

Spring 2019

Burnout Syndrome in Critical Care Nurses

Katie Burke
khh8@zips.uakron.edu

Kelly Claridge
kec79@zips.uakron.edu

Mallory Bidlen
meb157@zips.uakron.edu

Please take a moment to share how this work helps you [through this survey](#). Your feedback will be important as we plan further development of our repository.

Follow this and additional works at: https://ideaexchange.uakron.edu/honors_research_projects

Part of the [Critical Care Nursing Commons](#)

Recommended Citation

Burke, Katie; Claridge, Kelly; and Bidlen, Mallory, "Burnout Syndrome in Critical Care Nurses" (2019). *Williams Honors College, Honors Research Projects*. 885.

https://ideaexchange.uakron.edu/honors_research_projects/885

This Honors Research Project is brought to you for free and open access by The Dr. Gary B. and Pamela S. Williams Honors College at IdeaExchange@UAkron, the institutional repository of The University of Akron in Akron, Ohio, USA. It has been accepted for inclusion in Williams Honors College, Honors Research Projects by an authorized administrator of IdeaExchange@UAkron. For more information, please contact mjon@uakron.edu, uapress@uakron.edu.

Burnout Syndrome in Critical Care Nurses

Katie Burke, Kelly Claridge, Mallory Bidlen

The University of Akron

Author Note

Katie Burke, Kelly Claridge & Mallory Bidlen, College of Nursing, The University of Akron.

This paper is in fulfillment for the Honors College. Due April 2019.

Professor Diane Brown PhD, MSN, RN, CCRN

Abstract

Burnout syndrome among nurses, especially within the critical care setting, has been a persistent and increasingly prevalent problem in the healthcare field. This systematic review aims to explore the common causes of burnout among nurses associated with working in a critical care setting. Twenty-five peer-reviewed articles, published between the years of 2000 and 2018, were selected for analysis and synthesis using the databases PubMed and CINAHL. The group included research studies conducted in the United States, Spain, France, China and Iran with sample sizes ranging from 42 to 2,392 intensive care unit (ICU) nurses. The articles included in this review were from systematic reviews and individual experimental studies that used Maslach Burnout Inventory, General Health Questionnaire, Integrative Literature Reviews, Depression Screenings, Cross-Sectional studies, and the Connor-David Resilience Scale. Findings demonstrate a high incidence of burnout among critical care nurses, with common causes related to environmental, situational and personal factors.

Introduction

Burnout Syndrome (BOS) is a collection of signs and symptoms linked to work-related physical and mental stressors. These include emotional exhaustion, depersonalization and decrement of personal accomplishment. BOS is a negative response to constant stress experienced within one's profession, in which the person is exposed to a continuous misalignment within one's needs and with the job that is performed (Arrogante & Aparicio-Zaldivar, 2017). BOS in the healthcare setting is often described as the feeling of being under pressure, displaying a negative and callous response to patients, or having a low sense of competency in doing personal tasks (Delpasand, Nasiripoor, Raiisi & Shahabi, 2011).

BOS has been identified in many healthcare specialties, with one of the most prominent professions being critical care nursing staff of hospital ICUs (Embriaco, Papazian, Kentish-Barnes, Pochard & Azoulay, 2007). It has been estimated that the prevalence of BOS among critical care nurses and physicians spans from 25% to 80%, and ranges from mild to severe (Arrogante & Aparicio-Zaldivar, 2017). According to Poncet, Toullic and Papazian (2007), BOS has been described as an inability to cope with emotional stress at work or an excessive use of energy and resources leading to feelings of failure and exhaustion. The presence of BOS in critical care nursing staff can be detrimental to the proper functioning of the hospital, and to the health of patients. BOS can cause irritability and frustration among nursing staff, making it difficult to collaborate with each other or participate in interdisciplinary communication. This accumulation of stress may result in a negligent and lethargic approach to patient care, putting patient health and satisfaction in jeopardy (Delpasand, et al., 2011).

