Using the Mindfulness-Based Stress Reduction (MBSR) Program to help Manage Stress and Anxiety among the ICU Nurses

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Abstract

Purpose: This quality improvement project aimed to examine whether MBSR reduced ICU nurses' stress and anxiety. **Background:** Due to acute care demands, ICU nurses are stressed, which can harm their health and patient outcomes. Nurses' mental health and patient care depend on addressing this issue. **Methods:** The Quality improvement project incorporated a five-week MBSR training for ICU nurses. The VA Mindfulness App lead weekly mindfulness practices to reduce stress and anxiety. **Intervention:** MBSR increased awareness and reduced anxiety with guided mindfulness exercises. Nurses used the app to participate in organized and autonomous sessions. **Results:** Anxiety were measured before and after the intervention using GAD-7. ICU nurses' anxiety declined considerably after MBSR, indicating it lowered stress and anxiety. **Conclusions:** MBSR helped ICU nurses managed stress and anxiety and could be utilized elsewhere in other critical care settings. Low cost and accessibility made it a viable tool for nurse well-being and patient care option. To confirm these findings, further quality projects should be done by increasing the sample size and test the intervention in diverse healthcare settings.

Keywords: *ICU nurses, stress reduction, MBSR, VA mindfulness app, anxiety management*.

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Nurses working in various care settings have different experiences in their workplaces and interactions. Particularly, nurses working in critical care have experiences of anxiety and stress due to the high demands associated with the provision of care in settings such as the emergence department, high dependency units (HDU), and the intensive care unit (ICU), as stated by Zengin et al. (2020) and Yıldız (2023). According to the American Nurses Association (ANA), about 83% of nurses experience stress and anxiety about a possible risk for illness due to their workplace stress (Watson, 2023). While nurses require to function at the highest health level both physically and psychologically, the demands of patient acuity in the critical care settings result them into unavoidable stress and anxiety. The problem has intensified with the recent and current the changes in the provision of care in the critical care settings, for example, the rising number of senior patients with chronic illnesses and the COVID-19 pandemic (Tamrakar et al., 2023). These aspects depict a significant problem and issue that affects, disrupts, and contributes to failures in the delivery of patient care.

Working in intensive care units need to have a comprehensive understanding of anxiety and how to treat it in the ever-changing healthcare environment. In such a situation, anxiety may lead to the unpleasant feeling of fear and discomfort in both nurses and patients (Zengin et al., 2020). Anxiety is detrimental for patient care. In the ICU, managing anxiety is a widespread problem that requires attention. This is since ICU represents a high-risk zone where decisions are made on time, and patients have 24/7 surveillance. There are different types of anxiety that can be reflected as discomfort, fear and apprehension affecting nurses cognitively, emotionally and physiologically. Hence, it is essential for ICU nurses to understand the nature of anxiety and

learn how to treat patients with appropriate treatments. The ICU nurses need to manage complex stressors in their jobs, which may increase anxiety levels (Zengin et al., 2020). Assessing anxiety is critical for determining the health of nurses and patient outcomes. At the same time, the treatment of anxiety requires the balance between nurse resilience, mental health and patient care.

Causes of Anxiety in ICU Nurses

Such detailed insight into the anxiety of ICU nurses can assist in developing a focused approach to therapy. In this environment, work-related stress is one of the critical problems associated with such a hospital due to time pressure and unpredictability as often happens in an ICU. The pressure to act fast under emergency life-changing threats also adds more stress (Ahmad et al., 2022). Long working hours pushes the work-life balance in a negative direction. ICU nurses can suffer from a high level of stress associated with the complicated elements in the patient scenario and medical equipment (Ahmad et al., 2022). Furthermore, not having any management or peer support causes ICU nurses to become disenchanted and emotionally drained, which only aggravates their anxiety.

Effects of Anxiety on ICU Nurses' Mental Health

The effect of anxiety on nurses' mental health who work in ICUs is, however, complicated. Depression is triggered by persistent stress and vigilance from their work, leaving them feeling permanently sad and hopeless. Burnout or long-term anxiety is marked by emotional exhaustion, reduced personal accomplishments and depersonalization. All the mental and physical stress that comes with working in an ICU is only made worse by additional common symptoms of anxiety, like insomnia. While some nurses do this practice to enhance the

management of anxiety, taking medication comes with negative effects on health and work productivity.

Coping Mechanisms for ICU Nurses with Anxiety

ICU nurses deal with many challenges that make them anxious. Recognition and acknowledgment of these symptoms are vital steps to finding a remedy. Developing a program such as mindfulness may control mild to moderate anxiety. Professional treatment and psychological counselling should also be offered. This will help to establish a structured framework that would address the mental health needs of nurses. Breaks like breaks, hobbies can also help reduce anxiety along with a work-life balance. Peer support groups and mentoring programs can help in developing a community by sharing experiences and coping skills. Mindfulness and relaxation techniques can assist ICU nurses in stress control, which will increase their mental resilience.

Measure and Benchmark

To compare to best practices that practitioners may use while in their work is critical in effectively addressing the issue of anxiety among ICU nurses. The first measure would involve conducting a review of the available and functional anxiety management programs effective in other comparable healthcare environments. These are programs that help the practitioners overcome anxiety, for example, through organizational-based approaches. This benchmarking process will help to guarantee that the strategies used in the proposed resolution are upstanding and effective. Through comparing current programs, we can see how ICU nurses are left out in mental health support due to the unique challenges that they face. These problems can then be addressed using appropriate models that serve as guide frameworks. We will compare the self-care, activity, and mindfulness activities for nurses with current practices to determine what

areas need improvement. There is a need to be aware of the limitations in applying best practice solutions for anxiety management programs. The first challenge we will discuss is the lack of information and access to such plans. We will then deal with the second barrier which is psychological support and stigmatization of mental health. We will develop strategies to destigmatize mental health discourse and provide support to nurses. Lastly, we will review organizational policies to identify any hurdles that may impact the well-being of nurses. Based on our findings, we will recommend adjustments to policies to prioritize mental health in the company.

SWOT Analysis

The SWOT analysis has identified various critical factors that affect the proposed resolution. Recognizing resilient healthcare workers can be a good starting point for promoting a positive mental health intervention environment. Policies and procedures can reinforce this initiative and align with corporate standards. However, the lack of psychological support, stigma, and communication barriers highlight the need for change in crucial areas, emphasizing the necessity of comprehensive treatments. The analysis reveals that mental health awareness is increasing, which provides an opportunity to leverage a cultural shift for open communication and responsible mental health treatment. By aligning with the industry's focus on employee well-being, the project can stay current with healthcare trends. However, due to economic restrictions, it may be necessary to use cost-effective techniques and campaigns to obtain the resources needed to implement mental health programs.

Problem Identification

ICU nurses face anxiety due to tight schedules and heavy workload, as highlighted in a recent study by Ramírez-Elvira et al. (2021). This issue of anxiety is causing adverse effects both

to the nurses themselves and patient quality of care. It is the tough operating environment that makes it impossible for ICU nurses to keep up with high standards of medical care. It is characteristic that nurses often work in conditions which significantly influence the quality of care delivered.

Significance of the Problem

The betterment of the well-being in ICU nurses is vital to patient care, and one avenue that can be utilized toward this end is addressing anxiety. National identification of this problem underscores its serious nature in the health sector and demand for efficient treatment. There is a large gap between the current practices and recommended solutions that denote improvement opportunities. In this light, enhancing effectiveness in relieving anxiety among the ICU nurses is one of the significant steps towards improving their workplace and achieving higher care for patients.

Background of the Local Problem

The nurses working in the ICU such a frenzied and hectic environment tend to be very anxious. This often affects their mind and body as well as the quality of care they can offer to her patients. Thus, the mental health of nurses is necessarily an important concern for healthcare organizations as they are required to support and address their challenges with anxiety or other stressors.

The issue statement highlights the adverse effects that anxiety-based stress may have on ICU nurses' care quality provision to patients and can develop in years after. Long-term exposure to stress that is too high may lead to poor quality of care (Ramírez-Elvira et al., 2021). To solve this problem, methods using a SWOT analysis are suggested. This approach addresses

both anxiety symptoms and organizational factors underlying nursing stress, clearly demonstrating its multidimensional character.

