



NURSING ARCHIVES

A S S O C I A T E S

nursingarchivesassociates.org

Nightingale | 2020

In celebration of the bicentenary of Florence Nightingale's birth, the Nursing Archives Associates of the Boston University Libraries' Howard Gotlieb Archival Research Center held an essay contest, open to nursing students enrolled at all levels of study—undergraduate, master's and doctoral - and focused on Florence Nightingale's influence on the evolution of nursing, both historical and contemporary. Although all Nightingale 2020 events were postponed due to the COVID-19 pandemic, we are proud to announce the winner of the Muriel A. Poulin Nursing Student Essay Contest.

Winning Essay

**Bringing Florence Nightingale to the Bedside
of the Critically Ill Patient**

Written By

Laura Beth Kalvas, MS, RN, PCCN

Graduate Fellow

The Ohio State University College of Nursing

In her *Notes on Nursing* (1969), Florence Nightingale argued that nature alone can cure the sick. Cautioning against an over-reliance on medical care, which could do nothing more than remove obstructions to the natural healing process, Nightingale encouraged nurses to put patients in the best possible conditions for nature to act upon them. Her environmental theory highlighted the importance of cleanliness, ventilation, limited noise, uninterrupted sleep, proper nutrition, and sunlight in promoting recovery of the sick (Hegge, 2013; Nightingale, 1969). Within this perspective, the role of the nurse was to provide an environment conducive to healing, support the patient in the healing process, and carefully observe the patient for signs of improvement or decline.

Certainly when Nightingale cautioned against an over-reliance on medical care, she could little have imagined the treatments and technology available today, especially in the care of the critically ill. Yet her careful distinction between the practice of medicine and the practice of nursing remains relevant. In the complex critical care environment, where medical treatments are frequently lifesaving, what unique contribution does the nurse bring to the care of the critically ill patient? I would argue that the role of the critical care nurse remains the same; to put the patient in the best possible condition for nature to act upon them (Nightingale, 1969). Yet “so deep-rooted and universal is the conviction that to give medicine is to be doing something, or rather everything; to give air, warmth, cleanliness . . . is to do nothing” (p. 9), that this important aspect of nursing practice is easily undervalued.

The phenomenon of pediatric delirium offers an interesting case study in the importance of high-quality nursing care in the modern intensive care unit. Delirium is a frequent, significant complication of critical illness consisting of acute changes in mental status that develop over a short period of time and fluctuate throughout the day

(American Psychiatric Association, 2013). Up to 65.5% of children in the pediatric intensive care unit (PICU) experience delirium (Meyburg et al., 2017). Affected children exhibit signs of impaired attention, disorientation, agitation, hallucinations, and sleep/wake cycle disturbance (Holly et al., 2018). Children describe their delusional memories of the PICU as highly disturbing, including visual hallucinations of injured parents, monsters trying to eat them, and insects crawling on the walls (Colville et al., 2008). Furthermore, pediatric delirium is associated with poor clinical outcomes, including increased length of stay (Smith et al., 2017), cost of care (Traube et al., 2016), and mortality (Traube et al., 2017).

Although delirium has only recently caught the attention of the pediatric critical care community (Kudchadkar, Yaster, et al., 2014), it is not a new phenomenon. Through her observations, Nightingale (1969) noted that lack of sunlight, excessive noise, and fragmented sleep were associated with delirium. Today's pediatric critical care environment is characterized by excessive light and sound exposure and frequent nighttime caregiving (Al-Samsam & Cullen, 2005; Cureton-Lane & Fontaine, 1997). This environment likely contributes to the altered sleep patterns experienced by critically ill children (Kudchadkar, Aljohani, et al., 2014). Providing support for Nightingale's (1969) early observations, we now know that these environmental exposures and resulting sleep disruption can impair cognitive function (e.g., attention, working memory, emotional regulation; Durmer & Dinges, 2005; Kahn et al., 2013) and disrupt the circadian rhythm of melatonin release, which has neuroprotective properties (Claustrat et al., 2005). Environmentally-induced circadian rhythm dysregulation is one hypothesized pathway to the cognitive changes observed in delirium (Maldonado, 2017), and sleep/wake cycle disturbances are often observed in children with delirium (Holly et

al., 2018).