Extensive research has been conducted to determine specific factors that could contribute to the incidence of BOS among critical care nursing staff (Embriaco, et al., 2007; Gómez-Urquiza et al., 2017; Iglesias, Vallejo & Fuentes, 2010; Poncet, et al., 2007; Rodrigues, Santos & Sousa, 2017). This systematic review will analyze and synthesize the research regarding factors—such as environmental, situational, and personal—that lead to BOS among critical care nurses. The objective of this review is to explore the effect of BOS among critical care nurses and possible contributing elements.

Methods

To narrow down the scope of this review, PubMed and CINAHL databases were used because of their focus on science and medical research that is updated regularly. The keywords used to retrieve publications included: “burnout,” “critical care” and “nursing.” Inclusion criteria

revolved around research studies that focused on BOS for critical care nursing specifically. 179 articles resulted from our initial search. All countries and all participant ages were included in the review. Exclusion factors included studies with other health professionals outside of nursing. To further decrease bias, each article was cross-checked independently by each member of this review. If a disagreement occurred, we went back to the article and discussed in order to come to a consensus. Twenty-five research articles were selected for final inclusion, published between the years 2000 and 2018.

Results

Results from review of the 25 articles demonstrated some common themes related to causes of critical care BOS: environmental, situational, and personal. The majority of the articles were based in the United States; however, five articles were from other countries including but not limited to France, Spain, China and Iran. An additional article focused on 11 European countries, including the following: Belgium, Denmark, Finland, Germany, Italy, Luxemburg, The Netherlands, Poland, Portugal, Catalonia, and the United Kingdom (Bakker, Le Blanc & Schaufeli, 2005).

Various research studies regarding BOS utilized the Maslach Burnout Inventory (MBI) as a means to collect data (Arrogante & Aparicio-Zaldivar, 2017; Delpasand, et al., 2011; Embriaco, et al., 2007; Gómez-Urquiza et al., 2017; Guirardello, 2017; Iglesias, et al., 2010; Meltzer & Huckabay, 2004; Padilla Fortunatti & Palmeiro-Silva, 2017; Poncet, et al., 2007; Ríos Risquez, Peñalver Hernández & Godoy Fernández, 2008; Wolfe & Unti, 2017). Since its publication in 1981, the MBI has been considered the “gold-standard” of measuring burnout among subjects within chosen studies. Its reliability and validity have been well-established within the clinical setting, consistently displaying an accurate correlation between BOS and

suspected variables contributing to its occurrence or prevention (Riley, Mohr & Waddimba, 2018). This tool assesses the participants based on their scoring in three specific areas: (1) emotional exhaustion, (2) depersonalization, and (3) personal accomplishment, to determine if manifestations of BOS are present (Riley, Mohr & Waddimba, 2018). Across the studies that used this tool within the critical care setting, it was found that nurses and other health professionals working within this high-stress environment suffer a greater degree of burnout compared to those exposed to less demanding situations. Common factors thought to contribute to BOS were found to fall under three categories: (1) environmental, (2) personal, and (3) situational. A dysfunction or inefficiency within one or more of these categories was shown to have a positive correlation with BOS prevalence (Gómez-Urquiza et al., 2017; Poncet, et al., 2007; Embriaco, et al., 2007; Rodrigues, et al., 2017). The environmental, personal and situational factors most frequently identified are discussed in detail within the following sections.

Environmental Factors

Research indicates that a variety of environmental factors contribute to the incidence of BOS for critical care nurses. Of the 25 articles reviewed, common environmental factors that were connected to the high incidence of BOS included: (1) Problems with sufficient staffing, (2) Nurse-to-patient ratios, (3) Low levels of autonomy among nurses and (4) Overstimulation with an emphasis on alarm fatigue (Elshaer, Moustafa, Aiad & Ramadan, 2017; Gómez-Urquiza et al., 2017; Guirardello, 2017; Malaquin et al., 2017; Padilla et al., 2017; Weber & Jaekel-Reinhard, 2000; Wolfe & Unti, 2017). Problems with insufficient staffing among nurses relates to the number of available staff and high turnover rates. Because of this insufficient staffing, nurses are forced to take on more tasks than they are mentally or physically capable of, leading to increased

stress from excessive responsibilities and work overload (Elshaer, et al., 2017; Malaquin et al., 2017)

