

Prevention of Posttraumatic Stress Disorder in Intensive Care Unit Patients

By: Leslie Crabtree-Buckner, [Donald D. Kautz](#)

This is a non-final version of an article published in final form in:

Crabtree-Buckner, L. and Kautz, D.D. (2012). Prevention of posttraumatic stress disorder in intensive care unit patients. *Dimensions of Critical Care Nursing (DCCN)*, 31(2), 69-72. doi: 10.1097/DCC.0b013e3182445f21

Made available courtesy of Lippincott, Williams & Wilkins, Inc.:

<http://dx.doi.org/10.1097/DCC.0b013e3182445f21>

*****© Lippincott, Williams & Wilkins, Inc. Reprinted with permission. No further reproduction is authorized without written permission from Lippincott, Williams & Wilkins, Inc. This version of the document is not the version of record. Figures and/or pictures may be missing from this format of the document. *****

Abstract:

The need for critical care and the experience of being treated in the intensive care unit may be a traumatic event with long-lasting psychological consequences for the patient and family. Research has identified patients who are at risk of developing posttraumatic stress disorder after an intensive care unit stay. This article reviews pharmacologic and nonpharmacologic strategies, including the use of diaries or journals, that have been shown to prevent posttraumatic stress disorder in intensive care unit patients and their families.

Keywords: Families of intensive care unit patients | Nursing interventions to prevent PTSD | Pharmacologic strategies to prevent PTSD | Posttraumatic stress disorder (PTSD)

Article:

Advances in modern medicine have made it possible for patients to survive horrific trauma and critical illnesses that they would not have survived years ago. The intensive care unit (ICU) is where many life-sustaining and supportive therapies are used. For the patient and family members, it may also be a place of intense fear, invasive treatments, and painful procedures. It has been found that as many as 20% to 25% of patients develop posttraumatic stress disorder (PTSD) after an ICU admission.¹ In addition, PTSD may be identified after a traumatic event outside the realm of normal human experience. This article explores the problem of PTSD in the ICU and describes evidence-based interventions to prevent PTSD and needs for future research.

Posttraumatic stress disorder is an anxiety disorder affecting a person's ability to cope with the lingering effects of a traumatic event. Posttraumatic stress disorder can significantly interfere with the ability to function, long after the physical effects of the trauma or illness are resolved. It

is often characterized by flashbacks of the traumatic event, difficulty sleeping and nightmares, avoidance of things that bring back memories of the event, depression, fear and anxiety, difficulty concentrating, irritability, self-destructive behavior and self-medicating, difficulty with intimacy, and feelings of hopelessness.² Posttraumatic stress disorder may be short-term, long-term, or chronic.

Intensive care unit patients face challenges in surviving a critical illness and enduring what may be a lengthy rehabilitation and also the real possibility of developing severe psychological problems. As ICU nurses, it is important that we understand the risk of PTSD and begin to look at ways to alleviate stressors or prevent the consequences of those stressors. Contemporary research identifies several factors that have been associated with increased risk of PTSD development in ICU patients. Knowledge of the risks allows ICU nurses to incorporate PTSD prevention strategies into the patient's care.

As ICU nurses, it is important that we understand the risk of PTSD and begin to look at ways to alleviate stressors or prevent the consequences of those stressors.

PATIENTS AT RISK FOR DEVELOPING POST-ICU PTSD

Patients with multiple comorbidities before their ICU admission have been found to be at risk for developing post-ICU PTSD.¹ Chronic illnesses can be very stressful, and they take an emotional and physical toll on patients and families. With increasing comorbidities, there is an increase in stress, and the increased stress is linked to greater anxiety. An ICU admission may exacerbate an already existing anxiety disorder and lead to PTSD.

Delirium is an additional strong predictor of post-ICU PTSD. Delirium has been shown to be a marker for development of PTSD and is linked with increased long-term mortality.^{3,4} Delirium may manifest in frightening hallucinations and false or misinterpreted memories. Classic hyperactive delirium presents with episodes of agitation, hallucinations, and combative or disorganized behavior. What may be more common, and diagnosed less in the ICU, is hypoactive delirium. Hypoactive delirium can cause the same level of confusion in patients as classic delirium but may be undiagnosed because preventing symptoms include fatigue, lethargy, or depression. Delirium may be caused by analgesics and anxiolytics and it has been particularly associated with lorazepam.^{3,5}

A patient who has a history of depression, anxiety, and drug and/or alcohol abuse is also at risk of developing PTSD.¹ Depression and anxiety can have emotional, psychological, psychosocial, and physical effects that diminish coping mechanisms. Adding the stress of a critical illness or injury can deplete what little coping stores these patients have left. These patients have been found to be more likely to experience delirium in the hospital, particularly in the ICU.

