

Optimizing Nursing Strategies to Mitigate Delirium in ICU Patients Amid the COVID-19 Crisis: A Narrative Perspective

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Received: 13-08-2025; Revised: 05-09-2025; Accepted: 23-10-2025; Published: 04-11-2025

Abstract

Delirium is the most prevalent but underestimated complex associated with critically ill patients in intensive care units (ICUs) and incidence rates increased dramatically during the COVID-19 pandemic due to isolation, sedation, mechanical ventilation and limited contact with their families. In this narrative overview, I delved into the evidence-based nursing practices in the prevention and mitigation of delirium among ICU patients during the pandemic. An excessive focus is put on non-pharmacologic methods like the reorientation techniques, encouragement of sleep, early mobilization, and improved communication strategies. The summary also mentions the presence of individual issues with infection control requirements and professionals shortage during the pandemic, which requires the importance of flexible and patient-oriented nursing care. With proper guidance to these strategies, not only can the patients manage to reduce the rates and severity of delirium, but also enhance long-term cognitive as well as functional outcomes among patients with critical illness.

Keywords: *Delirium prevention, ICU nursing, COVID-19 pandemic, critically ill patients, nursing interventions, intensive care unit, cognitive dysfunction, non-pharmacological strategies, patient-centered care, early mobilization, reorientation, sedation management.*

1.Introduction

The emergence of the COVID-19 pandemic created decisive changes in the way healthcare is provided, especially in intensive care units (ICUs), as seriously ill patients not only need life-sustaining treatment but also close psychological and cognitive support. During this worldwide health outbreak, high rates of delirium, an acute neuropsychiatric disorder that is defined by a disruption in the state of awareness, disorganized thoughts, and an unstable cognition, represent one of the most critical, although often underassessed issues that frontline healthcare professionals have to deal with(1). With the increase of the pandemic, ICU facilities proved to become the places where this condition can be spawned, with such contributing factors as mechanical intubation treatment, detachment from family and friends, the unfamiliarity of medical care units, and excessive administration of sedatives. In this respect, the professional significance of ICU nurses has been redefined drastically, shifting not only their role as care givers, but also as the leading protagonists in the early diagnosis, prevention, and personalized treatment of delirium.

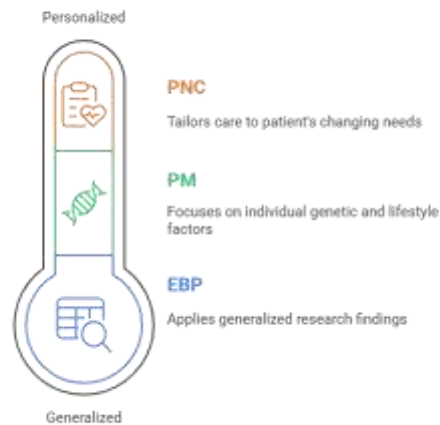
Delirium does not just occur as a transient clouding of consciousness; it is one of the most important warning signs of extreme physiological distress, particularly among patients fighting SARS-CoV-2 infection. In case of COVID-19 as well, its manifestation could be insidious or misdiagnosed, in comparison to when influenced by the respiratory symptoms or underlying comorbidities. Despite frequently being short-lived, this neurocognitive disorder is associated with serious adverse consequences: longer hospital stay, higher death rate, decline of cognitive functions in the long term period and greater probability of institutionalization. There is therefore an urgent need to manage it in a subtle proactive manner. That is why personalized nursing care is an important discipline that is currently developed and can be used to adjust the strategy of care to the unique physiological and psychosocial profile of a patient and combine methods of evidence-based practice (EBP) and person-centered approaches.