Problems with staffing often lead to unsafe nurse-to-patient ratios. A deficiency in nursing staff can be attributed to several factors, including tendencies for absenteeism and job abandonment (Gómez-Urquiza et al., 2017). It was noted that as the number of nurses decreased, the number of patients assigned to each nurse increased. This expansion of responsibilities and growth in workload thus maximizes the stress put on the nurses by having more high acuity patients in their care (Padilla et al., 2017; Weber & Jaekel-Reinhard, 2000).

Finally, low levels of perceived autonomy among nurses was mentioned within various studies as being a factor leading to BOS (Guirardello, 2017; Wolfe & Unti, 2017). Autonomy within the healthcare setting focuses on a nurse's feelings of personal accomplishment, quality-of-care reports provided by patients, and the nurse's attitude towards safety. These various factors are expressed and examined by how the nurse exhibits teamwork, the job satisfaction of the nurse and safe practices used by the nurse in the clinical setting (Guirardello, 2017). Nurses reported that not having the capacity to make the same decisions as doctors also contributed to levels of stress, as they do not possess the same control regarding the care of patients (Wolfe & Unti, 2017).

Alarm fatigue. Today's critical care setting relies heavily on a variety of devices and monitors that are capable of assessing and recording a patient's condition in real time. These include telemetry monitors, pulse oximeters, and ventilators. If an abnormal reading or deviation from baseline is detected, an alarm will sound to notify clinicians to initiate interventions if necessary. However, alarms within ICUs can occur at staggering rates; as many as 171 alarms per monitored bed per day (Casey, Avalos & Dowling, 2018). Of these alarms, an estimated 85-

99% of these alarm signals do not warrant clinical intervention (Purbaugh, 2014). These “nuisance” alarms have the potential of creating an environment where nurses and other clinicians begin to silence or ignore these signals, a phenomenon known as ‘alarm fatigue’.

The development of alarm fatigue can occur from two types of alarms: false alarms and non-actionable alarms. False alarms are often caused by patient movement, poor sensor placement, or out of date programming of the monitoring device (Casey, et al., 2018). Non-actionable alarms are those that do not require clinical intervention, such as cases of tachycardia and low oxygen saturation which are often self-correcting through the body’s natural compensation methods (Purbaugh, 2014). These alarms aimlessly distract nurses and contribute to an environment of constant, ineffective stimulation which ultimately leads to the habituation towards any sounding alarm within the critical care area. This desensitization to ICU alarms can put patients at a high risk for harm or even death if no response is taken by healthcare staff. If an alarm is deemed inappropriate or annoying, it is often silenced, delayed, or turned off completely. This can cause alarms to sound for an extended period before being investigated or even noticed, resulting in delayed response time to patients who may require critical intervention and a higher risk for further injury or death (Purbaugh, 2014).

Fortunately, there are actions that can be taken within the critical care setting that have been shown to decrease alarm fatigue and improve nurse response. Quality improvement initiatives must be put into place to educate nurses and clinicians on the prevalence of alarm fatigue and its effect on patient safety. This includes the effect of immediate alarm recognition and response time on the patient’s health using appropriate intervention (“Sounding the call against alarm fatigue”, 2018). In addition, increasing the default alarm threshold on cardiac monitors to go off at a more urgent level would help cut down on the frequency of alarms that

sound, and those that do would be easily recognized for immediate response (“Sounding the call against alarm fatigue”, 2018). False alarms may also be reduced by ensuring the appropriate connection and conductivity of ECG electrodes and the routine inspection of medical devices (Purbaugh, 2014). Although combating alarm fatigue through these methods would improve the health of patients, it would also improve the well-being of critical care nurses by decreasing the contributions towards BOS.