Proposed Intervention

This problem calls for an intervention that would empower nurses with emotional intelligence to help them cope and deal with stresses and anxieties associated while working in the critical care settings. In this case, mindfulness may be used to control stress and anxiety for effective performance while working in ICU settings. Of importance, this treatment includes everyday exercises including yoga or being active; engaging with others such as patients and simply acknowledging present situations without judgment through meditation (Fumero et al., 2020). Penque (2019) represents how the MBSR Program can be considered as a specific intervention that can also form part of nursing resolution towards stress and anxiety in nurses. The program includes performing Hatha yoga exercises, meditation and an active social life to increase the promotion of mental and physical wellbeing. The intervention program lasts for four weeks, where every participant undergoes one weekly training that takes about 2.5 hours of their time. The subjects also perform daily program-focused activities and practices during weekly reporting. The program concludes with a retreat day that is supposed to serve as reflection on training and learning. In the terms of Penque (2019), MBSR concentrates on motivating participants to have a nonjudgmental and open confrontation with their situations, accept lived experiences as well as deliberately interacting with others and nature.

The MBSR program may help in promoting physical and psychological wellbeing of nurses working in the critical care settings such as the ICU. It may equip them with training on regular physical exercises, social and environmental connections, and prevent emotional disruption due to perceived focus on one’s present situation and experiences. In this light, this

project aims at introducing the MBSR training program and assessing its efficacy in enhancing the effective management of stress and anxiety among nurses working in the ICU.

Project Question

The question that guides this project reflects on the introduction and implementation of the MBSR training program. It specifies the population of interest as the nurses who work in the ICU. The question also focuses on the intervention selected, which is the MBSR program versus a commonly used practice. It indicates the outcomes of the intervention, and the aspects of time needed in the implementation.

Population: Nurses working in the ICU

Intervention: The Mindfulness-Based Stress Reduction (MBSR) Program

Comparison: Commonly used basic awareness creation

Outcome: Increased efficiency in managing stress and anxiety

Time: 4 weeks

PICOT Question: In nurses working in the ICU (**P**), can the use of the Mindfulness-Based Stress Reduction (MBSR) Program (**I**), compared to the commonly used basic awareness creation (**C**), lead to increased efficiency in managing stress and anxiety (**O**) in 4 weeks (**T**)?

This question helps in solving the identified clinical problem or issue of anxiety and stress that affects nurses and their ability to provide optimum care to the patients in the ICU. Through this focus, the project will target getting more specific and effective outcomes in managing stress and anxiety as opposed to the currently or previously used interventions. Research by Hofmeyer and Taylor (2021) notes that many healthcare organizations consider the creation of awareness an effective intervention to help nurses overcome stress and anxiety. This intervention focuses on having frank conversations about experiences and feelings that nurses

have regarding their practice involvement. It also focuses on using campaigns and programs to let nurses know that it is normal to experience stress and anxiety. It stresses on enforcing resilience through continuous practice involvement (Hofmeyer & Taylor, 2021). However, the changing aspects of healthcare due to the increase in aging population and occurrences like the Covid-19 pandemic present challenges associated with high level of stress and anxiety even among the long-serving and experienced nurses (Prasad et al., 2021; Tamrakar et al., 2023). In this light, having a more robust intervention with a multidimensional approach in activities and focus may help nurses overcome stress and anxiety even with the changing circumstances. The MBSR program is designed to have an open, nonjudgmental, and intentional approach towards overcoming stress and anxiety through physical exercises, connection with others and the environment, and meditation (Penque, 2019). Through the clinical it will be possible to analyze the program, compare its outcomes with those of the other interventions, and determine whether it promotes increased efficiency.

Search Methods

In this literature study, the MBSR Program is evaluated as a method to improve stress and anxiety management in critical care nurses. The main approach of the broad search method is a literature review, which covers several research methods and synthesizes their results to cover entire problem.

The contents of this literature review adopt a systematic search strategy to identify studies that measure the efficacy using MBSR Program for critical care nurses in lowering stress and anxiety. The mindfully chosen search terms, ‘Mindfulness-Based Stress Reduction,’ ‘Nurses,’ ‘Critical Care’ and the likes, are meant to locate papers associated with a planned DNP project. After reviewing PubMed, NIH Database and Google Scholar, 30 studies were identified.

This huge collection was narrowed down by the inclusion and exclusion criteria. The articles discussing English published mindfulness-based therapeutic interventions for healthcare workers that used MBSR or similar interventions during the last five years (2019-2024) were considered.

To reflect current practices in the healthcare setting, articles were chosen based on their relevancy and current nature. The titles and abstracts were analyzed critically. This allowed omitting the articles that missed the objective of DNP project. The methodological approach of selecting and analyzing 10 publications to be critically comprehensive, according to a rigorous procedure, reflected the research's importance in establishing the intended objectives encompassed in the proposed DNP project. The process of screening ensures inclusion of high quality, timely, relevant articles on stress management and reduction of anxiety in ICU nurses.

Review of Study Methods

The following literature analysis presents a broad spectrum of research techniques. It provides a description of the holistic view of mindfulness-based therapies in the healthcare industry, especially in critical nursing point of view. The scope includes several kinds of research methods including qualitative and quantitative lenses which represent a strong evidence base. Methods such as randomized controlled trials (RCTs) by Strauss et al. (2021) appeared among the most widely used types in the literature. Through this methodological choice, mindfulness intervention efficacy becomes strictly testable. It also forms the basis of causality measurement. The effect of mindfulness-based stress reduction is also found under the wide lens of systematic reviews and meta-analysis. Syntheses provide a more integrated picture that covers the findings from various studies, identifying patterns and trends that extend beyond individual findings.

Studies such as Tajnia et al. (2022) that are quasi-experimental and realist reviews by Micklitz et al. (2021) give greater insights into the external aspects contributing to mindfulness

programs success through contextual factors. This combination of research methods makes it possible to quantitatively and qualitatively analyze results and their processing. Data from exploratory qualitative studies, like in Chmielewski et al. (2020), can capture healthcare practitioners' life stories about using mindfulness therapies. Using a qualitative lens, this literature presented fuller knowledge of stress and anxiety management.

Review Synthesis

The reviewed literature demonstrates that mindfulness-based interventions, specifically the MBSR Program is effective in enhancing mental health of healthcare professionals especially critical care nurses. Several research works prove that MBSR decreases the level of depression, stress, anxiety and burnout while establishing resilience and self-compassion among healthcare professionals. Sulosaari et al. (2022), Strauss et al. (2021), and Kriakous et al. (2021) argued that mindfulness-based treatments help in reducing stress in healthcare providers. In addition, Chmielewski et al. (2020) includes a narrative dimension in the mindfulness treatments for healthcare professionals and medical education, where recordings from participants' subjective experiences were made.

Tajnia et al. (2019) demonstrates the effectiveness of mindfulness therapy's in improving life awareness, interpersonal issues and stress in ICU nurses especially Inquiry-Based Stress Reduction training. This complex investigation fits the subject of mindfulness therapies for critical care providers' particular concerns. The synthesis also highlights mindfulness-based programs' wider mental health benefits for healthcare practitioners. Selič-Zupančič et al. (2023), Santamaría-Peláez et al. (2021), and Ameli et al. (2020) demonstrate the favorable impact of mindfulness treatments on burnout and well-being. This data goes beyond stress reduction to

include tiredness relief, improved well-being, and increased resilience crucial in the face of extraordinary difficulties like the COVID-19 epidemic.

Theme Development

A wide range of publications tackle the issue of prevalence of stress and burnout among healthcare professionals, and those working in ICUs. The resulting studies have stemmed from the realization of the long-term effects of stress on the health and productivity of healthcare workers. There is potential of MBSR programs to serve as interventions addressing such issues. This discussion shall cover three main themes drawn from the analysis of ten relevant articles MBSR effectiveness, implementation issues in healthcare facilities, and the effects on depression and anxiety among healthcare professionals.

