the model was successful and feasible with most trainers and trainees demonstrating competence in using DML. Building on these findings, it would be wise to repeat the study post COVID-19 with a larger trainer and trainee sample and more than three debriefings to be evaluated. Specific attention in the TTT process to the debriefing actions associated with guided reflection would also be warranted. Additionally, a cost analysis comparing TTT to traditional debriefing education would further contribute to this growing body of literature.

Declaration of Competing Interest

The authors of this manuscript have no conflicts of interest, financial, or otherwise to disclose.

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