Personal Factors

Many personal factors were found to contribute to the high incidence of BOS with critical care nurses. Personal factors revealed in this review were categorized as: (1) emotional maturity, (2) the level of social support provided to the nurse, and (3) the nurse’s capability to respond to distressing situations using resilience. (Padilla et al., 2017; Rodrigues, et al., 2017; Wolfe & Unti, 2017). The level of emotional maturity often affects how well the nurse is able to deal with the stress of being a critical care nurse and how well they are able to process the increasing demands of the job (Delpasand, et al., 2011). Having a lower emotional maturity and inability to adapt to the continuous challenges the ICU involves may put the nurse at a higher risk of developing BOS.

The adequacy of support systems made available to nurses also greatly impacted the occurrence of BOS. A greater quantity of support systems provided, as well as, high-quality level of care and attentiveness, have been found to decrease the incidence of BOS (Arrogante & Aparicio-Zaldivar, 2017; Meltzer & Huckabay, 2004; Mohammadi, Peyrovi, & Mahmoodi, 2017; Rodrigues, et al., 2017; Yang, Liu, Zhang & Duan, 2017). The level of social support includes marriage status of the nurse; marriage can either contribute to more stress depending

upon the quality of the relationship with the spouse or decrease the level of stress on the nurse given the value of the spouse as a support system (Iglesias, et al., 2010).

The occupation of nursing, specifically critical care nursing, is very stressful. Common stressors in the critical care setting include (1) time constraints, (2) pressure to do work quickly, (3) ever increasing patient loads, (4) controversial ethical issues, (5) sick and dying patients, and (6) decreased emotional and social support services (Arrogante & Aparicio-Zaldivar, 2017; Mohammadi, et al., 2017; Padilla et al., 2017; Wolfe & Unti, 2017). Typically, resilience is the ability for an individual to react to a certain level of stress. Resilience is a quality that allows the nurse to positively adjust and recover from the numerous stressors of one's job. The concept of resilience is derived from the two core concepts of hardship and positive adaptation (Arrogante & Aparicio-Zaldivar, 2017). The Maslach's Burnout Inventory bases BOS off the three factors of emotional exhaustion, depersonalization, and decreasing personal accomplishment in the workplace. Resilience is necessary to mediate and combat these three factors in order to maintain nurse mental health integrity (Arrogante & Aparicio-Zaldivar, 2017). The concept of resilience, and adequately bouncing back from hardship, is a necessary response in a variety of calamities ranging from daily life to occupational stressors (Arrogante & Aparicio-Zaldivar, 2017).

Situational Factors

Along with environmental and personal factors, a variety of situational circumstances demonstrate a correlation with the experience of BOS among ICU nursing staff (Elshaer, et al., 2017; Embriaco, et al., 2007; Gómez-Urquiza et al., 2017). One situational factor is the inadequate organization of the critical care setting (Embriaco, et al., 2007). This pertains to the overall functionality of ICU staff members. Critical care is a fast-paced, demanding environment

that requires an efficient healthcare team to act on complex cases. If the team is lacking effective communication, or awareness of specific roles, this can lead to frustration among individuals and the lack of desire to work together. This feeling of isolation can cause nurses to take on additional roles themselves, leading to exhaustion and eventually BOS (Elshaer, et al., 2017).

An additional situational factor that has been cited in the research is the tendency for BOS to spread among staff. It has been shown that BOS is ‘contagious’, allowing it to cross over from one nurse to another either consciously or unconsciously (Bakker, et al., 2005; Gómez-Urquiza et al., 2017). Research about BOS has shown that the syndrome may manifest itself both socially and behaviorally, making it noticeable to others. Unconscious emotional contagion causes an individual to automatically mimic and coordinate facial expressions, vocalizations, postures, and movements with those of another person. Consequently, those involved will experience the same emotional manifestations (Bakker, et al., 2005). In contrast, conscious emotional contagion can occur by ‘tuning in’ to the emotions of others. This empathetic approach allows an individual to experience the same feelings, like being happy or sad, by putting themselves in the position of another. Behaviors associated with BOS may cross over via unconscious imitation or empathy after a nurse observes another displaying those behaviors (Gómez-Urquiza et al., 2017).