Effectiveness of MBSR in Healthcare Professionals

Mindfulness-based practices have various positive effects on healthcare professionals' psychological resilience. Kriakous et al. (2021) and Ameli et al. (2020) investigated whether mindfulness-based stress reduction may reduce healthcare workers' stress. These studies found that mindfulness-based stress reduction reduces stress, anxiety, and depression and increases mindfulness and self-compassion. Strauss et al. (2021) research conducted with 234 healthcare workers in the South of England assessed if mindfulness-based cognitive therapy reduced healthcare workers' stress. The researchers found that mindfulness-based cognitive treatment significantly reduced healthcare professional stress.

Moreover, Adinda and Bintari (2020) investigated whether mindfulness-based stress reduction decreased professional caregiver fatigue. Mindfulness-based stress reduction was essential and there was a positive trend of improvement. This suggested that MBSR might help reduce burnout among professional caregivers. However, burnout reduction was not statistically

significant. So, further research is needed to create individualized therapies for healthcare providers and understand how mindfulness-based stress reduction affects burnout in caregiving contexts.

In general, Kriakous et al. (2021) and Ameli, et al. (2020) proposed that mindfulness-based stress reduction may improve mental health outcomes in healthcare providers. The mindfulness-based stress reduction technique may be beneficial in case of stress, anxiety, or depression in terms of managing symptoms. Through MBSR, individuals may improve resilience, reduce work stress and promote self-compassion and awareness, all of which are important to stress and anxiety management. Adinda and Bintari (2020) revealed MBSR as a promising intervention for improving burnout in occupational caregivers. As a result, this intervention can decrease feelings of depersonalization while increasing feelings of personal accomplishment. Nevertheless, additional research is needed to include initial screening as it is an important step before recruiting participants because this will enhance accuracy of data collected during data collection process.

Implementation and Challenges of Mindfulness in Healthcare Settings

Chmielewski et al. (2020) conducted a thorough literature review on using mindfulness practices to address stress and burnout among medical students and healthcare personnel. The study focused on the MBSR intervention. This study reported enhanced mood perception and lowered stress. However, it had a limited sample size and high dropout rate. After considering these results, it is evident that further research and techniques are needed to overcome the limitations of implementing these solutions.

Macklitz et al. (2021) found that participant-supportive environments help mindfulness-based programs succeed. Mindfulness programs may help healthcare workers to practice self-

care in their settings. This is essential for programs to realize their full potential and fulfill their original aims. This shows how important organizational culture is in creating an atmosphere where healthcare staff may embrace and maintain mindfulness practices.

Selič-Zupančič et al. (2023) examined mindfulness-centered psychological therapy designed for healthcare practitioners. They highlighted its positive benefits on well-being and burnout reduction. Despite this, they agreed that further study and adequate protocols were needed to assess mindfulness interventions in hospital settings. Mindfulness therapies improve healthcare worker well-being and reduce burnout, but they are difficult to administer. Even if these treatments work, this is the scenario. To maximize mindfulness's benefits for healthcare practitioners, limited sample sizes, high attrition rates, and a supportive corporate environment must be addressed. This is required to achieve the most possible impact. Further study and cooperation between academics, practitioners, and healthcare executives are needed to address these implementation challenges and spread mindfulness throughout the sector.

MBSR Impact on Depression and Anxiety in Healthcare Professionals

Santamaría-Peláez et al., (2021) performed a randomized, controlled clinical investigation, examining the validity of a traditional and shortened mindfulness-based stress reduction program. According to the study, the general training program has several positive impacts on anxiety and sadness. The study found that mindfulness-based stress reduction training may help healthcare personnel with mental health issues. Sulosaari et al. (2022) extensively studied whether mindfulness-based interventions improved the psychological well-being of nurses. This research found that these interventions improved many psychological well-being scores. These include stress, depression, anxiety, and burnout, suggesting that mindfulness-based practices might help nurses build mental health resilience and reduce the negative effects of

occupational demands. Tajnia et al. (2019) examined critical care unit nurses and showed that MBSR improves interpersonal skills and mortality awareness in critical care unit nurses. Because of this, customized treatment is needed to meet the psychological and emotional needs of intensive care unit nurses. Overall, these studies found that mindfulness-based interventions like MBSR reduce depression and anxiety among healthcare professionals.

Summary

The literature consistently supports the effectiveness of MBSR in decreasing stress, anxiety, and depression among healthcare professionals. However, implementing mindfulness in healthcare settings is challenging. Therefore, healthcare settings must provide a supportive environment to achieve the best possible outcomes. These findings cumulatively suggest the potential of mindfulness interventions in enhancing mental wellbeing among healthcare professionals and inform developmental needs for future studies and programs. They also show the need for further research and program development to address the unique needs and challenges within healthcare settings or environments. Overall, prioritizing mindfulness in healthcare environments has the potential to significantly enhance the resilience and overall quality of life for healthcare professionals, ultimately benefiting both the workforce and the patients they serve.

This literature review proposal carefully tackles search strategies, research methods, results synthesis, and theme creation. Methodologies carefully selected confirm the research' relevance and dependability to the DNP project's aims. The DNP project is well-supported by the synthesis's engaging story of mindfulness-based therapies improving critical care nurses' mental health. Topic creation, quality gap concerns, contextual data, and administrative assistance enrich the literature study. Due to healthcare's real-world complexity, the proposal's

contemplative tone encourages careful implementation timetables and administrative cooperation.

Project Aim

Due to emotional weariness from their line of work, nurses are frequently exposed to anxiety (Mathew & Mathew, 2023). Engaging in mindfulness practices can assist critical care nurses (CCNs) manage their emotions and anxiety more effectively, improving their general wellbeing. According to Sasidharan and Dhillon (2021), over 33 percent of CCNs are exposed to stress and burnout due to regular working conditions, which puts them at risk for anxiety. The evidence-based practice project aims to address the deficit of limited interventions to prevent anxiety among nurses.

This DNP project aims to implement the mindfulness-based stress reduction (MBSR) program to reduce anxiety levels among nurses working in critical care units and improve their wellbeing. Aiming to decrease stress and anxiety levels among ICU nurses by equipping them with tools and techniques for managing their mental and physical well-being over a four-week program; in the hope of building their resilience and coping abilities. This quality project aims to create a supportive and nurturing work environment within the ICU, promoting teamwork, communication, and mutual support among healthcare professionals while improving patient satisfaction and quality of care by ensuring that ICU nurses are equipped to provide compassionate and competent care while striving and thriving well in a high-stress environment.

Project Objectives

To achieve the above aim, this DNP project will have to meet the following specific objectives:

1. Implementing an evidence based MBSR protocol over a period of four weeks, to guide the use of mindfulness as a strategy to reduce anxiety among critical care nurses.
2. Administer pre/post surveys to all participating nurses, utilizing the GAD-7 scale to measure changes in stress and anxiety levels before and after the four weeks program.
3. Assess the program's impact on patient satisfaction by reviewing patient satisfaction surveys before and after the implementation of mindfulness to decrease anxiety in nurses working in the critical care setting over a period of four weeks.

Implementation Framework: IOWA Model

Background of IOWA Model

IOWA Model was first developed at the University of Iowa Hospitals and Clinics in 1990s with the aim of guiding nurses in the use of research to improve patient care. This model has been widely utilized in nursing and healthcare contexts to advance evidence-based practice. It offers a systematic approach for the adoption of new practices that are founded on the best available evidence. Beyond nursing, the IOWA mode has been utilized in disciplines like social work and education to advance evidence-based practice.