Conventionally, evidence-based practice involved dedication to the utilization of the findings of generalized studies in clinical research on a large-scale patient population. But as the shortcomings of this unitary approach, nicknamed the one-size-fits-all model, have become felt, especially in the more challenging ICU settings, the medical sector has rolled out personalized medicine (PM). PM underlines the presence of diagnostic, prognostic, and curative methods that pay attention to the person as an individual genetically, environmentally, and lifestyle. This idea can be applied to nursing and concerns the concept of Personalized Nursing Care (PNC), i.e., the dealing of care measures to the patient regarding the ongoing evaluation of changes in his needs, preferences, and reactions

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to treatment(2). The idea of PNC applied in the treatment of delirium in patients admitted to ICUs is not only innovated, but extremely necessary especially amid a pandemic that has heightened vulnerabilities in all patient populations.

Delirium management strategies range from generalized to personalized.



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FIGURE 1 Delirium management strategies range from generalized to personalized

The elevated rates of delirium in the aggravated conditions of the COVID-19 pandemic can be explained by various reinforced stress factors. First, the very course of COVID-19 has a neurotropic potential, an unpredictable nature, with consequences on a multi-organ level, which sets a physiological background on which cognitive disorders can emerge. Second, infection control measures including a limited family visit, personal protective equipment (PPE), and communication barriers have further widened the isolation of patients, making anxiety and disorientation even worse. Third, the ICU treatment processes and, in particular, aggressive interventions with sedatives, paralytics, and mechanical ventilation interfere with natural sleep and wake cycles and minimize the chances of cognitive activity. In general, all these tendencies require radical reconsideration of nursing strategies, including the early detection of at-risk patients and the use of specific non-pharmacological interventions.

The adaptability is a characteristic feature of the successful nursing care within the context. ICU nurse needs to constantly adapt the approach to patients changing mental conditions, inability to communicate properly and constantly varying clinical conditions(3). This flexibility is especially significant considering that delirium can assume three sub-types, namely, hyperactive, hypoactive, and mixed, with the latter being most insidious, in that, it is prone to under-diagnosis because of its less-obvious symptoms (e.g., lethargy, diminished responsiveness). Hypoactive delirium is likely to be misinterpreted in COVID-19 ICUs, where resources and time are limited, and lead to a delay in necessary interventions being performed.

The ABCDEF bundle is one of the most promising frameworks to create a well-structured system of delirium management, and it correlates with the ideas of personalization perfectly. This is an interdisciplinary model in which the focus is on the evaluation and treatment of pain, spontaneous awakening and breathing, appropriate administration of sedation, constant monitoring of delirium, early mobilization, and family involvement. All these elements need to be very well implemented by the nursing staff that has both technical and emotional scopes involved in the care of the patient. As an example, helping a ventilated patient move in bed or making it possible to use a video communicator to communicate with the family members are the examples of the nursing interventions that on the one hand, can be considered logistically challenging but on the other hand, have proven to be effective in reducing the severity and duration of delirium.

Additionally, emotional strain on the ICU nurses cannot be ignored when addressing the problem caused by the epidemic. Nurses under perform with extreme pressure and in many instances their staffing and protective material is always not enough thus the risk of burnout, compassion fatigue and psychologically disturbed is at high risk(4). In case this occupational strain is not addressed, it can affect the quality of care and prevent the early recognition of changes in the mental status of patients. Healthcare systems must thus make considerable investment in training

nurses, mental health services, and new team-based approaches to the division of cognitive and emotional workloads to manage delirium more fairly.

Nurse education and clinical practice should be changed on a paradigmatic level in order to address ICU delirium in case of pandemic. The nursing curricula at the undergraduate and postgraduate levels are required to be broadened to provide potent neurocognitive assessment, psychological first-aid and communication competencies to work in high-level settings. Simultaneously, the neurobiology of delirium in COVID-19 patients should be researched so that clinical guidelines on delirium can be evidence-based and flexible enough to suit both individual differences and the overall specifics of the pandemic situation. The interdisciplinary task of preventing delirium relies heavily on communication between nurses, physicians, psychologists, and physiotherapists since any of these areas cannot fully cover the nature of the phenomenon.