Among critical care nurses, the frequency of morally distressing situations that are perceived as non-beneficial or futile to patients has a significant relationship to emotional exhaustion and is a major contributor to BOS (Elshaer, et al., 2017; Meltzer & Huckabay, 2004). An act is considered futile if its intentions are unlikely to achieve success (Meltzer & Huckabay, 2004). An example of futile care observed within the critical care setting from the nurse’s standpoint is placing patients on long-term life support or performing CPR on a patient with

multiple organ dysfunction. Such circumstances often arise when family wishes are in ethical contradiction with the nurse and health team recommendations. Ethical dilemmas are among the most difficult issues encountered by critical care nurses, focused mostly on the concern that some patients may receive care that may prolong suffering without a positive impact on outcome (Meltzer & Huckabay, 2004). These dilemmas place a significant amount of stress on nurses who question the management of their patient's health and the decisions made by their caregivers. If enough of these morally distressing situations are witnessed, critical care nurses are more susceptible to developing BOS (Elshaer, et al., 2017). Now that various contributions to the development of BOS have been identified, the consequences of its occurrence will be discussed.

Discussion

Consequences of BOS

BOS has been shown to have a positive correlation with the onset of various mental and physical ailments. BOS can lead to mental disorders like substance abuse, anxiety, depression, posttraumatic stress disorder and even suicidal thoughts. It is also thought to cause serious stress-induced consequences like headaches, high blood pressure, heart and lung disease, musculoskeletal disorders, gastritis, stomach ulcers, and sleep deprivation (Arrogante & Aparicio-Zaldivar, 2017; Mealer, Jones, & Meek, 2017). In nurses, this syndrome is associated with reduced quality of care, decreased satisfaction for the patients, increased quantity of medical mistakes, higher rates of healthcare-associated infections for their patients such as Central Line Acquired Bloodstream Infections and Catheter Acquired Urinary Tract Infections, and lastly, higher patient 30-day mortality rates (Arrogante & Aparicio-Zaldivar, 2017; Mohammadi, et al., 2017; Wolfe & Unti, 2017).

Absence of BOS

It has been demonstrated that in environments where nurses practice autonomously, they have greater control over the situation and environment. These environments can include hospitals with excellence awards such as Magnet Status and Beacon Awards from the AACN; hospitals that have better nurse orientation programs; adequate staffing; current equipment and technology; and supportive administrative and nursing staff. These environments result in positive and beneficial relationships among coworkers and staff (Guirardello, 2017; Meltzer & Huckabay, 2004; Wolfe & Unti, 2017). Nurses working in such environments, therefore, display lower rates of BOS. These nurses also exhibit substantial occupational satisfaction and have less turnover. Nursing staff with lower rates of BOS also provide better results with patient care, patient outcomes, satisfaction, and well-being (Guirardello, 2017; Meltzer & Huckabay, 2004; Wolfe & Unti, 2017).

Inconsistent Findings

The Maslach Burnout Inventory (MBI) assessment tool is a level four tool for ranking evidence in research that was used to study nurse BOS in several studies involving ICUs from both small corporation and large corporation hospitals. The sample sizes ranged from 42 to 2,392. Inconsistencies exist as a result of using literature from other countries, as the standard of care between unrelated countries can differ. Some of the countries, including the United States and European nations, are more technologically developed and have more advancements than others. In contrast, some countries in Asia (China) use alternative therapies such as massage, acupuncture, and herbal remedies, and nurses do not have nearly as much autonomy. These technological differences can result in patient care techniques and communication methods that are unlike those of another nation, leading to varying outcomes (Bakker, et al., 2005; Gomez-

Urquiza et al., 2017; Solano Ruiz, Hernandez Vidal, Vizcaya Moreno, & Reig Ferrer, 2002; Yang, et al., 2017).