Cabarrus College of Health Sciences Library (2024) outlines the eight steps involved in the IOWA model, namely, identification of the triggering issues, setting a plan to address the issue by formulating objectives, determining the urgency of the issue, forming a team, synthesizing the evidence, piloting change, evaluating the appropriateness of adaptation into change, and dissemination of information for utilization (Cabarrus College of Health Sciences Library, 2024). This process is evidence-based driven, and it entails applying research findings and expertise to determine the appropriateness of decisions at each step. The IOWA model can be divided into two sections: project problem and project intervention discussed below:

Project Problem

The problems of anxiety among nurses can lead to burnout and emotional exhaustion which can impact the nurses' daily lives in many ways including their social and professional wellbeing. One of the IOWA theory's key components is the collaboration, which emphasizes the need for nurses to come together to implement an intervention for the collective benefit (Cullen et al., 2022). The theory suggests that a lack of cooperation and teamwork among nurses could exacerbate their anxiety-related conditions. According to Riegel et al. (2021), nurses have self-care potential and abilities, yet they constantly lack clear guidelines on how to utilize them. Considering that they are trained to provide care for their patients, particularly in a critical setting, this implies their own ability to apply different interventions to their own well-being. There is a need for viable interventions to help nurses, in the critical care settings, understand the use of mindfulness as a tool to reduce anxiety. As such, the IOWA model affirms the presence of challenges that can lead to anxiety among nurses working in the critical care settings and pinpoints the effect of such implications on nursing quality of care.

Project Intervention

The IOWA theory supports the need for a viable intervention to reduce mental health challenges, in the critical care settings. The theory highlights the critical role of nursing collaboration as a viable intervention to address the problem of anxiety among nurses. Using this theory, nurses can learn new strategies, and personal health choices.

Application of IOWA Model to the Project

The IOWA model applies to MSRB EBP project protocol for anxiety reduction in ICU nurses based on the following steps: The IOWA model implements a stepwise process of

introducing evidence-based changes in clinical practice (Titler et al., 2001). The Iowa model includes eight steps that give direction to practitioners in making evidence-based decisions.

Identification of Triggering Issues/Opportunities

The trigger for the change should be identified, and whether it is a knowledge-oriented or problem-oriented one. Contributing factors may include limited support, inadequate staffing, and high patient loads, leading to generally challenging work setting (Yoo et al., 2020). During this step, the change trigger, that in this case is high levels of stress and anxiety among the ICU nurses will be determined through a SWAT analysis. Such a trigger will create the need for evidence-based interventions designed to uplift the health and well-being of nurses hence the mindfulness MSBR project which will ultimately result in better patient care (Titler et al., 2001).

Statement of the Question/Purpose

A question/purpose statement is developed to articulate the specific problem being addressed (Titler et al., 2001). An inquiry that could serve as a foundation for the suggested intervention is the following: To what extent can nurses utilize mindfulness to ameliorate anxiety, enhance self-efficacy, and promote general well-being while carrying out their occupational responsibilities? By applying this theory to investigate the research question, it becomes feasible to identify a series of activities that can assist in mitigating the negative consequences of anxiety among nurses. This can be achieved by utilizing an evidence-based practice model to identify resolutions for the trigger issues.

Topic Priority

This step involves the determination of whether the identified trigger is a priority for the organization (Titler et al., 2001). Due to the adverse impact of stress and anxiety on both nurses' well-being and the quality of patient care in the ICU, it is possible that addressing this issue will

be placed among the top priorities of the ICU department. Addressing nurse's anxiety is a priority to enhance job satisfaction, ensure professional competence, and achieve personal goals. As such, improving their effectiveness at work would yield multiple other benefits, including enhanced teamwork and quality professional outcomes. Additionally, patients who receive care from providers who are mentally healthy are more likely to receive superior healthcare services than those who are attended to or treated by nurses who are mentally unhealthy. Mindfulness can be used as a preventive and regulative strategy for anxiety, which is cost-effective the long run and the short run. A lack of implementation time which will impact the nurse's performance, leading to a heavier burden for employers to manage and restore the health. Therefore, decreasing anxiety through mindfulness should be prioritized to ensure better health outcomes for both patients and nurses.

Forming a Project Team

This includes bringing together members who will develop, evaluate, and implement the evidence-based practice change (Titler et al., 2001). This project requires the involvement of a multidisciplinary team. This requirement is emphasized by Flaubert et al. (2021), arguing that the collaboration between frontline staff, nurse managers, and nurse educators is essential to develop an evidence-based intervention tailored to address the pressing issues that nurses face at the workplace. Managing anxiety will require a multi-disciplinary approach. This includes bringing together members who will develop, evaluate, and implement evidence-based practice changes. This team should be composed of members like representatives from within the organization such as nurse educators and hospital administrators and a mindfulness practitioner to ensure a comprehensive and interdisciplinary approach. The IOWA model supports this approach since it entails the use of expertise and the use of evidence-based practice to address anxiety. In this

project, the team will include ICU nurses, nurse educators, administrators, and perhaps external experts of mindfulness-based interventions.

Synthesis of the Evidence

This step focuses on gathering and analyzing research, and this involves crafting a research question using the PICOT method and conducting a literature search (Titler et al., 2001). The existing literature review supports the utilization of mindfulness as a method to alleviate anxiety among healthcare professionals, including nurses. According to Burner and Spadaro (2023), practicing mindfulness and self-care skills positively impacts the overall well-being of nurses, including their professional competence and mental health. There is enough evidence-based practice based on the literature review which supports the implementation of mindfulness as a tool to help nurses reduce their anxiety in the critical care setting and drive practice change. Evidence from the project site will include quantitative data on nurses' anxiety levels before and after implementing mindfulness interventions and, interviews and focus groups will be performed to collect qualitative data on the perceptions and experiences of nurses regarding anxiety. Moreover, evidence on outcome measures associated with well-being and job performance, adherence rates, patient outcomes, cost-effectiveness, and staff feedback, will be collected.

Piloting a Change

If there is enough research, this step is intended to implement the change into a pilot program (Titler et al., 2001). Piloting change would require the involvement of nurses from critical care settings such as the intensive care unit. The program will be done in the family lounge on the unit during the change of shifts. Using pre-assessment forms and GAD-7 forms, nurses will be screened to assess their knowledge of anxiety and rate their level, followed by a

quick education session to be provided on anxiety and the effects of mindfulness on anxiety by a nurse educator. The mindfulness practitioner will lead the mindfulness session and re-evaluate at the end of the session using GAD -7 and post surveys. According to Davidson et al. (2020), the role of pilot programs is to test feasibility, adjust protocols, and collect preliminary data to guide the final interventions. The outcomes could be used to make a tentative conclusion about the role of mindfulness in reducing anxiety among nurses working in critical care units.

Evaluation of the Adoption into Practice

This step involves evaluating the pilot program's results to find out if the change is feasible and brings any improved outcomes (Titler et al., 2001). If the change is deemed a success, it can be introduced across the department, unit, practice or organization. Evaluation will be conducted in terms of the program's impact on nurses who are participants in the initiative as far as the reduction of stress and anxiety levels are concerned. The assessment would take the shape of pre- and post-programming surveys, for instance GAD-7, to measure the changes in stress and anxiety. Besides, one can measure the contribution of the program to absenteeism reduction using job satisfaction surveys that are reported by individuals with Likert scale scoring. If the pilot study is successful, the MBSR Program can be widely implemented in the ICU department. This will raise the well-being of the nurses and may result in better patient care. The Iowa Model will act as the roadmap throughout the implementation period to ensure that the project's intervention remains evidence-based and aimed towards patient care improvement through ICU nurses' well-being.

Dissemination

This step involves sharing the project's results and findings with relevant stakeholders, such as healthcare professionals, administrators, policymakers, and patients (Titler et al., 2001).

Through the publication of intervention results in educational materials such as reports and publications, the results of the intervention could be greater widely known. In addition, to distribute the results of the interventions, workshops and training sessions might be coordinated. Finally, information about mindfulness intervention could be disseminated through the stakeholders involved in the project.

High anxiety levels among nurses in critical care settings present a quality improvement gap that should be addressed using evidence-based practice. The MBSR protocol is based on the effectiveness of mindfulness as a strategy to reduce anxiety and improve overall well-being among nurses to improve their professional and personal lives. The IOWA Model can be used as a theoretical framework to guide the implementation process and the utilization of the project outcomes. The IOWA model applies to both the problem and the intervention.