2.Modifiability as a Focus During COVID-19

Learning the risk factors related to delirium is basic to its avertance and particularly the basic space of critically unwell patients in danger units (ICUs) amid the COVID-19 outburst. Delirium does not just happen, but is a complicated combination of both factors, which are the patient-specific susceptibility to delirium and environmental etiologic factors. These factors are usually grouped into non modifiable factors i.e. the factors that are particular to the patient and cannot be changed and potentially modifiable factors i.e. factors that can be altered, reduced or contained by utilizing focused interventions(5). These two classifications are imperative to the nurses and other medical experts in formulating proper mitigation and early response interventions.

The non-modifiable risk factors are found most significantly in the health status of the patient. Old age as an example of risk factors is always demonstrated to predispose the victim to delirium. Patients who have experienced ageing have less mental energy, otherwise known as the cognitive reserves, making their brain more weak and unable to adapt to the physiological injuries involved with critical illness and related complications of COVID-19 infection. Besides, the risk is increased by a history of neurological disorders (dementia, previous strokes, or cognitive impairment). The above conditions are usually accompanied by reduced sensual perception and therefore the high-stimulation environment in ICU becomes disrupting and confusing. Indeed, research revealed that individuals who experienced delirium previously have an enhanced risk of a further development and especially in times when individuals face the greatest stress rates and isolation such as being in an intensive care unit during pandemic initiatives.

Gender is also another important non-modifiable factor, with other studies showing that males might slightly be more predisposed to ICU delirium. Although the details of the biological processes underlying it remain somewhat unclear, this trend may be linked to the higher rate of such comorbidities as cardiovascular disease and chronic respiratory illness among male patients. Complex multimorbidity is also a risk factor: characterized as the co-prevalence of two or more chronic diseases, complex multimorbidity puts patients in a naturally worse situation when they are compromised by infection, systemic inflammation, or dysfunction because of SARS-CoV-2.

Although these non-modifiable risk factors comprise the baseline risk picture it is the potentially modifiable risk factors which provide the best potential use of preventive nursing interventions. Immobilization is one of the greatest contributors among them. Delays in moving out of bed and the presence of devices like intravenous lines, urinary catheters, and mechanical ventilators make it harder to move and receive stimuli. Such physical inactivity may cause muscle atrophy, yet more so, develop a condition of disorientation and psychological withdrawal. The COVID-19 pandemic has created a scenario in which resources are stretched thin, and to avoid the spread of the virus, physical contact is reduced to a minimum, so basic range-of-motion exercises or even encouraging people to walk as soon as possible, with limited mobility, can reduce the risk of developing delirium by a significant amount(6).

This is another very important modifiable cause, which is pharmacological treatment, especially an excessive dose or misuse of sedatives, narcotics, and anticholinergic drugs. In the first surge of the pandemic, the use of heavy sedation was a strategy used by many ICUs to deal with people who were put on ventilators and to make sure that they do not become agitated. Still, long-lasting sedation leads to sleep disorders, neurotransmitter imbalance, and mental processing block. Benzodiazepines, corticosteroids, and polypharmacotherapy not only lead to the postponement of abducting assisted ventilation they also cause an increase in the chances of being affected by delirium. Therefore, prescribing and responsible deprescribing when it can be done is core to the process of preventing delirium.

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Another modifiable risk factor is environmental stressors in the ICU that combine the continuous noise, the absence of windows and daylight, the loss of time and the lack of temporal orientation (e.g. no clocks or calendars, etc.). In these conditions, patients, particularly those who have hypoxia or are subjected to mechanical ventilation at large, may easily get disoriented. Lighting is the best way that it can be addressed through nurses optimizing lighting to support circadian rhythms, keeping noise in the nightway at the minimum and using reminders where verbal words can help remind patients about time and place. Moreover, it is important to have familiar things or pictures, even digitized since of the infection control measures, alongside the bed of the patient so as to make patients be grounded in reality.

