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PTSD and the COVID-19 Continuum



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The COVID-19 pandemic continues to cause chaos and confusion in health care, the outcome of which manifests itself as erratic and often incomprehensible behaviors of staff. These behaviors are symptoms of post-traumatic stress disorder (PTSD). This article explores the association of the COVID pandemic and the emergence of PTSD symptoms. A theoretical framework is presented to assist the nurse leader in gaining perspective, and suggests treatment modalities to assist at times when behaviors present in the workplace.

here is an underlying fragility of the work force with little patience for even the slightest of errors. Society's capacity for tolerance has criminally waned. In the 2 weeks spanning March 17, 2021, through April 1, 2021, 20 mass shootings occurred throughout the United States.¹ These shootings created immense trauma and incalculable loss. One was attributed to a dispute, whereas 2 others were attributed to road rage. Six occurred at parties/social settings. Another was considered a hate crime. One occurred at the grocery store, and 2 in family homes. Still others have yet to provide conclusive motives. Victims range from children to adults. Humanity is quickly provoked by even the smallest of details.

Nurse leaders are walking in the midst of chaos. Their collective experiences are shaped from living and are leading staff through times of pain and loss. Disoriented and bewildered, they continue to be submerged by this COVID pandemic. When one considers these national tragedies, in tandem with an increasing positivity rate of the virus, nurse leaders and their human resource partners should not be surprised by the magnitude of unrest staff are exhibiting on a daily basis. Consider, if you will, the following:

- A usually rational RN storms into the human resource department profanely demanding that an FMLA (Family and Medical Leave) start date be changed with no sensible reason.
- A post-partum licensed practical nurse having received numerous accommodations to remain gainfully employed throughout her pregnancy resigns without notice.
- A certified nursing assistant neglects multiple phone calls from the employee health nurse avoiding evaluation and genuine concern for her health status.
- A newly hired social worker misses his first day of orientation. When it is rescheduled, he misses that as well. Upon the third attempt to reschedule, the phone calls go straight to voice mail.

Additionally, nurse leaders are handling patient/ family escalations at increasingly alarming rates. Consider the following:

- A patient's son verbally threatens to "gun-down" nurses on the unit, if his mother is not immediately discharged.
- Planned discharge dates are postponed, as family members either say they forgot or are not prepared to manage their loved ones at home.
 - Or the most tragic of all:
- A 32-year-old emergency medical technician does not arrive to work. When the staffing office personnel request a "wellness check," he is found face down in his bed while his 2-year-old cries in hunger and fear.

The purpose of this article is to examine behaviors in an attempt to gain perspective, and be prepared and unfazed in continuing to meet the unexpected situational demands of the COVID-19 virus.

BACKGROUND

Discussion at a workshop sponsored by the National Academies of Sciences, Engineering, and Medicine,² enlightened the participants to the severity of mental

KEY POINTS

- Nurses who were/are on the front lines of caring for COVID-positive patients are more likely to experience symptoms related to PTSD.
- Consideration of the Butterfly and Black Swan theories of complexity help provide an understanding of COVID-19-related PTSD.
- PTSD treatment modalities, resource availability, and program development can mitigate the effects of symptomatology.

health and substance abuse challenges resulting from living through the pandemic. A reported 18% of the general population recovering from COVID will have psychiatric disorders. This includes those predisposed. However, in the general adult population, anxiety and depression were reported at 31%. Additionally, 13% reported starting or sustaining substance use. Eleven percent contemplated suicide. Despite virtual platforms for communication, social distancing, quarantining, and isolation fed the flames of despair, abandonment, and despondency.³

A more startling finding discussed at the National Academy's pandemic workshop,² was the revelation that working as a nurse was classified as a risk factor for experiencing mental health issues. These issues exhibit themselves as; frustration, anxiety, grief, anger, fear, insomnia, and burnout, all collective symptoms of post-traumatic stress disorder (PTSD). The jungles bordering the Mekong Delta of Vietnam are a long way from the executive board rooms of American health care organizations. Yet, the effects that war had on soldiers are the same ones leaders are being confronted with during the COVID-19 continuum.