Population of Interest

Population: Nurses

Charge nurses, nurse supervisors, and a nurse educator oversee the unit and are accountable for coordinating the activities. The nurse educator is responsible for ensuring that personnel from the critical care unit have access to professional growth and training opportunities. The quality improvement project will target critical care nurses who are currently working in the Intensive care unit. All the nurses who are actively working in the ICU will be able to participate in the mindfulness-based program. Critical care nurses employed in the intensive care unit of the designated hospital, irrespective of their gender, age, or educational attainment, are eligible for consideration. In addition, anyone interested in taking part of the program must demonstrate that they are proficient in the English language and possess the professional qualification of being registered nurses (RNs). In addition to this, they are required

to be involved in the process of delivering direct treatment to patients. The therapy and data collecting will take place in English. Non-nursing personnel and nurses not assigned to the critical care unit will be excluded.

For patients to get optimal care, the critical care unit is staffed with nurses who work around the clock. This critical care unit has experienced understaffing due to the current nursing shortage. The hospital's critical care staff is comprised of sixty-two nurses, and due to the nursing shortage, the hospital also uses a revolving amount of travel nurses. In an ideal world, staffing levels would be determined by the severity of the patient's illness and the understanding of the facility's population. The critical care unit adheres to established protocols and standards of care to guarantee uniformity in the treatment of patients and to ensure that best practices guidelines are followed. When it comes to providing high-quality care to patients who are severely sick, these protocols serve as a guide for the nursing team so that they can provide optimum and quality care services.

Indirect Population: Patients

Patients receiving treatment from nurses engaged in mindfulness therapies are the indirect population. According to Melnyk et al. (2021), patients will benefit from continued quality improvement initiatives. The findings revealed that nurses' levels of anxiety can have a substantial impact on the care they deliver to their patients as well as their health outcomes (Brown & Ryan, 2003). The project aims to indirectly improve the quality of patient care. Through the introduction of the MBSR program and its ability to improve the psychological wellbeing of the nurse practitioners, as indicated by Brown and Ryan (2003), the project will enhance the improvement in the care delivery and care quality by enabling the ICU nurses to perform optimally without the limiting factors of stress and anxiety. Patients in need of intensive

care services come from various genders, ages, and health issues, make up the indirect patient population.

Setting

The hospital is in the heart of Brooklyn, New York, and has a capacity of 450 patients. A CEO and a VP of nursing oversee its operation. The critical care unit, composed of twenty beds, is managed by a nurse manager and supervised by a director of nursing; she is responsible for the operations of the critical care unit at the hospital. The critical care unit comprises 20 beds and serves various medically and surgically ill patients. The critical care unit must adhere to a predetermined budget to cover the costs of labor, equipment, and patient care. Due to financial restrictions, there may be limitations placed on implementing initiatives or the distribution of resources for the project.

Stakeholders

Nurse Managers are essential in helping to facilitate the involvement of nurses in the mindfulness program. They can also contribute time and resources for instructional sessions and project execution. In addition, the director of nursing, oversees nursing practice for the critical care unit within the facility, has granted permission to carry out the project. Starting and carrying out the project while ensuring that it is consistent with the organization's aims and standards necessitates her authorization and support.

Nurse educators are responsible for staff training and professional development. Their participation is required to offer information and ensure that the mindfulness training program is carried out properly. Critical care nurses, who will be directly involved in the mindfulness training, are the most crucial stakeholders. Their participation and suggestions are welcomed in determining how to enhance implementation strategies and the effectiveness of the program.

With the help of a patient safety committee, it is feasible to assess the impact of the mindfulness intervention on the quality of care delivered to patients. In this way, concerns about the patient's safety are aligned with the intervention.

Interventions

The program will take place over a period of 5 weeks. Throughout this time, there will be different activities undertaken by various members of the project team, including project planning, team formation, allocation of resources, and the implementation of the program. Mainly, the intervention that will be introduced is the Mindfulness-Based Stress Reduction (MBSR) program. This intervention will have an aim of enabling nurses working in acute care settings to manage their stress and anxiety levels through adopting mindfulness strategies. The MBSR program will involve weekly meetings for a period of four weeks. These meetings will allow for the discussion and practice of mindfulness exercises using the VA Mindfulness App. The meetings and the entire program will be facilitated by the DNP student as the initiator of the project. Other important team members will include a nurse educator, a nurse manager, and an MBSR instructor. The main activities in the support group during the program will include having discussions on the main points of mindfulness. The activities will also include engaging in mindfulness exercises together with the nurse participants as a way of introducing them to the intervention so that they can adopt and use it regularly in their practice involvement. There will also be a commitment to use the VA Mindfulness App. The app has 14 levels of usage which will guide the participants in the mindfulness exercise practice 3 times a week.

With the guidance of the leadership team, the group will cultivate a culture of mindfulness practices with the aim of reducing stress and anxiety while also promoting individual wellbeing for effective participation in practice in the acute care settings which may

be more pressurizing and demanding for the practitioners. The intervention will involve reaching out to the nurse participants through Zoom meetings. These meetings will involve the invitation of the nurses by sending them a link that they can use to join. This "pilot" group will in the end complete all the 14 levels as guided by the VA Mindfulness App by the end of the 4-weeks' time. The participants will attend Zoom meeting sessions each week with the aim of discussing and practicing mindfulness strategies as a group.

To carry out the program, some resources are required for the project implementation to take place. First a dedicated space to hold the weekly MBSR sessions, a conference room located on the unit. This room will be used to accommodate the nurse participants as well as the leaders, managers, educators, and the MBSR instructor. To carry out this project we will need the stakeholders, these will include the nurse participants, leaders, managers, educators, MBSR instructor, and administrative support from the hospital management. Other resources will include items such as materials to be used to carry out the MBSR sessions. Zoom links to be provided for nurse participants to attend sessions or group meetings, outlines on how to use the VA mindfulness App effectively, and a post-survey that will be used by the participants to give feedback and evaluate the program in general after completion.

Tools

The project entails the use of various tools to carry out the intervention and enhance the implementation process. The tools will include GAD-7, VA mindfulness app, and a handout for participants to help guide them through the expectations and protocol for the 5-week timeline.

GAD-7 Questionnaire

The first tool to be used in the project is the pre- and post-intervention questionnaire Generalized Anxiety Disorder 7-item (GAD-7) (See Appendix B in the Appendices section). As

stated by Spitzer et al. (2006), the GAD-7 tool was developed in a primary care setting in 2006 with the aim of screening and assessing generalized anxiety disorder (GAD). It had 13 items initially and has been being provided as a criteria for GAP outlined by the Diagnostic and Statistical Manual for Mental Disorders – Fourth Edition (DSM-IV) (Johnson et al., 2019). According to et al. Johnson et al. (2019), the GAD-7 questionnaire is a reliable tool that is commonly used to measure or assess general symptoms of anxiety in various settings and populations, especially in the healthcare and psychology fields. In a study that assessed the psychometric properties of the GAD-7 questionnaire tool, Johnson et al. (2019) found out that the tool has internal consistency and also convergent validity in determining pre- and post-treatment outcomes of anxiety in a heterogeneous psychiatric sample. In this study, all the alphas were above 0.82 for the two times of assessment, that is, pre- and post-treatment. When compared with other scales and tools for measuring anxiety and also wellbeing such as Patient Health Questionnaire 9, Symptom Check List 90-R, The Short Form 36 (SF 36) Health Survey, and Beck Anxiety Inventory (BAI), the GAD-7 tool was noted to have larger correlations (Johnson et al., 2019). These aspects indicated the reliability and validity of the tool.

The tool provides a precise approach with short questions for participants to indicate their feelings. It allows participants to answer by ticking at each level based on how they express their feelings. At the end of the 7 questions, each participant can make a calculation on the score they record for each question and the total score for all the questions – this calculation can also be done by the researcher. With this information, the tool will enable the determination of anxiety scores for the nurses towards their involvement in the MBSR program (See Appendix B).

This is a tool that is used in determining the knowledge that individuals have on anxiety and disorder (Spitzer et al., 2006). In this project, the tool will be useful in assessing the

knowledge that the ICU nurses have on stress and anxiety as well as the management process. The questionnaires will be filled out by nurses prior to the introduction of the program. They will guide the project leaders to collect data on how anxious the nurses are prior to the MBSR sessions. The project team members, in particular nurse educators and the patient safety committee, will also help in confirming the validity of the tool upon its usage in the program. Since the tool is published and provided freely online to the public, as stated by Spitzer et al. (2006), there will be no permission to be sought to allow the usage of the tool in the project.