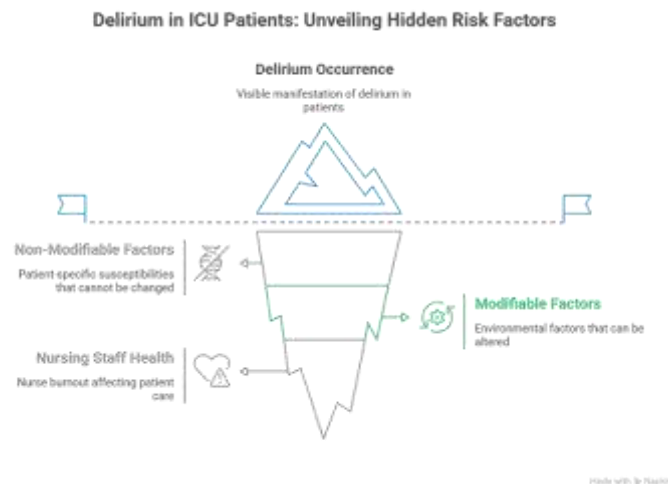


FIGURE 2 Delirium in ICU Patients: Unveiling Hidden Risk Factors

Psychosocial seclusion and emotional pressure have been found to be potent prognosticators of delirium among COVID-19 individuals under ICU. The pandemic significantly restricted visits of family members, making the patients feel alone and terrified. In many cases, the fact that it is being communicated by masked, PPE-wearing employees provided an additional element of dread, particularly in older people or those with lower levels of language literacy. The role of the nurses in humanizing care becomes very important in such cases. The ability to conduct a video chat, to convey messages and updates by family, or even to have someone always available to the patient to spend time with this person can provide emotional steadiness and lessen the isolation so many experience, which make delirium so much more probable(7).

Pain, the under-treatment and the over-treatment of it are another factor that is often omitted. Uncontrolled pain elevates stress hormone and sleeping disorder and cognitive disorders. Meanwhile, intra-operative pain relievers (opioids) overuse may trigger sedation delirium in the central nervous system. This weight balance is, thus, achieved by frequent pain assessment based on valid formulas such as the Critical-Care Pain Observation Tool (CPOT) and proportioning and customizing the analgesia so that it achieves pain management strategy without infringing the cognitive capacity.

Additional risks to the metabolic imbalances, which are also likely to be enhanced by the severe COVID-19 infection, include hyponatremia, hyperglycemia, dehydration, or anemia. These disorders influence the cerebral perfusion and neurotransmitters activity causing disturbed sensorium. These imbalances should be monitored consistently and corrected in time as part of comprehensive approach to preventing delirium.

It is worth noting that brain role is directly affected by hypoxia that is a consequence of the respiratory failure in COVID-19. Oxygen deprivation of the brain may lead to disturbance in mental acuity and cause a state of confusion and hallucination. It is because most COVID-19 patients are put in critical condition, and intubated urgently; therefore, ventilation-emerging in a hospitable ICU environment can be distressing. Optimization of oxygenation levels and minimization of sedation are to be maintained once respiratory stability has been attained by the nurses. Having explanations of procedures and things around them during Moments of awareness, explains how at that level, it can help in lessening the fear-induced agitation and confusion effect on patients.

Last but not least, can not the health of the nursing staff itself be left unmentioned. Common among ICU nurses during the pandemic, burnout, fatigue, and emotional exhaustion may negatively affect attentive care and recognition of the slightest indicators of delirium. The level of personalized care becomes lower when a nurse is

physically and emotionally exhausted, and this effect might cause a patient to become more open to complications. To keep the quality of care intact, hospitals will have to invest in a workforce support system, frequent debriefing exercises, and sufficient workforce.

3. Instruments for Detecting and Treating Delirium in COVID-19 Patients

Effective screening and initiation of delirium are crucial elements of thorough care in the intensive care unit (ICU), which may be particularly crucial in the COVID-19 pandemic when patients tend to show a combination of respiratory distress manifestations, sedatives, and delirium. Nurses are key persons in early detection of delirium and this has to be achieved through validated, sensitive and practical assessment tools. Since COVID-19 patients in the intensive care unit might be intubated, sedated, or even displaying hypoxia, the importance of non-verbal communication and objective evaluation gaining stress is hard to underestimate. Although these tools are helpful in their diagnosis, they can also assist in observing the course of delirium development or resolution over time, directing changes in the care plans.