EXAMINING BEHAVIORS TO GAIN PERSPECTIVE

PTSD is a psychological response to a traumatic event.⁴ There are 4 categories of symptoms that characterize PTSD.^{4(p.2)} They are as follows:

- **Re-experiencing the trauma:** characterized by nightmares or flashbacks.
- **Avoiding certain situations:** circumventing people/situations reminiscent of the traumatic experience.
- Negative changes in emotions and beliefs: a change in the way a person may think about themselves, their co-workers, families, and friends. They may be unable to express loving feelings toward others.
- **Experience hyperarousal:** characterized by difficulty sleeping, concentrating or by becoming easily startled.

Research studies support these observed behaviors for staff. However, PTSD is seen more intensely in those veterans who were on the front lines.⁵ The inference can be made; nurses who were/are handson, front-line care givers for those patients diagnosed with COVID-19 are more likely to experience PTSD.

Several studies of combat veterans serving in Southeast Asia during the Vietnam war support the finding of prolonged symptoms associated with PTSD.⁵ Physical health concerns were reported. The pain associated with physical debilitation was treated both prescriptively, but also by self-prescribed remedies. These scenarios contribute to the persistence of the pain-medication cycle, a habitual predicament. Additionally, PTSD may cause an erosion of happiness as evidenced by increasing difficulties with marriage, parenting, and a "healthy sex-life." The American Psychiatric Association reports that emotional avoidance is a principal diagnostic feature of PTSD.⁶

There is some evidence that people with preexisting high trait anxiety may be more vulnerable to PTSD.^{7(p.10)} However, singularity or duration of a traumatic event, in this case COVID-19, did not correlate with symptomatology. Instead, the researchers concluded that either could contribute to the onset, or exacerbation of PTSD. In fact, they concluded that "personal trauma concepts are malleable and dependent on context."^{7(p.21)} This means they are extremely individual in nature.

There is a correlation between impulsivity and those suffering from PTSD.⁸ Impulsivity, or a "predisposition toward rapid and unplanned responses to internal or external stimuli without regard to negative consequences"^{8(p.2)} could explain the previously described and unpredictable behaviors nurse leaders are seeing in their organizations. The irrationality of the most rational of employees may be a result of COVID-19–related PTSD.

Mental health issues experienced by leaders are attributed to the burden of decision-making. Many decisions related to COVID-19 required nurse leaders to deeply consider their ethical and moral values.⁹ COVID-19 can now be added as an event that can trigger PTSD.

THEORETICAL FRAMEWORK

Chaos and complexity theory help inform the nurse leaders' understanding of the COVID-19 continuum. Chaos theory establishes the nonlinear randomness of outcomes.¹⁰ Its theorems propose that cause and effect cannot be predicted due to the complex nature of endless variables.¹¹ This is not to say that certain events cannot be anticipated; they can. However, it is the subsequent aftermath or behaviors that are so individual, leaders are totally unsuspecting. Unprepared to handle the presenting issues, they network with colleagues only to learn that described situations are unique, solutions are scarce and often invented along the way. Consideration of the Butterfly and Black Swan theories of complexity may provide further understanding.

Butterfly Theory Versus Black Swan Theory

The Butterfly Theory is commonly understood as the potential chaos a small and low probability event can create.¹² In contemplating the surging of the COVID-19 virus, one might consider a lab contamination or a viral bat bite to be a flap of a butterfly's wing; inconsequential at best. However, this theory supports the ability of a small variance creating an unpredictable

outcome: in this case. a global pandemic. Nurse leaders may have developed contingency plans for anticipated disease outbreaks, that is, MRSA or C-diff. However, avoiding leadership grand failure may be impossible when the magnitude of the event affects the world. The subsequent aftermath is incomprehensible and as varied as the human individuals themselves.

The Black Swan Theory is generally understood as the avoidance of surprise, that is, the detection of a black swan in a pond full of white swans.¹³ This theory foreshadows the importance of leaders identifying and preventing areas of potential vulnerability. Three elements must be present for an event to be considered a black swan.¹⁴ The events in question must be; "outside the realm of regular expectations, carry an extreme impact, and have rationale invented, for its occurrence." The black swan is not the COVID-19 pandemic itself. Instead, it is the staff's unpredictable response, manifesting itself as odd behavior, rage, violence and suicide. The Black Swan Theory distinguishes this response, as an outlier, carrying an extreme impact, that leaders try to explain, but really cannot.¹⁴

PREPARED FOR THE UNPREDICTABLE

The realization by nurse leaders that PTSD is the black swan response to the COVID-19 virus allows the development of unique individualized plans to mitigate its effects. Nurse leaders are not psychiatric clinicians. It is beneficial, however, to possess types and availability of resources, and consider program development to guide staff in seeking treatment of PTSD symptoms. The following suggestions may be of some use.