The VA Mindfulness App

The VA Mindfulness App, which is also referred to as Mindfulness Coach, is a Health & Fitness as well as Mental Wellbeing application for mobile phone or smartphone usage. This app was developed by the US Department of Veteran Affairs (VA). The application of this app in the MBSR program for acute care setting nurses implies that it will not be a tool developed for the specific use in the project. Instead, it will be a tool adopted from a different source and developed by another developer for usage in the project. However, having been developed by the US Department of VA, the app is publicly available for free usage by anyone. It does not require any permission to allow its usage. (See Appendix C in the Appendices section).

According to an AppStore preview on the Mindfulness Coach app by Apple, Inc., the app was developed by the US VA Department's National Center for PTSD with the aim of helping Veterans, Service members, and any other individual on practicing mindfulness. The app seeks to help individual reduce stress, improve emotional balance, enhance self-awareness, and manage anxiety, depression, and chronic pain, especially due to the involvement in demanding settings, for example, in the military or in even acute care settings (AppStore, n.d.). It offers a self-guided program with a gradual process to help individuals understand and adopt the simple

practice of mindfulness. Some of the details that the app offers include the introduction of users to the basic understanding of mindfulness, anchoring attention, and 12 exercises for mindfulness with audio-guided provisions. It has customizable features that may enhance its usage by various individuals and application in different settings. The VA App is also available on both AppStore and Google PlayStore for iOS and Android users respectively (US Department of Veterans Affairs, n.d.). These details show the validity and reliability of the app in its application in the project.

Descriptive Table for the VA Mindfulness App Participants for 4-weeks

Week	**Expectations on Mindfulness Exercises**
1.	• Awareness of the body • Awareness of the breath • Awareness of the senses • Summative reflection of the week's expectations
2.	• Building compassion • Loving-kindness meditation • Summative reflection of the week's expectations
3.	• Mindful eating • Mindful listening • Mindful looking • Mindful walking • Summative reflection of the week's expectations
4.	• Mindfulness of emotional discomfort

	• Mindfulness of emotional discomfort part 1 • Summative reflection of the week's expectations • Seated practice • Summative reflection of all weeks' expectations
5.	• Gather data, conduct analysis, and complete other parts of the project

Plan for Data Collection

Nurses will be required to fill out the GAD-7 questionnaire before starting the 4-week MBSR session and after the completion of the session. To ensure confidentiality, each participant will be given a code/number (Participant 1, Participant 2, etc.) that will be used to match pre- and post-intervention scores, but no name will be used. These codes will be used to note participants' attendance at each of the four weekly MBSR sessions, and participants will report their use of all 14 modules in the VA Mindfulness App. Adherence to the program is best described as attending three of the four sessions and completing all the app modules.

Outcome evaluations will be done through the review of participants' records and will be done before and after the intervention. The number of participants' to be reviewed shall depend on the sample size under the study with available statistical power (Martínez-Vázquez et al., 2022). These reviews will be conducted to collect meaningful information while keeping the participants anonymous. All data will be de-identified for individuals' privacy. The identification of the participants will be done by use of number tags. A codebook connecting these codes with the names of participants will be kept in a locked cabinet by the project lead. The electronic data

shall be stored in a password-protected computer and all the data will be stored for three years after the completion of the project and then deleted.

Ethics/Human Subjects Protection

There will be recruitment of the ICU nurses through email and information flyers within the unit. The threats are limited and must do mostly with the loss of confidentiality. This will be minimized by the coding system. The benefits include gaining skills in mindfulness to help reduce stress and anxiety. This quality improvement project at Touro University Nevada does not necessitate Institutional Review Board (IRB) approval. The project site (hospital) does not need IRB approval for quality improvement projects of the employees. This approach helps to maintain the participant privacy, obtained informed consent, and the right to withdraw without any consequences in the study.

Data Analysis Plan

For data analysis, a paired t-test will be used to compare pre-and post-intervention GAD-7 scores to assess statistically significant changes in anxiety levels. This test assumes the normality of differences between pre-and post-intervention scores if no outliers. Descriptive statistics, such as frequencies and percentages, will be used to analyze compliance data on attendance and VA Mindfulness App completion, which require no major assumptions (Mishra et al., 2019). Descriptive statistics mainly involve summarizing and describing the collected data without making inferences. Data will be analyzed using SPSS statistical software to ensure accurate statistical analysis. This combination of inferential and descriptive statistics will provide a comprehensive understanding of the intervention's impact on participants' anxiety levels and compliance with the MBSR program.

Data Analysis

Results

A paired t-test was conducted to compare the pre- and post-intervention GAD-7 scores to assess statistically significant changes in anxiety levels. The paired t-test assumes the normality of the difference scores (i.e., the differences between the pre-and post-intervention scores should be normally distributed). The test also assumes the absence of outliers that could distort the results. The data analysis was conducted using SPSS software. The intervention followed a 5-week timeline hence the timeline did not change. The 30 GAD-7 form participants had no missing data. Only 30 of 62 eligible RNs responded indicating a 48% response rate. This lower response rate may limit generalizability.

Descriptive Table for the VA Mindfulness App Participants for 5-weeks

Week	**Expectations on Mindfulness Exercises**
1.	• Awareness of the body • Awareness of the breath • Awareness of the senses • Summative reflection of the week's expectations
2.	• Building Compassion • Loving-kindness meditation • Summative reflection of the week's expectations
3.	• Mindful eating • Mindful listening • Mindful looking

	• Mindful walking • Summative reflection of the week's expectations
4.	• Mindfulness of emotional discomfort • Mindfulness of emotional discomfort part 1 • Summative reflection of the week's expectations • Seated practice • Summative reflection of all weeks' expectations
5.	• Gather data and complete other parts of the project

Table showing GAD-7 Scores

Participants	Pre-GAD-7 Score	Post-GAD-7 Score
1	12	10
2	15	12
3	13	11
4	14	13
5	16	14
6	10	8
7	18	15
8	9	7
9	14	11
10	15	13
11	17	14
12	16	14
13	11	8
14	12	11

15	14	12
16	16	13
17	13	11
18	15	13
19	18	16
20	9	8
21	10	8
22	14	13
23	12	11
24	17	15
25	16	14
26	13	12
27	15	13
28	11	9
29	9	7
30	14	12

Summary

Descriptive Statistics

		Pre-GAD-7 Score	Post-GAD-7 Score
N	Valid	30	30
	Missing	0	0
Mean		13.60	11.60
Std. Error of Mean		.486	.459
Median		14.00	12.00
Mode		14	13
Std. Deviation		2.660	2.513
Variance		7.076	6.317

Range	9	9
Minimum	9	7
Maximum	18	16
Sum	408	348

Inferential Statistics: Paired T-test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Pre-GAD-7 Score - Post-GAD-7 Score	2.000	.643	.117	1.760	2.240	17.029	29	.000

*Strengths***:** Such reliable tools include the GAD-7, which ensures the reliability of the findings made. The participants in the MBSR program showed high interest levels as ascertained through the high participation rate and completion rates.

*Weaknesses***:** The study had a small sample size of 30 participants, and the response rate of the survey was 48%. This may reduce the ability to generalize the findings to the population of RNs.

Compliance and Participation Data

Out of the 62 registered nurses (RNs) eligible to participate in the project, 30 RNs (48%) took part by completing the initial GAD-7 screening before the mindfulness intervention. These participants enrolled in the 5-week mindfulness program, which was conducted using the VA Mindfulness App. Of the 30 participants, all completed the GAD-7 screening both before and after the intervention, ensuring a 100% completion rate for the anxiety assessments.

Regarding the mindfulness exercises, of the 30 participants who enrolled in the program, 28 nurses (93%) actively participated in the mindfulness exercises and completed the weekly activities, while two participants (7%) had irregular attendance or incomplete participation in some exercises, as reported through their app usage logs. This high compliance rate indicates

strong engagement in the mindfulness exercises, which likely contributed to the significant reduction in GAD-7 scores post-intervention.

