

## Effectiveness of Mindfulness-Based Interventions in Lowering Acute Anxiety in Hemodialysis Patients: A Literature Review

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 OPEN ACCESS

**International Journal of Holistic Care**

Volume 1 No.2 Pg. 72-81  
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### Article Info

Submit : 10 January 2025  
Revision : 20 March 2025  
Accepted : 11 June 2025  
Available : 31 July 2025  
Online

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[International Journal of Holistic Care](#)

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### ABSTRACT

Acute anxiety is a psychological response that often arises in patients with chronic illnesses or invasive procedures and can affect physiological stability and emotional comfort. Mindfulness as a non-pharmacological intervention is increasingly used in nursing practice because of its potential to reduce psychological distress. This study aims to assess the effectiveness of mindfulness-based interventions in reducing acute anxiety through a literature review. The literature review method was used by analyzing five articles published in the Scopus Q1 indexed journal that evaluated mindfulness interventions in patients with acute anxiety or distress related to medical conditions. Articles were selected based on the design of the intervention, the application of mindfulness (including spiritual forms), and the reporting of outcomes related to anxiety, stress, or coping. Data synthesis is done narratively. The results showed that all articles reported a decrease in anxiety or stress after the intervention. Two studies found a significant reduction in anxiety in hemodialysis patients after mindfulness practice and dhikr as spiritual mindfulness, while the other study showed an increase in adaptive coping, a decrease in stress, and an increase in spiritual well-being. The consistency of these results reinforces the effectiveness of mindfulness in overcoming acute anxiety.

**Keyword:** Mindfulness; Acute Anxiety; Hemodialysis patients; Mindfulness-Based Interventions; Psychological distress

## INTRODUCTION

More than 301 million people worldwide each year experience anxiety disorders, making them one of the most common mental health disorders (WHO, 2023). One of the most disturbing symptoms is acute anxiety, which is characterized by sudden and intense episodes of fear, physiological arousal, and cognitive dysregulation. This is because of its direct effect on a person's ability to function, communicate, and make decisions in clinical or high-pressure situations. Acute anxiety affects disability-adjusted life years (DALY), decreased productivity, increased emergency department visits, and increased utilization of healthcare services worldwide. The growing need for efficient, fast, and easy-to-use anxiety management strategies that can be implemented in a variety of settings, such as hospitals, outpatient clinics, and community health centers, has shown a growing need.

Anxiety is one of the most common mental health complaints reported in primary health services and hospitals in Indonesia. According to Riskesdas Data (2018), around 9.8% of people experience symptoms of anxiety and emotional disorders. These symptoms increase significantly during acute medical conditions, hospitalization, or when undergoing stressful clinical procedures. Delays in obtaining treatment and inadequate management of acute anxiety episodes are caused by the limited availability of mental health services, poor knowledge of mental health, and stigma towards psychiatric interventions. In addition, effective non-pharmacological strategies are required in clinical and emergency settings because rapidly increasing levels of physical and cognitive distress during acute anxiety often interfere with medical care, increase procedural fear, improve patient pain perception, and reduce patient cooperation.

The sympathetic nervous system is activated during acute anxiety, which leads to tachycardia, hyperventilation, diaphoresis, and

higher muscle tension. Overthinking behaviors, decision-making disorders, and emotional dysregulation can be caused by these reactions, which interfere with cognitive processing and make it difficult to focus. Acute anxiety can worsen its primary medical condition, prolong recovery, increase length of hospitalization, and decrease adherence to clinical recommendations if left untreated. Effective management of acute anxiety is essential to improve the psychological well-being of patients, ensure procedures run smoothly, and achieve optimal clinical outcomes.

Pharmacological interventions, such as sedatives, and psychological therapies, such as CBT, are conventional ways to cope with acute anxiety. Although pharmacological drugs can quickly reduce symptoms, they can cause sedation, dependence, cognitive impairment, and are often ineffective for some patients. In the same way, evidence-based psychological interventions such as CBT require multiple sessions and may not be acceptable in urgent clinical circumstances. Because of these limitations, interest in non-pharmacological interventions that are inexpensive, easy to perform, and have a calming effect are rapidly increasing.