Multiple studies included nurse education level in the criteria considered for BOS, but conflicting results were found. Some of these studies found that having a graduate degree, due to the increase in leadership and responsibility, can influence and increase the development of post-traumatic stress disorder while working as a critical care nurse (Mealer, et al., 2017; Meltzer & Huckabay, 2004). This PTSD most likely stemmed from the development of BOS throughout one's career in being exposed to stressful experiences over a long period of time. Results have shown that nurses with bachelor's or master's degrees scored significantly higher on the Moral Distress Scale (MDS) compared to nurses with associate degrees potentially due to lesser education (Mealer, et al., 2017; Meltzer & Huckabay, 2004). Moral distress arises when the nurse feels ethically conflicted and the MDS measures the intensity and regularity such distress, with a higher score indicating an increase in intensity (Browning, 2013). The MDS uses three components to determine how morally distressed the nurse is. The first component is individual responsibility, the second is providing care that may not be deemed necessary, and the last component is being deceitful with patients and not addressing all concerns honestly (Browning, 2013). Other studies found that education has no effect on the nurse's rate of BOS or distress in the workplace (Guirardello, 2017).

Limitations

There are several limitations to this review. First, our review did not just contain the United States, but foreign countries as well. The causes of BOS can be the same regardless of the country, but factors that contribute to these causes may differ between countries. Different countries have different expectations, different work methods, and different patient loads which

can determine how each nurse perceives his or her job satisfaction, stress levels and finally different personal perceptions of stress due to differences in culture. Another limitation that was not controlled for in this review was the effect of legislation in some geographical areas that limit nurse-patient load assignment. This could be a confounding factor of BOS prevention, as those nurses may be less likely to be burnt out due to lower patient-to-nurse ratios set forth by policies regarding patient assignment restrictions. There is also a limitation related to external validity in studies where only one unit of a hospital was used; this may not give a precise picture of BOS within other ICUs of that hospital. Another limitation was the time in which the articles were published. In order to effectively conduct a literature review, articles greater than five years old were used as new information regarding this topic is scarcely available. Lastly, a selection bias may be present in samples because nurses experiencing extreme BOS may have a decrease in motivation to engage in a study.

Clinical Implications

As the occurrence of BOS has continued to increase in critical care staff, more focus has been aimed towards implementing preventative strategies and interventions to eradicate its progression (Embriaco, et al., 2007). A major consideration for prevention is the ICU provision of supportive activities for social, psychological, and emotional health. This includes incorporating leisure activities and support systems available to help staff deal with work stressors, ultimately leading to increased job satisfaction and improved well-being. Hospitals are recommended by various studies to hold required training courses focused on reducing nurses' occupational burnout (Bakker, et al., 2005; Delpasand, et al., 2011; Papazian, et al., 2007). Such courses could emphasize effective leadership style, team atmosphere, and interpersonal dynamics. Focus should also be aimed towards nurses at an increased risk for developing BOS,

such as those who smoke or are of single status (Delpasand, et al., 2011). These factors can cause lower morale and decreased productivity, ultimately culminating in BOS and compromising patient care. Another factor, older age, also increases the risk for emotional exhaustion and depersonalization (Delpasand, et al., 2011). Overall, findings have shown that positive environments result in lower levels of BOS, a better perceived quality of care, and attitudes favorable to patient safety. To create such positive environments, hospital organizations must recognize risk factors of BOS and implement the interventions to prevent its occurrence in healthcare workers.

The literature shows that there are high rates of BOS ranging from 25%-80% among nurses that practice in critical care settings and that it can often be attributed to personal, environmental and situational factors. There were limitations presented within the articles such as: varying responsibilities of nursing staff, different countries being utilized in various studies, and the different responsibilities that are covered by other healthcare professionals. Due to these varying factors the results may be skewed to downplay the presence or present an increased prevalence of nursing BOS. Suggested implications of the current practice include preventative care for nursing BOS, care for those who are impacted by critical care related BOS, and the acknowledgement of the high prevalence of BOS and its implications on patient safety and care.