A history of drug and/or alcohol abuse can make sedation and pain control challenging which places these patients at risk for withdrawal.⁶ Pain intolerance may lead to the need for higher

doses of analgesics and anxiolytics; thus, these patients are at a greater risk of the development of delirium.⁷ These factors, in turn, increase the risk of developing PTSD.

Posttraumatic stress disorder has also occurred in patients who required prolonged deep sedation or were physically restrained with little or no sedation.⁸ Physical restraint, although at times necessary, can increase stress and anxiety. Feelings of fear and pain are often compounded by the feelings of helplessness and vulnerability that result from the trauma or critical illness, altered communication abilities, and lack of control. Although some risk factors are beyond the nurse's control, there are many prevention strategies that nurses can use in the ICU that may offer protection from psychological trauma and the development of PTSD in our patients who are most vulnerable.

PHARMACOLOGICAL INTERVENTIONS TO PREVENT AND TREAT PTSD

Several medications have shown promise in preventing PTSD. Stress dose corticosteroids have been shown to be beneficial during the inflammation cascade seen in septic shock. There is some evidence that low serum cortisol is predictive of the development of post-ICU PTSD⁹; therefore, stress dose hydrocortisone may offer protective effects.

Histamine antagonists (H2 blockers) and/or proton-pump inhibitors may be used to prevent stress ulcers in the ICU patient. Perhaps we should look at the prophylactic use of antidepressants in patients who exhibit multiple risk factors. Selective serotonin reuptake inhibitors, in particular, have been shown to be helpful in the treatment of PTSD² and could possibly offer some protective benefits for ICU patients at risk for PTSD. These should be considered as a valuable prevention option.

Selective serotonin reuptake inhibitors have been shown to be helpful in the treatment of PTSD and could possibly offer some protective benefits.

The use of a daily "sedation vacation" has been shown to have a preventive effect on the development of post-ICU PTSD.¹⁰ Although some patients may not be candidates for daily sedation interruption (eg, those with severe drug or alcohol withdrawal symptoms or status epilepticus), most can tolerate it. Kress and colleagues¹⁰ suggest interrupting sedation each day until a patient can follow 3 or 4 commands or becomes agitated. At this time, restarting sedation medication at one-half the original dose is appropriate. This process provides a baseline idea of the patient's current sedation needs and may help to decrease the amount of medication being given. This process may allow for better pain assessment and has been shown to decrease length of stay in the ICU.

The patient's medication reconciliation should be carefully assessed upon admission to the hospital and reassessed when the patient arrives in the ICU. Patients experiencing withdrawal from common prescription medications may present with symptoms of delirium.³ It is particularly important to continue antidepressants, anxiolytics, and antipsychotics whenever

possible. Nurses and physicians should work collaboratively for the best evaluation of ICU patients to be sure that appropriate medication regimens are prescribed and administered to prevent PTSD.

NONPHARMACOLOGICAL INTERVENTIONS

In addition to medical management, several other interventions may be helpful in the prevention of PTSD in ICU patients. All procedures should be explained to patients and their families, and the patient should be reoriented with each physical intervention, even if the patient appears to be heavily sedated. Of course, many ICU patients need quiet and rest and minimal stimulation. However, if it is necessary to turn the patient, change a dressing, suction the endotracheal tube, or provide care that will stir the patient, it is important to tell the patient what is about to be done and reorient the patient to the surroundings. It is also crucial to offer alternative communication methods. This is already done frequently in the ICU. The vulnerability that comes from not having a voice cannot be underestimated. In addition, the family should be involved in care as much as possible. Explain procedures to them and involve them when possible and allow them time to assist in “filling in the gaps” when the patient wakes up. The family may also provide valuable information about the patient.

DIARIES OFFER PROMISING RESULTS

In multiple studies, post-ICU PTSD was strongly linked to frightening delusional memories from an ICU stay.^{4,8,11} Jones and colleagues⁸ conducted a study on journal use in the ICU. It was hypothesized that if fragmented, frightening, delusional memories from an ICU stay contributed to the development of PTSD, then the use of journaling by the nurse and/or family might help the patient in remembering, thereby reducing the vulnerability and risks of PTSD. The study found decreased rates of PTSD and PTSD-related symptoms in patients who received diaries/journals chronicling their ICU stay. The diaries were described as providing a clear description of day-to-day interventions. The researchers believed that the diaries might have helped to dispel delusional memories and to clarify confusing or fragmented recollections, thereby assisting in the psychological healing process.