Nurses are uniquely positioned at the bedside to prevent delirium through environmental modification and regulation of the circadian rhythm; interventions which place the patient in the best possible conditions for recovery (Nightingale, 1969). Sleep promotion interventions in the adult ICU are associated with a decreased incidence and duration of delirium (Kamdar et al., 2013; Patel et al., 2014). However, few researchers have considered the role of sleep in the development of pediatric delirium (Calandriello et al., 2018), and few pediatric critical care clinicians implement sleep-promoting interventions to prevent or manage delirium (Kudchadkar, Yaster, et al., 2014; Staveski et al., 2018). Nurse scientists are needed in the medically-dominated field of pediatric delirium research to highlight the important role of the critical care nurse in preventing and managing delirium (Balas et al., 2012).

As a doctoral nursing student, my interest in pediatric delirium is driven both by Nightingale's (1969) mandate to the nursing profession and the Human Response Model, a conceptual model for nursing that depicts the complex interplay between the patient, their environment, and their health (Heitkemper & Shaver, 1989; Shaver, 1985). My dissertation work focuses on the relationship between exposures in the pediatric critical care environment (i.e., light and sound exposure, caregiving patterns), sleep disruption, and delirium in young, critically ill children. I chose to focus on PICU environmental exposures and sleep patterns because they are inherently nurse-driven; as the primary bedside caregiver, the nurse determines the type of environment in which children receive treatment. This dissertation study will inform future large-scale studies of sleep disruption and pediatric delirium, as well as the design and implementation of sleep promotion interventions for the PICU. The validation of sleep

promotion as an effective, nurse-driven, non-pharmacological delirium prevention method has the potential to improve the neurocognitive symptom management and clinical outcomes of survivors of pediatric critical illness.

In my future work as a nurse scientist, I will continue to root my research in the ideals espoused by Nightingale in her *Notes on Nursing* (1969). My long-term career goal is to become a leader in improving the neurocognitive symptom management, clinical outcomes, and long-term health of critically ill children by optimizing the pediatric critical care environment. In today's complex critical care setting, full of advanced treatments and lifesaving technology, let us never forget the unique role of the nurse: To place critically ill patients in the best possible intensive care environment to receive lifesaving treatment, heal, and promote long-term health.

References

- Al-Samsam, R. H., & Cullen, P. (2005). Sleep and adverse environmental factors in sedated mechanically ventilated pediatric intensive care patients. *Pediatric Critical Care Medicine*, 6(5), 562–7.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Association.
- Balas, M. C., Vasilevskis, E. E., Burke, W. J., Boehm, L., Pun, B. T., Olsen, K. M., Peitz, G. J., & Ely, E. W. (2012). Critical care nurses' role in implementing the “ABCDE bundle” into practice. *Critical Care Nurse*, 32(2), 35–8, 40–7; quiz 48.
<https://doi.org/10.4037/ccn2012229>
- Calandriello, A., Tylka, J., & Patwari, P. (2018). Sleep and delirium in pediatric critical illness: What is the relationship? *Medical Sciences*, 6(4), 90.
<https://doi.org/10.3390/medsci6040090>
- Claustrat, B., Brun, J., & Chazot, G. (2005). The basic physiology and pathophysiology of melatonin. *Sleep Medicine Reviews*, 9(1), 11–24.
<https://doi.org/10.1016/J.SMRV.2004.08.001>
- Colville, G., Kerry, S., & Pierce, C. (2008). Children's factual and delusional memories of intensive care. *American Journal of Respiratory and Critical Care Medicine*, 177(9), 976–982. <https://doi.org/10.1164/rccm.200706-857OC>
- Cureton-Lane, R. A., & Fontaine, D. K. (1997). Sleep in the pediatric ICU: an empirical investigation. *American Journal of Critical Care*, 6(1), 56–63.
- Durmer, J. S., & Dinges, D. F. (2005). Neurocognitive consequences of sleep deprivation. *Seminars in Neurology*, 25(1), 117–129. <https://doi.org/10.1055/s-2005-867080>