Suggestions for Future Research

Ongoing research on the topic of critical care nurse BOS is essential to promote excellent, safe patient care and to maintain the health of nurses. In the future, it would be beneficial to further explore whether BOS is a conscious process, unconscious process or a combination of both. By defining this, it could help determine the route of the burnout 'contagion' in which intervention strategies can be used to intercept the spread and eventually

stop the problem from the root of its occurrence. Also, the question has been raised whether repeated exposure to coworkers suffering from work-related BOS is necessary for the burnout contagion to happen. Results of our analyses suggest that BOS develops primarily from a social context between colleagues, although other factors such as emotional stability, support systems outside the workplace, etc. make it difficult to determine which has the greatest influence. Since less research has focused on determinants of BOS outside of the work environment, future studies should include more in-depth investigation of nurses with BOS and what their non-professional lifestyles entail. Lastly, in the future it would be valuable to research how to provide psychological help and support to critical care workers. This additional research would be rewarding because it could help reduce BOS in healthcare workers already suffering, and it could also prevent BOS in those who are not yet a victim to it. Included in this research should be the questions of “What kind of recreational activities improve one’s well-being?” and “How do we increase social support for critical care healthcare workers?” This could benefit nurses already working in critical care by keeping them in the field, it would benefit institutions by decreasing turnover rates and finally patients would benefit from a more experienced and satisfied nursing staff.

Conclusion

Due to the increased occurrence of BOS among nurses in the critical care setting it is important that healthcare systems work proactively to treat and prevent its occurrence among their nursing staff in critical care settings. In this systematic review, twenty-five peer review articles were reviewed to better understand the causes of BOS within critical care nursing staff. BOS is known as a variety of symptoms presented in an individual that occur due to work-related physical and psychological stressors. BOS can be attributed to environmental factors, personal

factors, and situational factors. Environmental factors such as staffing problems, nurse to patient ratios, and the level of autonomy among nurses need to be addressed by facility administration. Personal factors such as emotional maturity, social support provided to the nurse and resilience can be fostered by purposeful interventions made available to nurses. Finally, situational factors can be organizational problems, the rapid spread of BOS among staff members and ethical dilemmas, which need to be identified and have processes put into place to diminish the prevalence of BOS. We can treat this ever-growing problem by understanding what BOS is, and understanding how to provide support to those nurses working in a critical care setting.

References

- Arrogante, O., & Aparicio-Zaldivar, E. (2017). Burnout and health among critical care professionals: The mediational role of resilience. *Intensive & Critical Care Nursing*, *42*, 110–115.
- Bakker, A. B., Le Blanc, P. M., & Schaufeli, W. B. (2005). Burnout contagion among intensive care nurses. *Journal of Advanced Nursing*, *51*(3), 276-287.
- Browning, A. M. (2013). CNE Article: Moral Distress and Psychological Empowerment in Critical Care Nurses Caring for Adults at end of Life. *American Journal of Critical Care*, *22*(2), 143–151.
- Casey, S., Avalos, G., & Dowling, M. (2018). Critical care nurses' knowledge of alarm fatigue and practices towards alarms: A multicentre study. *Intensive and Critical Care Nursing*, *48*, 36-41.
- Delpasand, M., Nasiripoor, A., Raiisi, P., & Shahabi, M. (2011). The relationship between emotional intelligence and occupational burnout among nurses in critical care units. *Iranian Journal of Critical Care Nursing*, *4*(2), 79-86.
- Elshaer, N. M., Moustafa, M. A., Aiad, M. W., & Ramadan, M. E. (2017). Job stress and burnout syndrome among critical care healthcare workers. *Alexandria Journal of Medicine*, *54*(3), 273-277.