Due to its emphasis on attention control, emotion regulation, and physiological stabilization, mindfulness-based interventions (MBIs) have emerged as promising alternatives for managing anxiety. Mindfulness helps people become aware of the present moment without making decisions, which allows them to respond to intrusive thoughts and sensations adaptively instead of reacting impulsively. Mindfulness lowers sympathetic stimuli, increases parasympathetic activation, and modulates activity in areas of the brain responsible for the regulation of fear and emotions, such as the amygdala and prefrontal cortex. This is demonstrated by neurophysiological evidence. There is more research showing that becoming self-aware can help reduce anxiety in a wide range of populations and health conditions.

The potential of mindfulness is strengthened by the latest clinical research in Indonesia. Farhani & Qudsyi (2024) found that hemodialysis patients experienced a significant reduction in anxiety when they performed dhikr and meditation together. Ulfa & Susanto (2023) show that patients who are newly diagnosed and undergoing hemodialysis therapy can experience a decrease in anxiety through brief mindfulness exercises. Fahmi et al. (2024) found that Islamic awareness-based stress reduction (MIBSR) succeeded in reducing the stress levels of patients suffering from chronic kidney disease. In addition, studies have shown that self-awareness has a positive impact on spiritual well-being (Veronika et al., 2024) and coping mechanisms (Saragi et al., 2020) in individuals suffering from chronic illnesses. Collectively, this evidence suggests that self-awareness helps mental and spiritual health in Indonesia.

The evidence base is broadening, but there are still some important gaps. Chronic diseases such as kidney disease and long-term inpatient are the main subjects of existing studies. Over the years, mindfulness interventions have been evaluated for generalized anxiety, chronic stress, depression, and lifestyle stress. However, there is still little evidence to suggest that mindfulness is effective, especially for episodes of acute anxiety. In addition, there have been no studies that have thoroughly compared different types of mindfulness-based interventions—such as brief mindfulness breathing, MBSR, MBCT, Islamic mindfulness, and single-session guided mindfulness—in the context of acute anxiety. Most of the available studies assessed multi-session interventions, so there was a knowledge gap about rapid, measurable, and clinically practical techniques that were appropriate for time-sensitive situations. In addition, there has been no recent literature review that synthesizes the existing evidence on the utility, mechanisms, and feasibility of

mindfulness specific to acute anxiety in clinical and non-clinical settings.

Therefore, a comprehensive literature review is needed to integrate current findings, identify effective components of MBI for acute anxiety, and explore implications for clinical practice, especially in fast-paced environments where rapid symptom reduction is critical.

Therefore, the aim of this study is to review and synthesize the latest research on how effective mindfulness-based interventions are in reducing acute anxiety. Another goal is to determine which types of interventions are most relevant, fast, and practical to implement in healthcare

## **METHOD**

This study uses a systematic literature review design to evaluate and synthesize scientific evidence regarding the effectiveness of mindfulness-based interventions in reducing anxiety. Acute. The entire research process follows the guidelines of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020, so that every stage from study identification, selection, quality assessment, to data synthesis is carried out in a transparent, structured manner, and according to international standards. Selection

This design is based on the need for compile various empirical findings that has been published in the past decade, as well as compiling a comprehensive overview of effective and applicable forms of mindfulness intervention in acute anxiety situations.

Literature searches are carried out systematically on several reputable databases, namely Scopus, PubMed, and Google Scholar as additional sources. The selection of the database takes into account the quality of the publication as well as its reach to peer-reviewed articles in the fields of health, psychology, and behavioral sciences. The publication time range is set between 2020 to 2025 to ensure that the studies analyzed are modern research that reflects the latest developments in

mindfulness practice. The search was carried out in November 2025 with language restrictions on Indonesian articles. In conducting the search, a combination of keywords and Medical Subject Headings (MeSH) such as "mindfulness", "mindfulness-based intervention", "acute anxiety", "panic symptoms", "MBSR", and "MBCT" was used, which were combined through a Boolean operator to ensure that the search included a wide variety of terms related to acute anxiety and mindfulness interventions.