Assessment of any critically ill patient based on delirium starts off by delirium examination on level of consciousness(8). One of the most popular tools to be used in this case is referred to as Richmond Agitation-Sedation Scale (RASS). It enables the clinician and the nurses to decide as to whether the patient is conscious enough to undergo delirium assessment or they are too sedated. RASS scores have a range of +4 (combative) to -5 (unarousable), with a subset of -3 score or more normally indicating the need to carry out further delirium assessment. When COVID-19 is viewed, a great number of patients are sedated to tolerate invasive ventilation and to cope with severe agitation, hence, regular monitoring of RASS is required to understand once it is effective and safe to start the phases of delirium recognition. In addition, RASS score acts as a reference point to other behavioral and cognitive assessment mechanisms.

After assessing when a patient is in a RASS level in which additional assessment is possible, the Confusion Assessment Method in the Intensive Care Unit (CAM-ICU) is often considered as the gold detection rate of determination of delirium in severely ill patients. This tool is the modification of an original Confusion Assessment Method (CAM) that was specifically adapted to work with non-verbal or with the patients who are mechanically ventilated. CAM-ICU evaluates four components namely acute of fluctuating course, inattention, disorganized thoughts, and alteration of the level of consciousness. When a patient presents with inattention together with either of the other core features, then he or she is said to be positive to delirium. The CAM-ICU has received validation in different ICU groups and is accompanied with high rates of sensitivity and specificity in case of correct administration. Nevertheless, it needs training to be implemented efficiently because some of the cognitive manifestations are rather subtle and are bound to be misinterpreted without proper attention.

Besides CAM-ICU and other tools aimed at the physicians, the nurses often have their tool than can be used in bedside observations. Nursing Delirium Screening Scale (NuDESC) is one of such instruments. This scale is highly advantageous because it is rather simple and easy to administer. It assesses five behavioral symptoms, which include disorientation, inappropriate behavior, inappropriate communication, delusions or hallucinations, and psychomotor retardation with a scoring on a scale of 0 to 2. When the total is 2 or more, it normally shows that one is delirious. The NuDESC can be used effectively in the process of standard nursing assessment and does not require any significant amount of cognitive testing activities and thus it is a viable option in a pandemic intensified care unit scenario with numerous nursing assessments that are continuously required.

Another delirium screening tool that is quick and can be administered by any health professional (including nurses) upon the initial contact with a patient is the so-called 4AT (4 Aas test). It evaluates alertness, abbreviated mental test-4 (in respect of orientation), attention (through months of the years backward) and acute change or fluctuating course. The 4AT is particularly appropriate in emergency rooms and units but also applied among conscious patients in the ICU. Since hypoxia and changes in consciousness are frequent in COVID-19 patients, the analysis of such patients with the help of a test, such as 4AT, will help identify the need to conduct additional studies to determine the course of treatment(9). It is a very short test that only needs little training, and it can be done in almost two minutes, and it has been tested in numerous languages, qualifying it as a worldwide tool.

The other useful tool is Delirium Observation Screening (DOS) scale and it involves 13 observable items to be rated during a nursing shift. This is a more gradual and complex tool to examine the behavior of this patient over time than at a particular point in time. DOS scale is especially useful when formal testing is hard because of language barrier or sedation since it involves minimal examination of perceivable symptoms including changes in

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motor activity, distractibility, or hallucinations. The DOS causes earlier medical tests due to its ability to identify early behavior symptoms that can be used to avoid further deterioration in neurological conditions.

Predictive models, such as the PRE-DELIRIC (Prediction of Delirium in ICU patients) model also can be of assistance in the early phases of ICU admissions. The instrument is composed of data collected during the initial 24 hours of ICU admission and reflects age, infection, sedation, metabolic acidosis and urgent admission. It predicts the likely occurrence of delirium and allows clinicians and nurses to indicate the high-risk subjects. The PRE-DELIRIC tool is useful in predicting the risks of delirium and in timely preparations and close follow-ups in COVID-19 patients who frequently present with numerous risk factors, such as respiratory failure, sedation, systemic inflammation, etc.