Interpretation

Comparison with Existing Literature: The findings align with the research showing that MBSR reduces anxiety in healthcare practitioners. MBSR reduces anxiety and improves psychological functioning, according to Kriakous et al. (2021). The mean GAD-7 scores decreased from 13.60 (pre-intervention) to 11.60 (post-intervention) suggesting that MBSR is an effective tool for anxiety management in healthcare settings.

Impact on People and Systems: It was found that participants' GAD-7 scores decreased significantly after the intervention ($t(29) = 17.029$, $p < .001$). Over time, anxiety levels have lessened, and this can be a positive sign for mental health in healthcare workers. This anxiety reduction may help enhance employment satisfaction, stress-induced turnover, and patient outcomes.

Association Between Intervention and Outcomes: This finding underlines the effectiveness of the intervention as evidenced by the statistical significance ($p < 0.001$) of the GAD-7 score reduction. The 95% confidence interval for the difference of 1.190 is between 1.760 and 2.240, strengthening the validity of these findings. In practical terms, this indicates that the MBSR intervention yields a significant reduction in anxiety much as is likely to be observable and of benefit in everyday practice.

Strategic Trade-offs: The MBSR program seems beneficial, but strategic trade-offs must be considered. Such initiatives may demand healthcare personnel to take time away from patient care, reducing workforce availability. Long-term benefits like lower anxiety and better job performance may outweigh these short-term opportunity costs. Micklitz et al. (2021) support

cost-effectiveness since mindfulness programs have psychological and systemic effects with few resources.

Limitations

The MBSR project was limited by bias, project design, data collecting, and analysis. Specific attempts were made to address these constraints, which could impair outcome validity and reliability. Potential **bias**, especially selection and response bias, is a major constraint. Only 30 ICU nurses participated, limiting the generalizability of the findings. The quality improvement project was voluntary, thus nurses interested in mindfulness may have participated more. Selection bias may occur since the sample may not accurately represent all ICU nurses, especially those who do not believe in mental health care. While validated, self-reported measures like the GAD-7 questionnaire may introduce response bias. Social desirability may have caused participants to underreport their post-intervention distress. To reduce this constraint several efforts were made. The standardized GAD-7 reduced subjective response variability. Additionally, the coding approach employed to anonymize participants replies to reduced social desirability bias by allowing participants to describe their worries without judgment. The project also used a pre-and post-intervention design to compare anxiety levels before and after MBSR. This design reduced baseline anxiety differences, revealing the intervention's impact.

Another constraint was the **project design**. Five weeks may have been too short to effectively analyze mindfulness-based stress reduction's long-term effects on ICU nurses' anxiety. Mindfulness practices take at the minimum eight weeks, based on previous literature reviews, to change psychological well-being, therefore the short timeline made it difficult to measure long-term outcomes like burnout reduction or resilience. Additionally, the project was conducted at one hospital, reducing its external validity. Critical care units have varying staffing

levels, patient populations, and organizational cultures, therefore results from one unit may not be applied to another. Despite design constraints, the project ensured intervention consistency. For consistency across the sample, the VA Mindfulness App provided guided mindfulness exercises to all individuals. To keep participants involved, addressed issues, and guaranteed program compliance, weekly Zoom sessions and discussions were held. This framework kept participants focused and encouraged to complete the mindfulness exercises and remained engaged, therefore reducing some of the time constraints.

Moving forward, **data collection methods** were also a source of limitation. The experiment relied mainly on the GAD-7 questionnaire, which evaluates generalized anxiety but not stress, depression, or burnout independently. The project may have missed additional psychological elements affected by MBSR by focusing on anxiety. Self-reported statistics can be altered by participants' biases or misinterpretations of their mental health. In addition, the experiment did not use qualitative data collection methods like interviews or focus groups to better understand participants' mindfulness program experiences and mental health. However, measures were taken to increase data collecting dependability. The GAD-7 questionnaire was given before and after the sessions to compare anxiety levels. The VA Mindfulness App objectively measured mindfulness exercise participation and engagement, ensuring program participation was accurately monitored. Adherence to the intervention was defined as attending the five weekly mindfulness sessions and completing all app modules, ensuring that only fully engaged participants were included in the final analysis.

Finally, the small sample size and unsophisticated statistical approaches hindered **data analysis**. A paired t-test was employed to compare pre-and post-intervention GAD-7 scores, which is suitable for small groups but may not have captured more complex effects. Descriptive

statistics summarized compliance and participation levels, but regression models could have revealed the relationship between participant characteristics (e.g., age, nursing experience) and intervention effectiveness. To overcome these analytical limitations, the project team used a paired t-test, which is suitable for small sample numbers and allowed pre- and post-test comparisons.

Conclusion

This quality improvement project indicated that the MBSR program has a positive impact on lowering stress and anxiety among ICU nurses. The data implied that mindfulness activities may have improved ICU nurses' mental health and patient care over time. The program is sustainable since it can be integrated into daily life using accessible resources like mindfulness apps. This project required little financial commitment because the main costs were time and participation. This investigation emphasized the necessity of organizational support for mental health interventions in high-stress environment like ICUs, which has major implications for nursing practice. Policy proposals included mental health awareness and mindfulness-based therapies in daily routine healthcare practice. To validate MBSR's efficacy in varied healthcare settings, additional quality projects with control groups are needed.

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Appendices

Appendix A: Project Timeline

Week 1 (July 01-July 05)	• Form the participants and the entire project team. • Assign roles. • Allocate resources (physical space, materials.) • Recruit and enroll critical care nurse participants. • Conduct pre-intervention assessments (GAD-7) • Introduce the MBSR Program, and the VA app. • Begin the first weekly MBSR session by indicating the expectations. • End the week with reflections and guidelines for the second week's expectations.
Week 2 (July 08-July 12)	• Conduct weekly 15-30 minutes MBSR sessions. • Reflect on the progress on the practices. • Provide guidelines for the third week's expectations.
Week 3 (July 15-July 19)	• Conduct weekly 15-30 minutes MBSR sessions. • Reflect on the progress on the practices. • Provide guidelines for the fourth week's expectations.
Week 4 (July 22-July 26)	• Conduct weekly 15-30 minutes MBSR sessions. • Provide guidance and support for daily mindfulness practices • Encourage participant engagement and compliance. • Review program completion and participant achievements.

	• Reflect on the progress on the practices. • Provide guidelines for the fourth week's expectations
Week 5 (July 29-August 02)	• Administer post GAD-7 assessment, survey. • Collect and analyze data from pre- and post-intervention assessments using descriptive statistics, t-test. • Evaluate the effectiveness of the MBSR Program • Interpret findings and draw conclusions. • Prepare project report and dissemination materials. • Present findings to stakeholders (nursing leadership) • Plan for potential program sustainability and expansion

Appendix B: GAD-7 Questionnaire

Generalized Anxiety Disorder Questionnaire(GAD-7)

Study ID …….. Date …….

Instructions: These questions ask about how you have been feeling in the last 2 weeks.

Your responses will be kept completely confidential.

Tick only one box per question

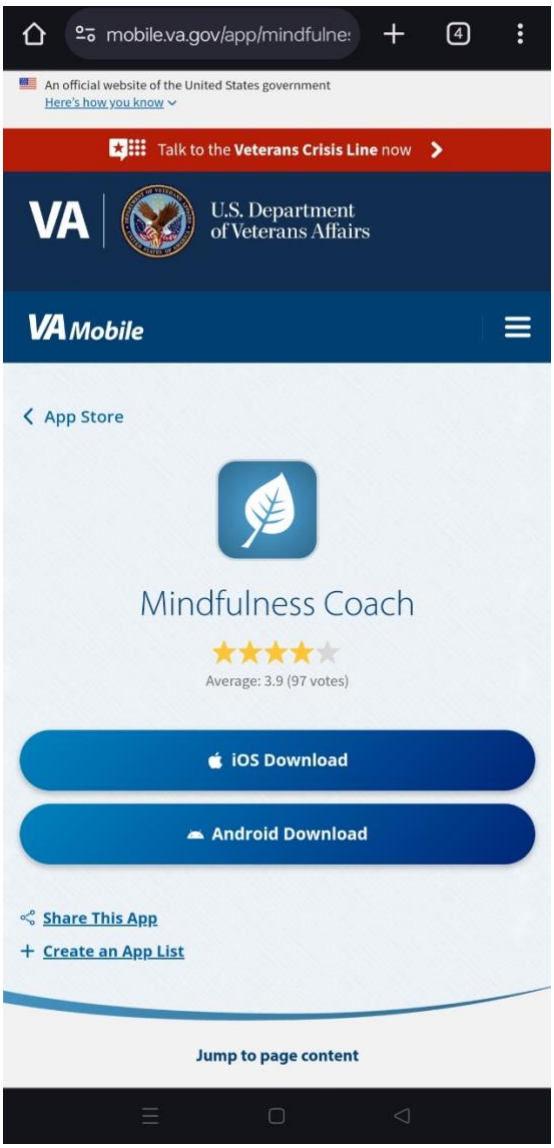
Over the last 2 weeks, how often have you been bothered by any of the followingproblems?