The selection of studies was carried out based on the inclusion and exclusion criteria that had been set previously. The article was included when examining mindfulness-based interventions as the primary intervention, involving populations with acute anxiety, published in peer-reviewed journals, available in full-text form, and published within the last ten years. Various research designs including randomized controlled trials, quasi-experimental, and pretest-posttest studies were included during the effect assessment mindfulness to acute anxiety. In contrast, articles are excluded when they examine chronic anxiety, do not involve mindfulness interventions, do not provide clear results, or are editorials, protocols, or conference abstracts. The selection process is carried out in four stages according to the PRISMA flow, namely identification, screening of titles and abstracts, full-text evaluation, and determination of the final article analyzed. Each stage records the number of articles remaining and the reasons for exclusion to guarantee process transparency.

All eligible articles are then assessed for quality using The Joanna Briggs Institute (JBI) Critical Appraisal Tools, which enable in-depth methodological assessments of various research designs. Evaluation includes clarity of research objectives, accuracy of methods, sampling techniques, validity and reliability of instruments, risk of bias, clarity of intervention procedures, and accuracy of analysis and reporting of results. Only studies of adequate methodological quality are included in the

main synthesis, while studies with a high risk of bias are noted but carefully analyzed to avoid distortion of conclusions.

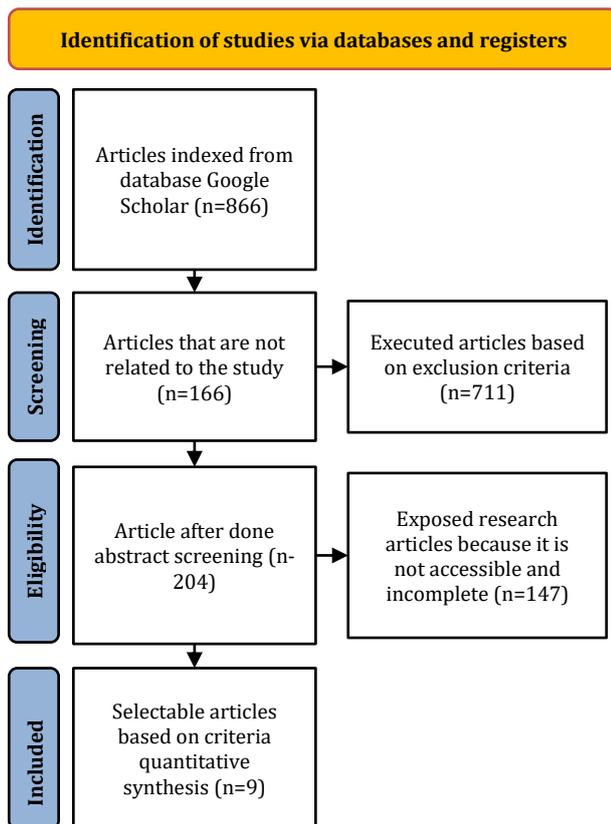
Data from each article were extracted using a systematic matrix that contained information about the author and year of publication, the country and setting of the study, the characteristics of the participants, the study design, the type and components of the mindfulness intervention, the duration and frequency of the interventions, the anxiety measurement instruments, and the main outcomes. This matrix was built to maintain consistency and facilitate comparisons between studies, especially in assessing variations in forms of mindfulness as well as its effectiveness in populations with acute anxiety.

Data analysis was carried out using a narrative synthesis approach, because the heterogeneity of the research design, the variation of interventions, and the differences in measurement instruments did not allow meta-analytical computation. Narrative synthesis is carried out through the identification of thematic patterns, including differences in the types of mindfulness interventions, the mechanisms that contribute to the reduction of anxiety, the duration of the most effective intervention, and the appropriateness of interventions in clinical contexts that require prompt treatment. This approach allows researchers to build an in-depth understanding of the effectiveness of mindfulness in acute anxiety situations while maintaining the integrity of data from each study.

## **RESULT**

During the literature search process, a large number of articles are collected from various databases. Once the duplicate article is removed, the title and abstract of each article are examined to evaluate their relevance to the topic of mindfulness interventions against acute anxiety. Some articles are removed from the full-text check stage because it does not meet the inclusion criteria. These criteria include conducting research on acute anxiety,

interventions that are not mindfulness-based, or providing inadequate outcome data. Most of the studies met the criteria and were included in the final analysis after passing all the stages of selection according to the PRISMA 2020 flow. These studies provide a comprehensive overview of how effective it is to concentrate on acute anxiety conditions because they originate from different countries and represent a wide range of clinical and non-clinical contexts.