Another important factor that is closely connected to delirium is pain which also should be properly evaluated in order to prevent its under- and over-treatment. The examples of the instruments that are highly recommended to be used with ICU patients who cannot express the pain orally include the Behavioral Pain Scale (BPS) and the Critical Care Pain Observation Tool (CPOT). These scales assess the expression on the face, body physiology and obedience to ventilation and provide an objective method of pain management. Proper pain management is a proven way of reducing stress reactions, decreasing consequent sedative use, and, in turn, preventing delirium. The COVID-19 pandemic, which has left a large number of patients in need of non-invasive ventilation (NIV) or intubated, currently makes the application of BPS and CPOT especially significant in order to provide analgesic treatment.

Moreover, the re-assessment of the sedation levels is critical during the ICU admission and such approaches that are aimed at the assessment of the sedation level (such as the RASS) are simultaneously important in the assessment of the readiness to delirium screening. Hypoxic brain injury is a common occurrence in COVID-19 patients, so frequent RASS-based scoring, coupled with delirium assessment, serves to titrate sedatives and nerve pain medication in order to maximize neurological sequela(10). These scales, when applied in a systematic way, will help make the care more personal so that nurses could not only stabilize the patient medically, but also support on the thinking level.

In general, the implementation of the structured delirium assessment tools into the daily clinical routine of ICUs is required to improve the prognosis of critically ill patients, especially during a pandemic. Timely identification of cognitive decline, individual intervention schedules, and a comprehensive care practice is made possible by the appropriate use of these tools among well-trained nursing personnel. The significance of objective, reproducible scales of assessment in the era of COVID-19, when the rates of delirium have sharply risen, and the established systems of communication have been shaken, has never been as obvious.

4.ICU Delirium vs. COVID-19

The COVID-19 pandemic has significantly changed the circumstances of critical care and given rise to a surge of neurocognitive adverse events, among which delirium is the greatest. Although demand has always prevailed in ICU groups concerning delirium, its prevalence has sharply grown during the SARS-CoV-2 outbreak because of the special causal festival around the illness and how so it is treated. The clinical problem of COVID-19 is multifactorial and complex because direct viral injury to the central nervous system, long-lasting mechanical ventilation, heavy doses of sedatives, and isolation combine in a uniform recipe to produce a delirious state. In addition to that, patient management was complicated further by the unpredictability of patient deterioration, limited family contact, and a decrease of in-person care provided by allied health professionals. This highlights the necessity to adjust current approaches related to both pharmacological and non-pharmacological methods to counter the threat of delirium and enhance cognitive stability in severely ill COVID-19 patients as quickly as possible.

The available literature has also shown that no standardized algorithm of treating delirium during the COVID-19 pandemic has been agreed upon. Clinical teams have been forced to compromise a combination of traditional practices of delirium care along with, real-time adjustments, specific to the evolving needs of the pandemic situation. Pharmacologic treatments have been frequently administered in most cases through benzodiazepines, opioids, or antipsychotics depending on the clinical manifestations of the patient and the agitation level. Yet, this group of medicines comes with their own threats, specifically respiratory depression and over sedation, which are undesirable in the patients who are already battling with COVID-related lung-related impairment. As a result, there was a shift towards a more conservative model in many ICUs to focus less on pharmacological management

and the early mobilization or as much as possible and focus more on non-pharmacological measures since the former has a much better and safer neurocognitive consequence.

Among the most valuable conceptual schemes that can be used to manage contemporary delirium is the triad of pain, agitation, and delirium (PAD), it has been defined by the Society of Critical Care Medicine (SCCM). These three things are very closely connected with each other and may influence each significantly. An example can be the development of uncontrolled pain results in agitation that consequently exposes them to risk of delirium. Likewise, delirium can cause pain in a patient to be under-treated because the patient cannot effectively report his/her pain. Learning about this complicated connection can make care providers take a more patient-centered approach when treating ICU patients and adopt less fragmented plans that take into account the interaction of psychological and physiological causes of delirium. The framework is a basis of the larger and more extensive intervention system called the ABCDEF bundle that has received wide promotion in the environment of critical care.

