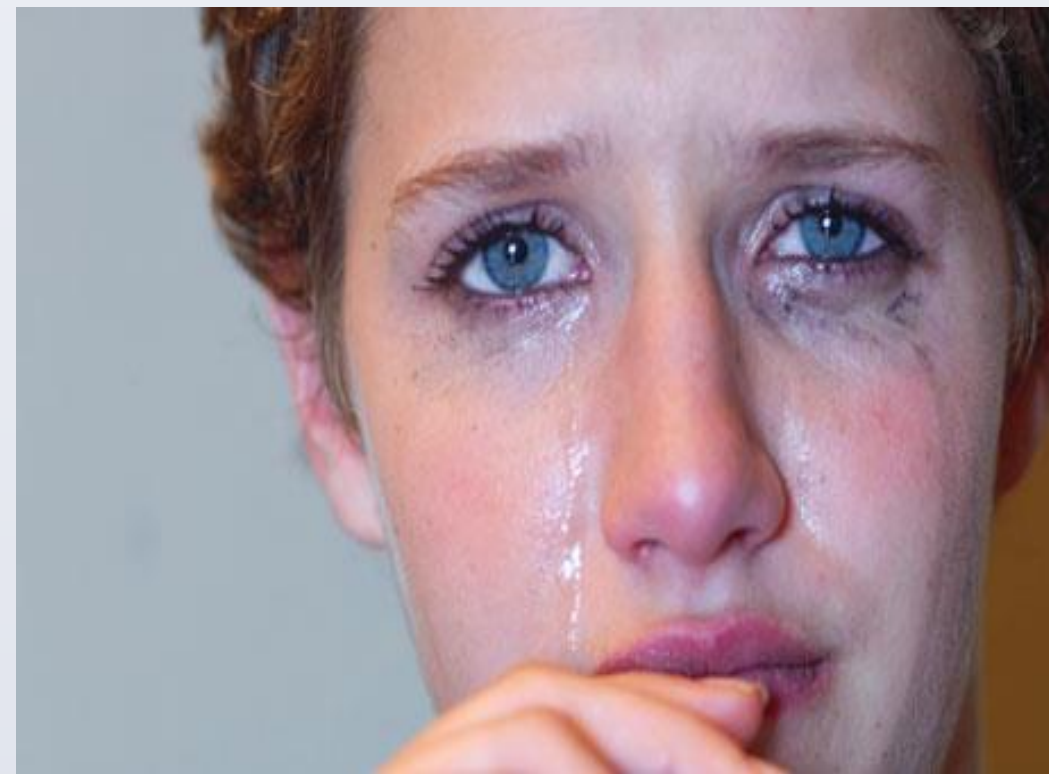




## Introduction of Problem

The aim of this paper is to demonstrate benefit of the Ongoing Simulation Debriefing Technique on lowering stress and anxiety levels amongst Student Registered Nurse Anesthetists participating in simulation activities at Samuel Merritt University. It is hoped that the reduction in stress and anxiety will result in fewer emotional breakdowns and enhance learning outcomes in highly stressed and sensitive students.



In recent years, many nurse anesthesia-training programs have incorporated simulation training into their curricula.

The use of simulation training has demonstrated benefits in developing students' critical thinking abilities as well as building clinical competence. On the other hand, for some students, simulation training is known to raise anxiety and stress levels high enough to have a negative impact on their learning (Henrichs, Rule, Grady, & Ellis, 2002).