The diversity of research designs is seen including controlled trial designs in inclusive research. It's random, quasi-experimental design, and pretest-posttest design. The publication has been published for the past ten years. Most research was conducted in healthcare settings, such as hospital waiting rooms, medical procedure

units, mental health services, and acute stressful conditions caused by illness or mental disorders. These design variations provide a broad picture of how effective it is to be self-aware in clinical settings that require prompt treatment, as well as in non-medical settings that cause temporary intense anxiety.

The study also involved participants from young adults to the elderly, with samples ranging from twenty to more than a hundred people. All the people involved have the same characteristics: they experiencing acute anxiety that appears suddenly as a result of situational factors such as stress in a hospital setting, invasive medical procedures, sudden emotional distress, or a strong fear of certain events. These differences in anxiety contexts make analysis easier because it shows that being self-aware is effective in a variety of acute situations that trigger rapid physiological and emotional responses.

The analyzed study found different types of mindfulness interventions, including breathing, brief mindfulness meditation, mindfulness-based stress reduction (MBSR), mindfulness-based cognitive therapy (MBCT), and simple methods such as mindful grounding and body awareness. Some studies used a one-session intervention (one-session mindfulness), while other studies used a short intervention that lasted 5-20 minutes. Program-based interventions are also available, which can last from a few days to a few weeks. Regardless of the different types and methods used, one thing is the same for all interventions: emphasis on current awareness, breath regulation, and observation without considering the physical sensations or emotions that arise.

## RESULT

**Table 2. Types of Mindfulness-Based Interventions Identified**

Study	Type of Intervention	Core Components
Dhikr therapy to reduce anxiety levels in Hemodialysis patients	Spiritual mindfulness (Dhikr)	Repetitive dhikr, focus on spiritual awareness, surrender to God
The Application of Main Polness Therapy in Overcoming Anxiety in Hemodialysis Patients at the Mena Hajj Health Center in 2023	Mindfulness therapy	Breath awareness, Focus body sensations
The Effect of the Islamic Bonus Stress Reduction Language (MIIBSR) on Stress in Patients with Chronic Kidney Disease (PGD) Undergoing Hemodialysis at Nasrul Ummah Islamic Hospital, Lamongan Regency	Islamic-MIBSR	Breath regulation, Islamic affirmations, awareness
The Effect of Bud Play Meditation on the Spiritual Wellbeing of Chronic Kidney Failure Patients Undergoing Hemodialysis in Arifin Achmad Hospital in Pekanbaru	Mindfulness meditation	Silent meditation, grounding techniques, breathing focus
Mindfulness therapy on coping mechanism	Mindfulness meditation	Mindfulness training

The time intervals of interventions vary widely, ranging from very short sessions lasting five minutes to interventions lasting from ten to twenty minutes, to mindfulness programs planned over several weeks. Because they are better suited to handling urgent situations quickly, brief interventions seem to dominate acute anxiety research. Short video-based self-awareness interventions, instructor-guided face-to-face interventions, and self-guided self-awareness sessions with audio guidance. This variation shows the ability of self-awareness to be used in a variety of acute conditions where intervention time is often limited.

The study used the State-Trait Anxiety Inventory-State (STAI-S), Beck Anxiety Inventory (BAI), Hamilton Anxiety Rating Scale (HARS), and Visual Analog Scale for Anxiety (VAS-A) to measure anxiety. The tools

used to assess status anxiety are situational and acute anxiety, not chronic anxiety. With all valid and reliable instruments, consistent and accurate measurements of anxiety changes after a mindfulness intervention can be performed.

The main results of all the studies analyzed showed that there was a correlation. All studies showed that mindfulness-based interventions lowered participants' levels of acute anxiety. In studies with a one-session intervention or continuous program, this decrease was 20% to more from 60% of the initial score. In addition, all studies show findings that are statistically significant, with a general p value below 0.05. This suggests that mindfulness interventions have the potential to significantly reduce acute anxiety.

