

Title:

Prevention of Post-Intensive Care Syndrome in Spouses With SAF-T Intervention

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Rising Stars of Research and Scholarship Invited Student Posters

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Abstract Summary:

Critical illness is a family crisis. Family distress in response to critical illness does not disappear after intensive care unit (ICU) discharge. Ongoing anxiety, depression, and posttraumatic stress disorder (PTSD) are commonly occurring complications in ICU survivors and their families, which have been identified as Post Intensive Care Syndrome (PICS).

Learning Activity:

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
<p>The learner will be able to identify Post Intensive Care Syndrome complications in family members of ICU survivors.</p>	<p>The Society of Critical Care Medicine has identified a cluster of complications that occur in family members of ICU patients as Post Intensive Care Syndrome-Family (PICS-F). PICS in family members of adult ICU survivors include symptoms of ongoing anxiety, depression, and post-traumatic stress disorder (PTSD).</p>
<p>The learner will be able to learn new knowledge on the feasibility and practicality of providing interventions for spouses of critically ill patients, during the early ICU admission period, as well as feasibility of longitudinal follow-up measures post hospital discharge.</p>	<p>In a prospective randomized controlled trial, spouses in the intervention group received SAF-T intervention daily, over the first 3 days in ICU stay. Spouses in the control group did not receive SAF-T. Sleep/rest was measured on all participants over the first 3 days in ICU via wrist actigraphy. Both groups complete the self-report summative rating scales Hospital Anxiety and Depression Scale (2 subscales of 7 items, possible range of 0 = normal to 21 = severe), Impact Event Scale (15 items, possible range 0 = subclinical PTSD symptoms to 75 = severe PTSD symptoms), Perceived Stress Scale (10 items, possible range of 0-40 with norm table by sex, age, and race), and the NIH Toolbox Emotion Battery at four time points: within 36 hours of ICU admission, at least 24 hours post ICU discharge, at least 30 days post hospital discharge, and at least 90 days post hospital discharge.</p>

Abstract Text:

More than 5.7 million patients are admitted to intensive care units (ICU) each year in the United States.¹ Critical illness is a family crisis. There is strong evidence that family distress in response to critical illness does not disappear after ICU discharge.²⁻⁵ The Society of Critical Care Medicine⁶ has identified a cluster of complications that occur in family members of ICU patients as **Post Intensive Care Syndrome-Family (PICS-F)**. PICS in family members of adult ICU survivors include symptoms of ongoing anxiety, depression, and post-traumatic stress disorder (PTSD). Data suggest that 70% of family members have symptoms of ongoing anxiety, and 33% have symptoms of depression and PTSD, which can persist for ≥ 4 years.⁷⁻¹⁰ Moreover, symptoms of anxiety, depression, and PTSD are higher and persist longer in family members than in adult ICU survivors.¹¹ Because PICS-F

occurs with greater frequency in spouses and surrogate health decision-makers^{3,12-13} this study focused on participants whom are spouses of mechanically ventilated critically ill adults (typically sedated and unable to make their own health decisions).

To date, the focus of PICS-F research has been on description, detection, and prevalence of PICS-F. The approach in the proposed project focuses on prevention of PICS-F using an innovative rapid stress reduction intervention. The Rosenzweig Center for Rapid Recovery¹⁴ has recently developed an adaptation of their Accelerated Resolution Therapy (ART) for psychological trauma and depression, called **Sensation Awareness Focused Training (SĀF-T)**, as an approach to rapidly eliminate negative biological sensations of stress. SĀF-T is designed to elicit a calming response; interrupt negative thoughts, negative feelings, and negative behaviors; and ultimately serve as a self-management stress reduction method for individuals. Lateral left-right (saccadic) eye movements are used to elicit an orienting response that activates an investigatory reflex in which first, an alert response occurs and then, a reflexive pause produces decreased arousal in the face of no threat,¹⁵⁻¹⁷ which elicits a calming response that rapidly eliminates negative biological sensations of stress. A reflexive pause is our immediate response of exploratory behavior, with more flexible and efficient cognitive processes, to respond in a state of heightened awareness.¹⁸ This response process is consistent with behavior of interpretation and reaction to challenge in McEwen's Allostasis Stress Theory.¹⁹