The ABCDEF bundle is complex bundle evidence based practice, which aims at enhancing the outcome in the ICUs by targeting critical areas of managing a critical illness. It contains six elements that include: Assess, prevent, and manage pain, Both spontaneous awakening and breathing trials, Choice of sedation and analgesia, Delirium assessment, prevention and management, Early mobility and exercise, and Family engagement and communication. This organized package focuses on the necessity of daily assessment of sedation and level of consciousness, reduction of unnecessary medicines, and promotion of early activity as far as a state of a patient can be possible. There are measurable gains that have been realized with the use of this bundle such as a lower incidence and length of delirium, shortened ICU and hospital stay and increase in functional recovery.

There was also a considerable need to adapt to the implementation of the ABCDEF bundle in the course of the pandemic. As an example, spontaneous awakening trials (SAT) and spontaneous breathing trials (SBT), which are a constituent of weaning sedation and assessment of respiratory preparedness, should have been scheduled properly and closely observed in order to avoid decompensation in complex COVID-19 patients. Such tests entail purposeful withholding of sedation and then measuring the patient in the capacity to breathe independently, preferably detecting preparedness to extubation. Nonetheless, during the COVID-19, such practices were riskier because of the concerns with aerosol generation, hypoxia, and acute desaturation. Nevertheless, when possible, responsible SAT and SBT utilization has demonstrated potential in limiting the volume of futile days on a ventilator and decreasing the amount of sedatives to support the prevention or abridgment of delirium instances.

Other methods, including the so-called Wake Up and Breathe protocol have also been adopted to schedule sedation interruptions with ventilator weaning, so that the withdrawal of the sedatives would be organized in equal time and safe way. Clinical teams should conduct safety screening before conducting such a therapy and make sure that the patients are hemodynamically stable, are not at risk of seizures and that they have no conditions that contraindicate such interventions. In case a patient passes these tests without any signs of respiratory discomfort or aggravation of mental condition, there will be an opportunity to use less sedation, provide less intense ventilation, and get involved in the reality again as a vital aspect of cognitive healing.

Together with these best practices, other groups involved simpler decision-making tools like the Dr. DRE mnemonic that provides a rapid framework to aid in Delirium interventions: D to eliminate drugs, also including benzodiazepines and anticholinergics, R to provide Reorientation and reassurance via non-pharmacological approaches, and E to ensure that there is sufficient pain control. Such a model helps to remind the clinicians and nurses about the systemized withdrawal of deliriogenic medicines and offering the cognitive activities combined with pain management prior to applying antipsychotics or further sedation. In case the pharmacologic treatment is necessary, the use of Haloperidol or atypical antipsychotics can be cautious, care being necessary of risks of QT prolongation and extrapyramidal symptoms because of continuous monitoring.

The nature of the delirium prevention is anchored on non-pharmacological interventions, especially under the circumstances where pharmacological strategies come with added risks in the case of COVID-19 patients. The reorientation strategies, glasses and hearing aid, and minimization of bothersome night time, and mobilization were modified to the best possible during the pandemic. Though family bedside was mostly limited, a lot of hospitals gave the option of communicating over video conferencing; in this way, a patient was able to see and hear familiar voices. Such a straightforward and effective intervention has been proved to enhance emotional wellbeing and diminish anxiety, which are the crucial factors in triggering delirium.