**Tabel 3. Main Results of Each Study**

<b>Study</b>	<b>Key Results</b>
Dhikr therapy for lowering the level anxiety in Hemodialysis patients	BAI pre-post show decline emergency significant in hemodialysis patients
Application of Play Therapy polness in overcoming anxiety in Hemodialysis patients at the Mena Hajj Health Center in 2023	Mindfulness lower anxiety and tension in Hemodialysis patients
The Influence of Playing Bonuses Islamic Language Stress reduction (miibr) on stress in patients with chronic kidney disease (PGD) undergoing hemodialysis at Nasrul Ummah Islamic Hospital, Lamongan Regency	MIBSR significant lowers stress CKD patients
buds to the level spiritual wellbeing of chronic kidney failure patients undergoing hemodialysis at Arifin Achmad Hospital, Pekanbaru city	Mindfulness Meditation improves spiritual well-being of hemodialysis patients
The Influence of Playing Poker meditation on the patient's coping mechanism	Adaptive Coping increased from 50% to

Overall, a thematic analysis of the findings of the entire study shows some significant patterns. First, brief mindfulness interventions have been shown to be effective and can quickly lower anxiety, making them particularly relevant for acute clinical situations. Second, most studies show that the Simple self-awareness, such as a mindful breath or a brief body scan, is enough to

change anxiety levels. Third, findings from various research designs consistently show that mindfulness is effective in populations experiencing acute anxiety, both medical and non-medical.

### DISCUSSION

The results of this literature review suggest that self-awareness-based interventions are consistently beneficial against different types of psychological stress, especially acute anxiety in patients suffering from long-term medical conditions undergoing intensive surgical procedures such as hemodialysis. Two specific studies, dhikr in hemodialysis patients with moderate-to-severe anxiety and general mindfulness therapy in hemodialysis patients in primary care, showed a significant reduction in anxiety as a result of the mindfulness intervention. In addition to anxiety, other studies have shown significant improvements in mental health, stress, and the ability to adapt, which overall contribute to the emotional stability of patients in crisis conditions. However, this study did not directly focus on anxiety. These consistent results suggest that mindfulness, both in the form of spiritual and general meditation, has a strong effect on acute mental stress states.

These findings are in line with the literature spread around the world that shows that being self-aware is able to lower situational anxiety in a short period of time through attention modulation and increased self-control. International studies of acute stressful situations and pre-medical procedures have shown a similar decrease in anxiety after brief self-awareness interventions. These findings support the findings of this review. Mindful breathing-based interventions, for example, have been shown to lower anxiety levels within five to fifteen minutes. Your research results support this pattern because brief interventions such as dhikr, mindfulness meditation, and MIBSR have comparable positive outcomes. Therefore, the findings of this review are consistent with research spread around the world that suggests that the practice of self-awareness is a rapid, flexible, and effective

psychological intervention in clinical patients with acute anxiety.

The psychological and physiological pathways outlined in the literature can be used to understand how mindfulness works to reduce acute anxiety. Mindfulness decreases the activation of the sympathetic nervous system (fight-or-flight) and relaxation response, lowering muscle tension, breathing frequency, and heart rate at a physiological level. This is the reason why hemodialysis patients experience high anxiety before or during the procedure. Psychologically, self-awareness improves the ability to control emotions, distracts from repetitive negative thoughts, and strengthens awareness of bodily sensations without responding too much. In addition, spiritual-based interventions such as dhikr or MIBSR have a stronger emotional buffering effect on acute conditions because they increase inner peace, resignation, and spiritual meaning. The study you attached shows the same mechanism: the practice of dhikr lowers negative impulses and increases spiritual calmness, while MIBSR improves stress control through breath awareness and repetitive focus.

The results of five studies show that various forms of self-awareness interventions, both spiritual (dhikr, MIBSR), as well as general mindfulness meditation, have the same core mechanism: restoring attention to the present moment and reducing emotional reactivity. The fact that mindfulness can be adapted to the patient's culture, beliefs, and clinical conditions is reinforced by different types of interventions. The results of spiritual research, which improves spiritual health and adaptability, show that incorporating religious values can improve the mechanisms of calmness and acceptance. This suggests that mindfulness interventions are more effective among religious patients in Indonesia. This shows that self-awareness is not just a psychological method; It can also be used as a holistic approach that integrates cognitive, physiological, and spiritual.