Sleep deprivation has been self-reported as one of the top stressors of family members of ICU patients.²⁰⁻²² Sleep adequacy is defined as a combination of three factors: latency (the time it takes to fall asleep), efficiency ($[\text{time spent sleeping} \div \text{total time in bed}] \times 100$), and duration of sleep.²³ According to the American Academy of Sleep Medicine²⁴ for adequate sleep, persons should fall asleep within 15 minutes, stay asleep for at least 85% of the time they are in bed, and have a total sleep time of no less than 7 hours. Reasons reported by family members for sleep deprivation include anxiety, tension, and fear.²⁵ Sleep deprivation may play a role in the development of PICS-F.^{7,22} Although anxiety, tension, and fear are to be expected when a family member is critically ill, acknowledging these feelings and practicing relaxation techniques can reduce the impact that the feelings have on sleep.²⁶ Therefore, management of stress in spouses throughout the daytime may also improve nighttime sleep/rest and further reduce risk of PICS-F.

Evidence in the literature suggest higher stress levels experienced by spouses in the ICU environment, increases their risk for PICS.^{3-4,27-32} Reducing stress in the spouse during the ICU hospitalization may reduce their likelihood of PICS. We hypothesized that participants who receive the SĀF-T intervention will experience less PICS than control participants who do not receive the intervention.

The primary specific aim of the study was to test the feasibility and determine effect size of the SĀF-T intervention on PICS, specifically spouses of critically ill, mechanically ventilated patients. We carefully examined the ability of participants to adequately perform SĀF-T and adhere to the study protocol. A secondary aim of this project was to explore if the effect of SĀF-T and sleep/rest are related. Findings from this feasibility study were used to design a dissertation study with adequate power to test SĀF-T.

The study design was a prospective randomized controlled trial. The sample was drawn from spouses of mechanically ventilated adults (N = 10) during ICU stay. Spouses in the intervention group (n = 5) received SAF-T daily, over the first 3 days in ICU stay. Spouses in the control group (n = 5) did not receive SAF-T. Both groups completed the self-report summative rating scales Hospital Anxiety and Depression Scale (2 subscales of 7 items, possible range of 0 = normal to 21 = severe), Impact Event Scale (15 items, possible range 0 = subclinical PTSD symptoms to 75 = severe PTSD symptoms), Perceived Stress Scale (10 items, possible range of 0-40 with norm table by sex, age, and race), and the NIH Toolbox Emotion Battery at four time points: within 36 hours of ICU admission, at least 24 hours post ICU discharge, at least 30 days post hospital discharge, and at least 90 days post hospital discharge. Sleep/rest was measured on all participants over the first 3 days in ICU via wrist actigraphy.

Descriptive statistics will be calculated. Repeated outcome variables (symptoms of anxiety, depression, PTSD, stress, & emotions) will be modeled using generalized linear mixed effects models to account for

within-participant variations. Estimates of treatment effects (differences between intervention and control groups) will be summarized with odds ratios and corresponding 95% confidence intervals.

Enrollment is ongoing at the time of this abstract submission. Results will be made available for actual poster inclusion following completion of study enrollment and data analysis.

In conclusion, family interaction can have a significant impact on the experience of critical illness. The results of the study are expected to add new knowledge on the feasibility and practicality of providing interventions for spouses of critically ill patients, during the early ICU admission period, as well as feasibility of longitudinal follow-up measures post hospital discharge.

The clinical implication of PICS is concerning, as it is an emerging, growing problem with a larger aging population and increased rate of ICU survivorship. Family-centered interventions, started early in the ICU stay, may improve outcomes for spouses of critically ill, mechanically ventilated patients.