



# Examining the Effectiveness of Education Provided to Student Registered Nurse Anesthetists' (SRNA) Regarding Pre-Operative Administration of Midazolam in Patients with Post-Traumatic Stress Disorder (PTSD)

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## BACKGROUND

- Post-traumatic stress disorder (PTSD) is identified as a mental health condition in which a traumatic event causes a "clinically significant distress or impairment in the individual's social interaction, capacity to work, or other important areas of function" (American Psychiatric Association [APA], 2013).
- 3.5% of the United States' population is coping with the disorder throughout their daily lives and upwards to one in 11 people may suffer from the condition within their lifetime (APA, 2020)
- Evidence-based guidelines over how to appropriately manage PTSD patients perioperatively to reduce incident of emergence delirium are limited.

## REVIEW OF LITERATURE

- An integrated research review (IRR) was completed to examine the most current literature to determine if a relationship between PTSD patients, preoperative administration of midazolam, and an increased incidence of emergence delirium could be extrapolated.
- Inclusion criteria used to identify potential articles related to findings between midazolam and emergence delirium, and post-traumatic stress disorder and emergence delirium.
- CINAHL, PubMed, and ScienceDirect databases were utilized for the search of articles published from years 2014 through 2020.
- In total, 10 articles met inclusion criteria for use in the integrated research review.

## FINDINGS

- A connection exists between the preoperative administration of benzodiazepines, including but not limited to midazolam, and a higher risk for experiencing emergence delirium in the adult population.
- Adult patients with PTSD are at a higher risk for developing emergence delirium
- There remains a need to collect empirical research that addresses best practice recommendations to decrease the occurrence of emergence delirium in high-risk populations (Lovestrand et al., 2017).

## PURPOSE STATEMENT

- To educate Student Registered Nurse Anesthetists (SRNAs) on the pre-operative administration of midazolam and its effect on emergence delirium in adult patients with post-traumatic stress disorder (PTSD) undergoing general anesthesia.

## PROJECT IMPLEMENTATION

### DESIGN

- Presentation:** A 17-slide PowerPoint presentation was created to display the pertinent information found upon completing the IRR.
- Pre- and Post-tests:** Pre- and post-tests were created using an online survey system (SurveyMonkey) that covered the findings compiled during the integrated research review. The questions and content were created independently by the primary investigator and consisted of 9 questions that were identical in format and content.

### METHOD

- Subjects consisted of current SRNAs attending Union University that were voluntarily recruited via email
- Participants were instructed to complete the pre-test, review the PowerPoint presentation, and then complete the post-test.
- The overall scores from the pre-test and post-test were compared to determine if a significant difference in scores existed between the two tests.

## RESULTS

- In total, ten participants (n=10) successfully completed the pre-test and post-test. A paired-sample t-test was conducted to compare the scores obtained by participants on the pre-test and post-test. There was a significant difference in the scores for the pre-test (M=5.40, SD = 0.84) and the post-test (M = 7.90, SD = 1.29);  $t(9) = 11.18$ ,  $p = <0.0001$ .

### Paired Samples Statistics

Group	Mean	N	Std. Deviation	Std. Error Mean
Pre-Test Scores	5.40	10	0.84	0.27
Post-Test Scores	7.90	10	1.29	0.41

Note. Scores range from 0 (no answers correct) to 9 (all answers correct)

### Paired Samples t-Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the difference				
				Lower	Upper			
Paired PRTDTA-POTDTA	-2.50	0.50	0.224	-3.01	-1.99	11.18	9	<0.0001*

Note. PRTDTA = Pre-test scores Data, POTDTA = Post-test scores Data

\*The value of  $p$  is  $< .00001$ . The result is significant at  $p < .05$

## INTERPRETATION & DISCUSSION

- Upon completion of the IRR, it was important to ensure that the pertinent findings and recommendations were made available to individuals who will benefit from the information as it relates to providing patient care.
- An educational presentation was created and reviewed by current Student Registered Nurse Anesthetists (SRNAs) to make them aware of the relationships discovered from the IRR.
- To gauge the effectiveness of the presentation as an educational tool, the SRNAs were instructed to take a pre-test prior to viewing the presentation followed by completion of a post-test.
- Since a higher score indicates a higher number of questions answered correctly, a higher score on the post-test that is of significant difference from the pre-test score would suggest that SRNAs experienced an increase in knowledge over the subject matter after viewing the presentation.
- The results found from this project suggest that the PowerPoint presentation increased participants' knowledge over the subject matter.

## RECOMMENDATIONS

- The preoperative identification of patients at risk for emergence delirium followed by the formation of standard guidelines for the perioperative management of these patients remains to be established into common practice.
- There is a need to develop an appropriate plan of care utilizing multidisciplinary approach between patients, nurses, and anesthesia providers to improve patient outcomes
- Educational materials, such as the one developed during this project, may be useful for bringing awareness to the subject and implementing a change in how patients with PTSD are managed in the perioperative setting.

## REFERENCES

- American Psychiatric Association. (2013). American Psychiatric Association DSM 5 PTSD [PDF]. <https://www.psychiatry.org>
- American Psychiatric Association. (2020). What is posttraumatic stress disorder? <https://www.psychiatry.org/patients-families/ptsd/what-is-ptsd>
- Lovestrand, D., Lovestrand, S., Beaumont, D. M., & Yost, J. G. (2017). Management of emergence delirium in adult PTSD patients: Recommendations for practice. Journal of PeriAnesthesia Nursing, 32(4), 356-366. <http://dx.doi.org/10.1016/j.jopan.2015.11.011>

"Behold, I will bring to it health and healing, and I will heal them and reveal to them abundance of prosperity and security."  
*Jeremiah 33:6, ESV*