- National hotline number, 1-800-273-TALK (8255), places callers in contact with professional crisis counselors.¹⁵
- The COVID COACH is a free mobile application designed to increase overall well-being. It provides suggestions meant to manage stress and build resiliency.¹⁵
- Employee Assistance Programs (EAPs) are a mainstay of services provided by most organizational insurance carriers. However, the staff that can most benefit from them question their confidentiality. In a recent "pulse survey," conducted by the American Nurses Association, only 5% of the over 12,000 participants considered the EAP to be helpful.¹⁶ Additionally, the participants rated the trustworthiness of workplace health and wellness resources 3.3 on a scale where 5 indicated strongly agreed. Employee assistance programs are an excellent staff resource, but need a rebranding campaign to include how beneficial and confidential they are.
- Chaplaincy programs can provide an added dimension to PTSD therapies. The nurturance of spirituality positively impacts coping skills.¹⁷ Investing in a

chaplaincy program to provide spiritually based interventions can help improve PTSD symptoms.

- Art therapy programs may help decrease PTSD symptoms.¹⁸ The employee wellness/activities committee may sponsor an art-focused event. Artistic expressions free of expectations and judgement can assist individuals to explore their feelings. Cognizant of the need to social distance, projects can be completed at home and exhibited at the end of a set time period. Conversations held during display could create healing connections.
- Support groups, although well recognized as an important therapy component for treatment of PTSD, may not be as robustly utilized for several reasons. In-person support groups were initially stopped as an infection prevention measure. As COVID re-emerges, social distancing may continue to affect enrollment. Additionally, respiratory etiquette requires masks that hide expressions and hinder transparency. Virtual platforms have a semblance of "artificiality," to them (R. Burk, personal communication, August 10, 2021). Burk, a licensed clinical social worker with over 40 years counseling experience states, "they do not allow for the normal conversational rhythms of an in-person support group." He suggests that the natural flow of subtle clues is missed, which are so important to creating the energy field required for group cohesion and effectiveness. "The artificiality of the virtual realm filters out the human experience: the essence of knowing that we are all connected in our struggles" (R. Burk, personal communication, August 10, 2021). Virtual platforms require focused attention. It is too easy for participants to disengage the camera or mute themselves. This may lead to a phenomenon coined, "zoom fatigue."¹⁹ Effective support groups require in-person opportunities. Nurse leaders might work quickly with their facility directors to create an outdoor healing space for support groups to convene.

These suggestions are not meant to take the place of therapeutic, multimodal regimens prescribed by clinical experts. They are, however, meant to provide the nurse leader with a quick reference to assist at times when behaviors present in the work place. Immediacy of nurse leader response is imperative when behaviors are observed. Innovative solutions provided in a mindful, compassionate manner will help assure staff of leadership's commitment to their well-being. Nurse leaders must preserve psychological safety, or a judgment-free zone, to avoid any type of stigma associated with seeking or receiving help for mental health issues.

IMPLICATIONS FOR NURSE LEADERS

Nurses, by virtue of the nursing process, are conditioned to rapidly assess their patients, develop an individualized plan of care, implement that plan, and evaluate its effectiveness. Nurse leaders are required to do the same for the staff they represent, and lead. When faced with a world once again submerged in COVID's global grip, the realization is, nothing will ever be the same. A template for remedy does not exist. There is no quick fix to resuming normal. However, the ability to recognize PTSD, as a response to the COVID experience is the first step in providing some healing to the health care work force. There is no "new normal." There is just new.