Another benefit of diaries/journals is that they may prevent PTSD in family members of the patients as well. Family members may be negatively affected by seeing their loved one in a vulnerable state, and some may experience PTSD as a result. An ICU diary/journal may open the door to communication between family members and the patient at a later date. In addition, a diary/journal may serve as a tool for family members to express their thoughts and concerns and may be very therapeutic during this emotionally stressful time. Just as diaries/journals have been shown to prevent PTSD, a single counseling session has been shown to increase both patient and family coping ability after an ICU stay.¹¹ Both may also prevent, reduce, or help treat PTSD.

NEED FOR FURTHER RESEARCH

All of the strategies outlined have been shown to have positive benefits in preventing PTSD in some ICU patients. However, research is needed to further test the use of medications, nursing interventions, and strategies to determine which patients and families will benefit from these strategies. For example, diaries/journals might be most effective for patients who present with delirium or families who witnessed the traumatic event that precipitated the patient's admission to the ICU. The goals of research should include the identification of which interventions are likely to be most effective for specific patients, and determination of interventions should be implemented. Every effort should be made to initiate research designs at the highest level, such as randomized controlled trials or case control studies, to have the greatest impact on practice changes and patient outcomes.

However, further research is needed to further test the use of medications, nursing interventions, and strategies to determine which patients and families will benefit from these strategies.

Additional research may also identify factors that appear to protect patients and families from PTSD. Risk factors have been identified, but more work can be done to determine whether there are patient or family characteristics that are especially protective, such as faith practices, specific coping styles, personality or behavior styles, positive attitudes about outcomes, or maintaining hope. If so, nursing interventions that promote faith practices, coping techniques, or behavioral responses may be helpful in preventing PTSD.¹²

CONCLUSION

The development of PTSD is a very real concern for ICU patients, affecting as many as 1 in 4 patients. Nurses can determine which patients are at greatest risk and intervene to prevent PTSD and improve long-term patient outcomes. Many simple pharmacological and nonpharmacological options are available. With careful monitoring, accessible interventions, and evidence-based practices, patients and their families may not have to experience the worst psychological aspects of a critical illness, thus facilitating the healing process. Finally, the strategies to prevent PTSD in patients and families may also be helpful to nurses, offering them a source of hope and renewal when providing care in the ICU patients.

Acknowledgment

The authors gratefully acknowledge the wonderful editorial assistance of Ms Elizabeth Tornquist with this manuscript.

References

1. Davydow DS, Zatzick DF, Rivara FP, et al.. Predictors of posttraumatic stress disorder and return to usual major activity in traumatically injured intensive care unit survivors. *Gen Hosp Psychiatry*. 2009; 31 (5): 428–435.

2. Dydren-Edwards R, Stoppler MC. Post-traumatic stress disorder. <http://www.medicinenet.com>. Accessed May 24, 2011.
3. Sessler CN, Varney K. Patient-focused sedation and analgesia in the ICU. *Chest*. 2008; 133: 552–565.
4. Ouimet S, Kavanaugh BP, Gotfried SB, Skrovik Y. Incidence, risk factors and consequences of ICU delirium. *Intensive Care Med*. 2007; 33: 66–73.
5. Peterson JF, Pun BT, Dittus RS, et al.. Delirium and its motoric subtypes: a study of 614 critically ill patients. *J Am Geriatr Soc*. 2006; 54: 479–484.
6. de Wit M, Wan SY, Gill S, et al.. Prevalence and impact of alcohol and other drug use disorders on sedation and mechanical ventilation: a retrospective study. *BMC Anesthesiol*. 2007; 7: 3. AcademicOneFile.
7. Davydow DS, Gifford JM, Desai SV, Needham DM, Bienvenu J. Posttraumatic stress disorder in general intensive care unit survivors: a systematic review. *Gen Hosp Psychiatry*. 2008; 30 (5): 421–434.
8. Jones C, Backman C, Capuzzo M, Flaatten H, Rylander C, Griffiths RD. Precipitants of post-traumatic stress disorder following intensive care: a hypothesis generating study of diversity in care. *Intensive Care Med*. 2007; 33: 978–985.
9. Schelling G, Bribgel J, Roozendaal B, Stoll C, Rothenhausler HB, Kapfhammer HP. The effect of stress does of hydrocortisone during septic shock on posttraumatic stress disorder in survivors. *Biol Psychiatry*. 2001; 50: 978–985.
10. Kress JP, Pohlman AS, O’Conner MF, Hall JB. Daily interruption of sedative infusions in critically ill patients undergoing mechanical ventilation. *N Engl J Med*. 2000; 342 (20): 1471–1477.
11. Jones C, Griffiths RD, Humphris G, Skirrow PM. Memory, delusions and the development of acute posttraumatic stress disorder-related symptoms after intensive care. *Crit Care Med*. 2001; 29 (3): 573–580.
12. Van Horn ER, Kautz DD. Promotion of family integrity in the acute care setting. *Dimens Crit Care Nurs*. 2007; 26 (3); 101–107.