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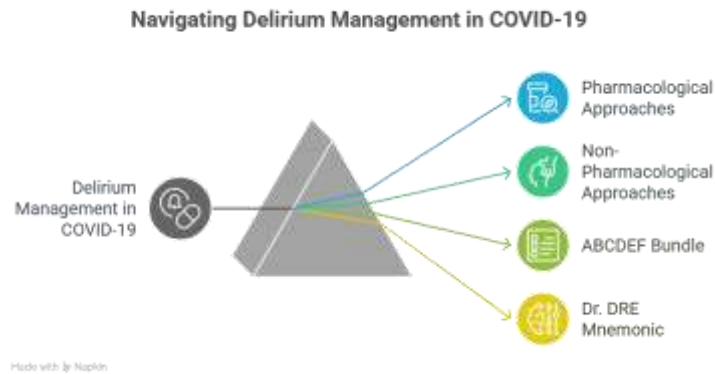


FIGURE 3 Navigating Delirium Management in COVID-19

Nevertheless, these attempts have not eliminated the problem of treating delirium in COVID-19 ICU patients because of its variable symptoms, fast-changing situations, and resource-limited treatment. The demand of continuous re-evaluation and concerted decision-making process has never been as high. Clinical teams can no longer be rigid but should rely, on the one hand, on standard procedures and, on the other hand, on new best practices to deliver both personalized and safe care. COVID-19 has not only widened the circles of delirium risk factors but has also outlined the need to incorporate early and multi-modal interventions that are coherent with the needs of individual patients.

In short, COVID-19 pandemic has changed the trends, processes, and methods of delirium management in ICU locations significantly. Although there is no single treatment algorithm, clinical experience and studies confirm the effectiveness of a balanced approach of a combination of pharmacological restraint and non-pharmacological focus along with strict adherence to multidimensional care bundles, among which one can distinguish ABCDEF. ICU nurses, physicians, and allied health professionals should remain flexible and innovative in their ways of caring, and the cognitive and emotional well-being of their patients must stay on the agenda, even in times of respiratory and infectious pandemics

5. Conclusion and Future work

To sum up, delirium in the critically ill condition requires the multidimensional and patient-centered approach to be managed, especially in the cases of COVID-19 patients in intensive care units. It can be concluded that the pandemic radically escalated the difficulties of critical care to the extent that created flaws in traditional delirium management approaches and justified the need to restructure the dimensions of nursing in the future of both cognitive and physical rehabilitation. Being the providers in the front line, nurses have a strong position to help modify patient outcomes through evidence-based tools, detection of small behavioral change, and implementation of interventions to suit the individual needs of the patient. They are more than caregivers as they provide emotional support, environmental adjustment, pain management, and mobilization, which are among the major determinants of occurrence and the severity of delirium.

The relevance of having a mix between standardized protocol with individual care has been greatly stressed during this crisis. Delirium assessment and management frameworks (ABCDEF bundle) and tools (CAM-ICU and NuDESC) have come to be invaluable to the systematic assessment and management of delirium. Nevertheless, these instruments can be as good as these individuals by whom they are used. This is why there is an emergent need to empower ICU nurses by means of continued education, interdisciplinary collaboration, and institutional support to a greater extent. It is vital to develop a flexible care that can be adjusted to the individual risk profiles as well as clinical needs that can change over the long term.

Moreover, the problems the pandemic has brought along, especially those dealing with access to family visits, over-sedation, and personnel shortages, have demonstrated that non-pharmacological measures have to be central to the prevention of delirium. Such strategies, including communication with the family, environmental orientation, minimal use of sedatives, though not obvious, can significantly influence the recovery of the patient and cognitive fitness. Even in the most demanding situations, nurses, who are usually the most steady constant in the immediate environment with a person, act as one of the most significant advocates of such humane treatment.

All in all, the experiences of the COVID-19 pandemic cannot be lost on the future standards of critical care. Delirium is not an inevitable when a patient is acutely ill-it can be prevented and treated when handled with attention care and clinical know-how. The improvements in resistance enhancement to the dangers of the disease to the patients and the providers can be achieved through the confirmation of the integration of evidence-based practices and the individualization of the nursing care by the health systems, preparing ICUs not only to cure life-threatening diseases, but to serve holistic healing.

Acknowledgement: Nil

Conflicts of interest

The authors have no conflicts of interest to declare

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