- Hegge, M. (2013). Nightingale's Environmental Theory. *Nursing Science Quarterly*, 26(3), 211–219. <https://doi.org/10.1177/0894318413489255>
- Heitkemper, M. M., & Shaver, J. F. (1989). Nursing research opportunities in enteral nutrition. *The Nursing Clinics of North America*, 24(2), 415–26.
- Holly, C., Porter, S., Echevarria, M., Dreker, M., & Ruzehaji, S. (2018). Recognizing delirium in hospitalized children: A systematic review of the evidence on risk factors and characteristics. *American Journal of Nursing*, 118(4), 24–36. <https://doi.org/10.1097/01.NAJ.0000532069.55339.f9>
- Kahn, M., Sheppes, G., & Sadeh, A. (2013). Sleep and emotions: Bidirectional links and underlying mechanisms. *International Journal of Psychophysiology*, 89(2), 218–228. <https://doi.org/10.1016/j.ijpsycho.2013.05.010>
- Kamdar, B. B., King, L. M., Collop, N. A., Sakamuri, S., Colantuoni, E., Neufeld, K. J., Bienvenu, O. J., Rowden, A. M., Touradji, P., Brower, R. G., & Needham, D. M. (2013). The effect of a quality improvement intervention on perceived sleep quality and cognition in a medical ICU. *Critical Care Medicine*, 41(3), 800–9. <https://doi.org/10.1097/CCM.0b013e3182746442>
- Kudchadkar, S. R., Aljohani, O. A., & Punjabi, N. M. (2014). Sleep of critically ill children in the pediatric intensive care unit: A systematic review. *Sleep Medicine Reviews*, 18(2), 103–110. <https://doi.org/10.1016/j.smr.2013.02.002>
- Kudchadkar, S. R., Yaster, M., & Punjabi, N. M. (2014). Sedation, sleep promotion, and delirium screening practices in the care of mechanically ventilated children: A wake-up call for the pediatric critical care community. *Critical Care Medicine*, 42(7), 1592–1600. <https://doi.org/10.1097/CCM.0000000000000326>

- Maldonado, J. R. (2017). Delirium pathophysiology: An updated hypothesis of the etiology of acute brain failure. *International Journal of Geriatric Psychiatry*, 1–30. <https://doi.org/10.1002/gps.4823>
- Meyburg, J., Dill, M. L., Traube, C., Silver, G., & von Haken, R. (2017). Patterns of postoperative delirium in children. *Pediatric Critical Care Medicine*, 18(2), 128–133. <https://doi.org/10.1097/PCC.0000000000000993>
- Nightingale, F. (1969). *Notes on nursing: What it is and what it is not*. Dover Publications, Inc.
- Patel, J., Baldwin, J., Bunting, P., & Laha, S. (2014). The effect of a multicomponent multidisciplinary bundle of interventions on sleep and delirium in medical and surgical intensive care patients. *Anaesthesia*, 69(6), 540–549. <https://doi.org/10.1111/anae.12638>
- Shaver, J. F. (1985). A biopsychosocial view of human health. *Nursing Outlook*, 33(4), 186–91.
- Smith, H. A. B., Gangopadhyay, M., Goben, C. M., Jacobowski, N. L., Chestnut, M. H., Thompson, J. L., Chandrasekhar, R., Williams, S. R., Griffith, K., Ely, E. W., Fuchs, D. C., & Pandharipande, P. P. (2017). Delirium and benzodiazepines associated with prolonged ICU stay in critically ill infants and young children. *Critical Care Medicine*, 45(9), 1427–1435. <https://doi.org/10.1097/CCM.0000000000002515>
- Staveski, S. L., Pickler, R. H., Lin, L., Shaw, R. J., Meinzen-Derr, J., Redington, A., & Curley, M. A. Q. (2018). Management of pediatric delirium in pediatric cardiac intensive care patients: An international survey of current practices. *Pediatric*

Critical Care Medicine, 19(6), 538–543.

<https://doi.org/10.1097/PCC.0000000000001558>

Traube, C., Mauer, E. A., Gerber, L. M., Kaur, S., Joyce, C., Kerson, A., Carlo, C., Notterman, D., Worgall, S., Silver, G., & Greenwald, B. M. (2016). Cost associated with pediatric delirium in the ICU. *Critical Care Medicine*, 44(12), e1175–e1179.

<https://doi.org/10.1097/CCM.0000000000002004>

Traube, C., Silver, G., Gerber, L. M., Kaur, S., Mauer, E. A., Kerson, A., Joyce, C., & Greenwald, B. M. (2017). Delirium and mortality in critically ill children: Epidemiology and outcomes of pediatric delirium. *Critical Care Medicine*, 45(5), 891–898. <https://doi.org/10.1097/CCM.0000000000002324>