- Embriaco, N., Papazian, L., Kentish-Barnes, N., Pochard, F., & Azoulay, E. (2007). Burnout syndrome among critical care healthcare workers. *Current Opinion in Critical Care*, 13(5), 482-488.
- Gómez-Urquiza, J. L., Fuente-Solana, E. I. D. la, Albendín-García, L., Vargas-Pecino, C., Ortega-Campos, E. M., & Fuente, G. A. C.-D. la. (2017). Prevalence of burnout syndrome in emergency nurses: A meta-analysis. *Critical Care Nurse*, 37(5), 1-9.
- Guirardello, E. de B. (2017). Impact of critical care environment on burnout, perceived quality of care and safety attitude of the nursing team. *Revista Latino-Americana De Enfermagem*, 25 (0).
- Iglesias, M., Vallejo, R., & Fuentes, P. (2010). The relationship between experimental avoidance and burnout syndrome in critical care nurses: A cross-sectional questionnaire survey. *International Journal of Nursing Studies*, 47(1), 30-37.
- Malaquin, S., Mahjoub, Y., Musi, A., Zogheib, E., Salomon, A., Guilbart, M., & Dupont, H. (2017). Burnout syndrome in critical care team members: A monocentric cross sectional survey. *Anesthesia Critical Care & Pain Medicine*, 36, 223-228.
- Mealer, M., Jones, J., & Meek, P. (2017). Factors affecting resilience and development of posttraumatic stress disorder in critical care nurses. *American Journal of Critical Care*, 26(3), 184–192.
- Meltzer, L. S., & Huckabay, L. M. (2004). Critical care nurses' perceptions of futile care and its effect on burnout. *American Journal of Critical Care*, 13(3), 202-208.

- Mohammadi, M., Peyrovi, H., & Mahmoodi, M. (2017). The relationship between professional quality of life and caring ability in critical care nurses. *Dimensions of Critical Care Nursing, 36*(5), 273–277.
- Padilla Fortunatti, C., & Palmeiro-Silva, Y. K. (2017). Effort-reward imbalance and burnout among ICU nursing staff: A cross-sectional study. *Nursing Research, 66*(5), 410–416.
- Poncet, M. C., Toullic, P., & Papazian, L. (2007). Burnout syndrome in critical care nursing staff. *American Journal of Respiratory and Critical Care Medicine, 175*, 698-704.
- Purbaugh, T. (2014). Alarm fatigue: A roadmap for mitigating the cacophony of beeps. *Dimensions of Critical Care Nursing, 33*(1), 4-7.
- Riley, M., Mohr, D., & Waddimba, A. (2018). The reliability and validity of three-item screening measures for burnout: Evidence from group-employed health care practitioners in upstate New York. *Stress & Health: Journal of the International Society for the Investigation of Stress, 34*(1), 187-193.
- Ríos Ríquez, M. I., Peñalver Hernández, F., & Godoy Fernández, C. (2008). Burnout and perceived health in critical care nursing professionals. *Enfermería Intensiva, 19*(4), 169-178.
- Rodrigues, C. C. F. M., Santos, V. E. P., & Sousa, P. (2017). Patient safety and nursing: Interface with stress and burnout syndrome. *Revista Brasileira De Enfermagem, 70*(5), 1083-1088.

Solano Ruiz, M., Hernández Vidal, P., Vizcaya Moreno, M., & Reig Ferrer, A. (2002).

Síndrome de Burnout en profesionales de enfermería de cuidados críticos. *Enfermería Intensiva*, 139-16.

Sounding the call against alarm fatigue. (2018). *AACN Bold Voices*, 10(4), 8.

Weber, A., & Jaekel-Reinhard, A. (2000). Burnout syndrome: A disease of modern societies? *Occupational Medicine*, 50(7), 512–517.

Wolfe, K. K., & Unti, S. M. (2017). Critical care rotation impact on pediatric resident mental health and burnout. *BMC Medical Education*, 17(1), 181.

Yang, S., Liu, D., Liu, H., Zhang, J., & Duan, Z. (2017). Relationship of work-family conflict, self-reported social support and job satisfaction to burnout syndrome among medical workers in southwest China: A cross-sectional study. *Plos ONE*, 12(2), 1-12.