REFERENCES

- Holcombe M. At Least 20 Mass Shootings Have Taken Place in the Two Weeks Since the Metro Atlanta Spa Attacks Left 8 Dead. CNN website; April 2021. Available at: https://www. cnn.com/2021/04/01/us/two-weeks-20-mass-shootings-trnd/ index.html. Accessed April 2021.
- National Academies of Sciences, Engineering, and Medicine. Mental Health and Substance Use Disorders in the Era of COVID-19. The Impact of the Pandemic on Communities of Color: Proceedings of a Workshop-in Brief. Washington, DC: The National Academies Press; 2021.
- Kagan I, Shor R, Ben Aharon I, et al. A mixed-methods study of nurse managers' managerial and clinical challenges in mental health enters during the COVID-19 pandemic [e-pub ahead of print]. J Nurs Scholarsh. https://doi.org/10.1111/ jnu.12685. Accessed June 2, 2021.
- Kandola A. How Can the COVID-19 Pandemic Affect PTSD?. Available at: https://www.medicalnewstoday.com/articles/ ptsd-and-covid-19#causes. Accessed July 26, 2021.
- Tull M. The Long-Term Impact of PTSD in Vietnam War Veterans. July 2021. Available at: https://www.verywellmind. com/ptsd-from-the-vietnam-war-2797449. Accessed May 5, 2021.
- **6.** American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*. Washington, DC: American Psychiatric Association; 2013.
- Jones PJ, McNally RJ. Does broadening one's concept of trauma undermine resilience? [e-pub ahead of print]. *Psychol Trauma*. https://doi.org/10.1037/tra0001063. Accessed July 31, 2021.
- Peck K, Nighbor TD, Price M. Examining associations between impulsivity, opioid use disorder, and posttraumatic stress disorder: the additive relation between disorders [e-pub ahead of print]. *Exp Clin Psychopharmacol.* https://doi.org/10.1037/ pha0000507. Accessed July 31, 2021.
- Benefante A, Di Tella M, Romeo A, Castelli L. Traumatic stress in healthcare workers during COVID-19 pandemic: a review of the immediate impact. *Front Psychol.* 2020;11:569935.

- Halpern P. Chaos Theory, the Butterfly Effect, and the Computer Glitch That Started It All. Forbes website; 2018. Available at: https://www.forbes.com/sites/startwithabang/2018/ 02/13/chaos-theory-the-buttefly-effect-and-the-computerglitch-that-started-it-all/?sh=7b4015a969f6. Accessed June 21, 2021.
- **11.** Dizikes P. When the Butterfly Effect Took Flight. *MIT Review*, 2011. Available at: https://www.technologyreview.com/2011/02/22/196987/when-the-butterfly-effect-took-flight/. Accessed June 21, 2021.
- **12.** Strother SC. The butterfly theory of crisis management. In: Farazmand A, ed. *Global Encyclopedia of Public Administration, Public Policy, and Governance*. Cham, Switzerland: Singer International Publishing; 2016.
- Hajikazemi S, Ekambaram A, Andersen B, Zidane YJ-T. The Black Swan–knowing the unknown in projects. *Procedia Soc Behav Sci.* 2016;226:184-192.
- Runde J. Dissecting the black swan. Crit Rev. 2009;21(4):491-505.
- 15. PTSD: National Center for PTSD. Effects of the Coronavirus (COVID-19) Pandemic on PTSD. 2021. Available at: https:// www.ptsd.va.gov/covid/COVID_effects_ptsd.asp. Accessed July 26, 2021.
- American Nurses Association. Mental Health and Wellness Survey 2. 2020. Available at: Nursingworld.org/practicepolicy/work-environment/health-safety/disaster-preparedness/ coronavirus/what-you-need-to-know/mental-health-andwellness-survey-2/. Accessed July 7, 2021.
- **17.** Starino VR, Angel CT, Sullivan JE, et al. Preliminary report on a spiritually-based PTSD intervention for military veterans. *Community Ment Health J.* 2019;55:1114-1119.
- Winter N, Coles A. 'The silent intermediary': a co-authored exploration of a client's experience of art psychotherapy for C-PTSD. Int J Art Ther. 2021;26:1-2,29-36.
- 19. Schaverien A. Citi creates 'Zoom-free Fridays' to combat pandemic fatigue. *The New York Times*; 2021. Available at: https://www.nytimes.com/2021/03/24/business/citi-zoomfree-fridays.amp.html. Accessed April 3, 2021.

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