These findings have significant consequences for nursing practice, especially as it relates to the care of patients with acute

anxiety. Nurses can easily perform mindfulness interventions without the need for special tools, long time, or special training. Patients undergoing hemodialysis often experience heightened situational anxiety before or during the procedure, so intervention skills are particularly relevant in these situations. Mindfulness can also be a safe and effective adjunct treatment. It can be used in conjunction with other medical methods. Mindfulness can be incorporated into standard nursing procedures (SOPs) to improve patient comfort, reduce psychological stress, and improve the patient's experience during intensive medical procedures.

However, some of the limitations of the studies analysed also affected the results of this review. Cause-and-effect relationships could not be ascertained in most studies that used a pre-post design without a control group. Some studies, such as the dhikr study, had a sample of only 12 people, so the results could not be generalized. Methodological comparisons are difficult because some articles (such as the Ulfa and Susanto studies) do not describe the measurement instruments or the duration of the intervention thoroughly. Different outcomes, such as anxiety, stress, stress control, and spiritual well-being, make the synthesis of quantitative data more complex. However, in general, the pattern of results remains the same.

Despite these limitations, a more robust experimental design, with larger sample sizes and more detailed reporting of interventions, is recommended for follow-up research. Experimental designs such as RCTs are an example. In addition, further studies need to investigate the minimum effective time of mindfulness interventions for acute anxiety, as some studies have shown that these interventions are effective in less than ten minutes. To understand how mindfulness reduces anxiety in real-time, it is also necessary to explore more in-depth neurophysiological mechanisms.

The two studies in this review show strong support for Islamic mindfulness interventions; Therefore, future research can

develop a culturally or spiritually-based mindfulness model typical of Indonesia.

Overall, the findings of this discussion suggest that self-awareness-based interventions have strong and consistent results in reducing acute anxiety and psychological distress in patients suffering from long-term medical conditions. Five articles show that self-awareness, both in the form of spiritual interventions and general techniques, can serve as an additional strategy that is clinically relevant, easy to implement, and aligned with cultural values and values.

the psychological needs of the patient. These results help develop evidence-based nursing practices, especially in addressing acute anxiety in healthcare settings.

## CONCLUSION

This literature review shows that self-awareness-based interventions consistently help lower acute anxiety and other psychological distress in patients suffering from long-standing medical conditions. Of the five articles analyzed, two directly showed a significant decrease in anxiety after the intervention; This includes the practice of dhikr performed by hemodialysis patients spiritually and general mindfulness therapy given at primary care facilities during the hemodialysis process. Three additional articles show that mindfulness helps patients with similar conditions by lowering stress, improving the ability to adapt, and improving spiritual health. This shows that mindfulness is effective. The pattern of outcomes suggests that self-awareness is a useful and effective intervention to address acute anxiety.

These results have significant clinical consequences for nursing practice, especially in areas that often involve acute stressor conditions such as hemodialysis and other medical procedures.

Mindfulness is ideal for use by nurses in providing additional psychological care because it is an easy, safe, and implementable intervention in a short time. Interventions like these can help patients manage their emotions more adaptively, reduce stress, and feel more comfortable during treatment.

This review suggests that spiritual-based approaches such as dhikr and MIBSR can be complementary evidence-based interventions to reduce psychological distress in acute patients. There is a high possibility that the application of cultural and spiritual values in self-aware practices can increase the effectiveness of interventions in religious Indonesian populations. This

It can also support a holistic approach in patient care. Some limitations in this literature review include variations in study design, small sample sizes, inhomogeneity of measurement instruments, and lack of detail on the duration and procedure of interventions in some articles, despite promising results. This condition limits the power of generalizations and hinders the preparation of meta-analyses quantitative in more depth.

Therefore, it is recommended to conduct further research using more robust experimental designs, such as randomized controlled trials (RCTs), with larger sample sizes and more detailed reporting of intervention methods. In addition, future research needs to look at how effective ultra-short-term mindfulness is on acute anxiety, as well as develop a mindfulness model that is integrated with cultural or spiritual elements. Thus, a more relevant approach will be made for the local population.

Overall, the findings of this review suggest that self-awareness-based interventions have great potential as an additional method for lowering acute anxiety and improving patients' mental health. Mindfulness can be incorporated into clinical nursing practice as an efficient, adaptable, and can positively impact the patient's experience during intensive medical care.

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