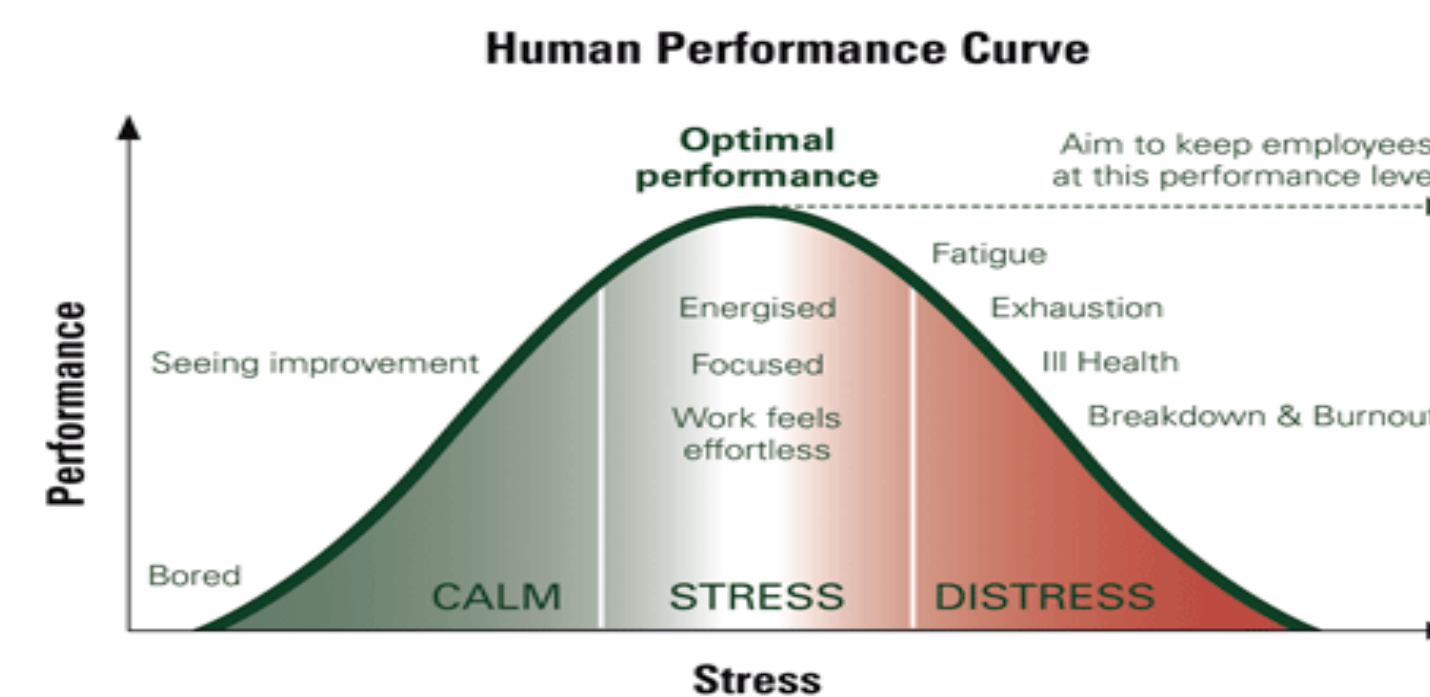
Graduate students experience high levels of stress, anxiety and depression: overall graduate student = 20%, medical school student = 41%, Nurse Anesthesia Resident = 51% Moffat (2005). Simulation adds to stress, which, in some students can cause a decrease in performance, emotional breakdowns and decreased learning outcomes.

Excessive stress and anxiety, associated with simulation, has the potential to cause emotional breakdowns in sensitive students.

## Background / Significance

Scientific evidence shows a relationship exists between high levels of stress and poor performance. High stress, caused by simulation, can cause breakdowns in some sensitive students.

Figure 1: The Yerkes-Dodson Human Performance and Stress Curve



## Project Design

- A quasi-experimental design was used to collect data (control and intervention)
- Convenience sample for subjects - single-blinded study
- State Trait Anxiety Inventory (STAI) scoring was done manually
- STAI scores were documented in Microsoft Excel spreadsheet
- Data was transferred into SPSS software
- Data were analyzed for significance using paired T-test

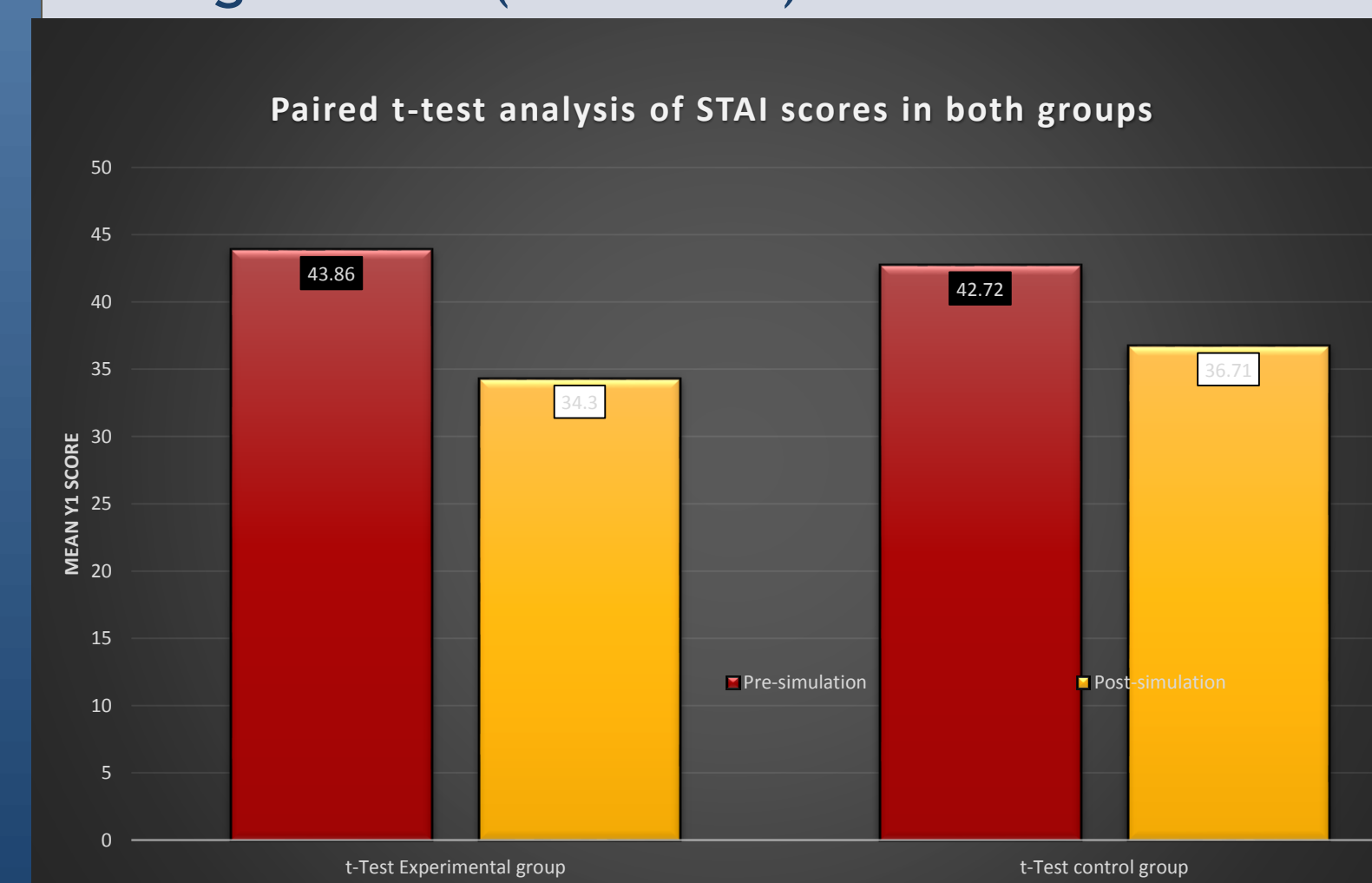
## Methodology

- IRB approval requested and received
- Subjects recruited and divided into two groups (control and experimental)
- **Ongoing Simulation Debriefing Technique** is a method by which simulation participants, who are viewing simulations, are guided by a knowledgeable debriefer while the simulation is occurring.
- **End Simulation Debriefing Technique** is the "gold-standard" - it is systematic, individualized, self-reflection, or review after the simulation is concluded.

- Pre-simulation/post-simulation anxiety levels were evaluated in first year nurse anesthesia students (n=78) in three different scenarios using the State Trait Anxiety Inventory (STAI).
- Both groups were exposed to identical simulations
- Students were asked to complete a demographics questionnaire both pre/post simulation.
- Data were collected from 2012 thru 2013.

## Analysis & Results

- Data was analyzed for validity and significance utilizing SPSS and T-test analysis.
- The anxiety levels were reduced in both control and experimental groups.
- Anxiety levels were reduced more in the experimental group (Ongoing Simulation Debriefing Technique).
- The overall mean STAI scores were reduced by 15.21 and 21.81 percentage points, respectively, in control and experimental groups. The difference between means was statistically significant ( $P < 0.001$ ).



## Conclusions

- Ongoing Simulation Debriefing Technique reduces stress and anxiety levels generated by simulation more than when using the End-Debriefing Technique.
- The Ongoing Simulation Debriefing Technique creates a safer learning environment in which "stressed students" can maximize their learning potential.
- The Ongoing Simulation Debriefing Technique should be considered as a best practice for Simulation Based Learning with already stressed adult learners.
- Professors utilizing simulation-based education should receive formal training on crisis intervention - First Aid for Simulation-Based Breakdowns.
- A Simulation Emotional Rapid Response Team needs to be established and students should be referred to this team when emotional breakdown occurs to protect their long-term wellness.

## References

Moffat, K., McConnachie, A., & Ross, S. (2005). First year medical school students stress and coping mechanisms in a problem-based learning medical education. *Medical Education*, 482-491.

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