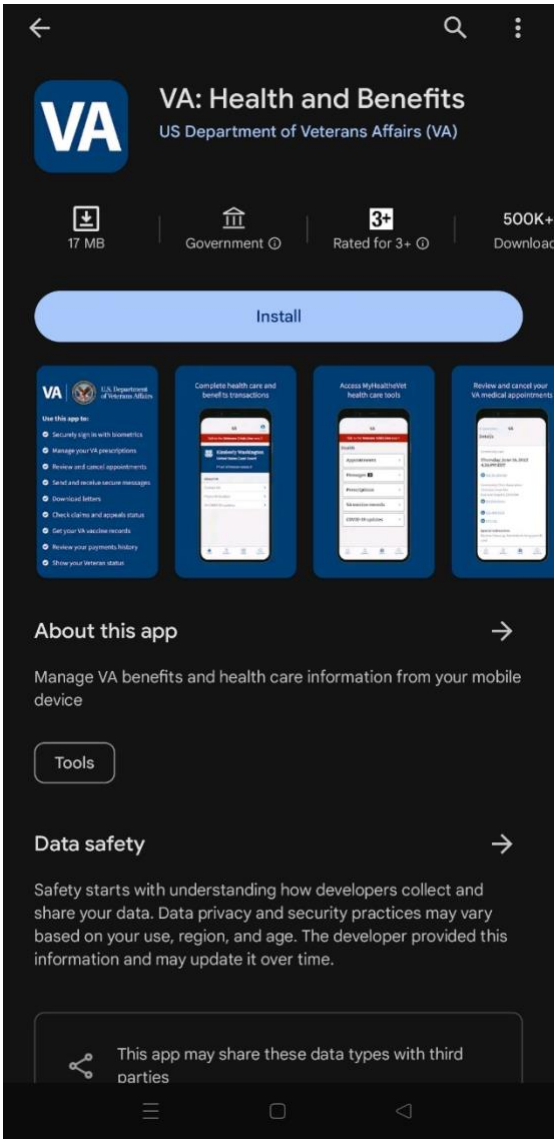
1. Feeling nervous, anxious or on edge	☐	☐	☐	☐
2. Not being able to stop or control worrying	☐	☐	☐	☐
3. Worrying too much about different things	☐	☐	☐	☐

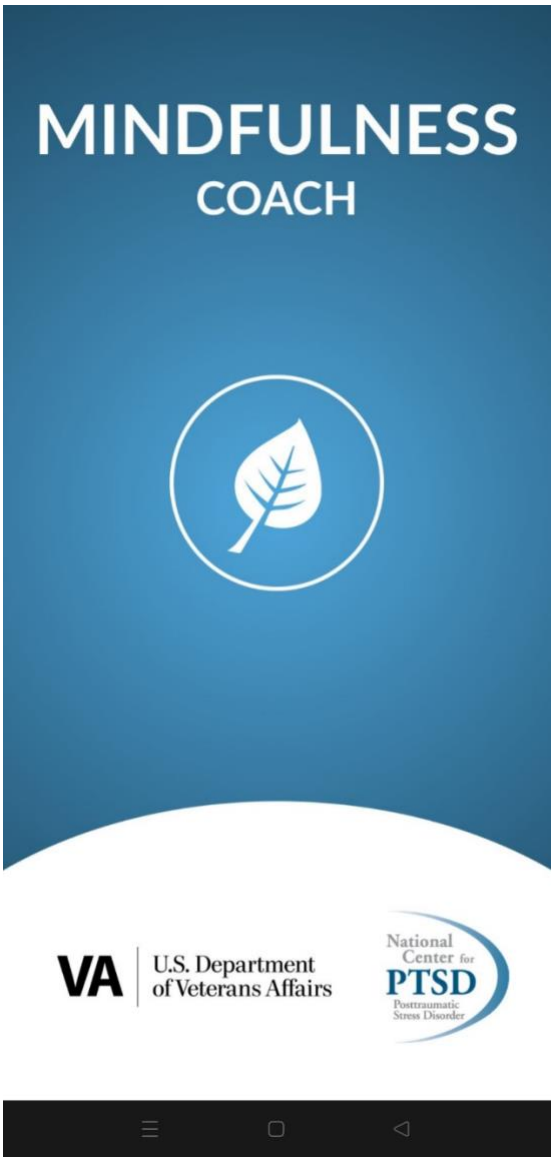
4. Trouble relaxing	☐	☐	☐	☐
5. Being so restless that it is hard to sit still	☐	☐	☐	☐
6. Becoming easily annoyed or irritable	☐	☐	☐	☐
7. Feeling afraid as if something awful might happen	☐	☐	☐	☐
Total Score: … .....=	.....+	..... +	..... +	.....

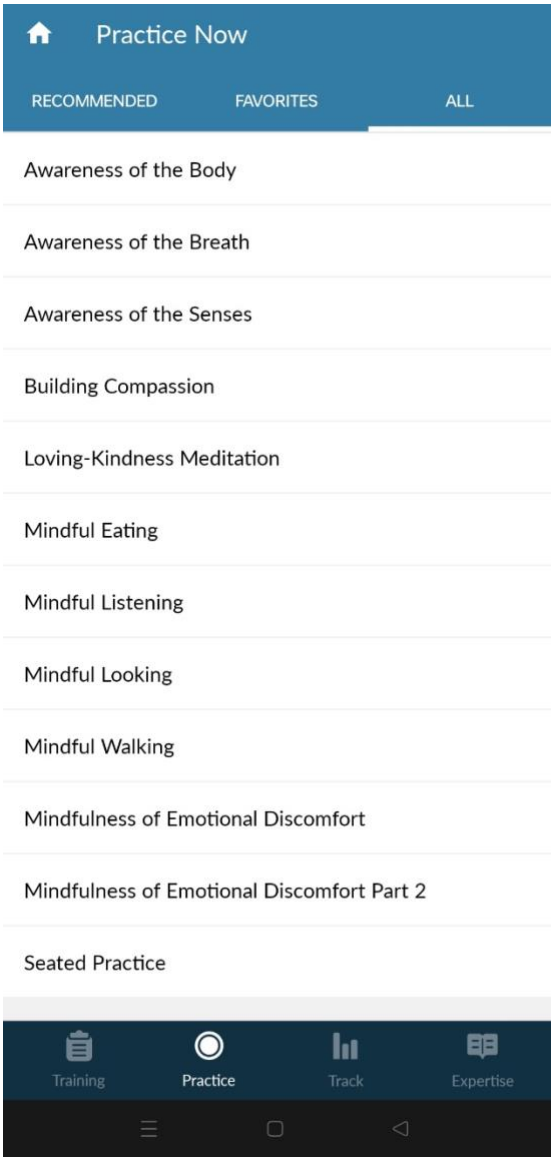
Thank you for completing this questionnaire

Appendix C: 4 Screenshots of the VA Mindfulness App (pages 43 & 44)






MINDFULNESS
COACH
VA
U.S. Department of Veterans Affairs
National Center for PTSD
Posttraumatic Stress Disorder


Practice Now
RECOMMENDED
FAVORITES
ALL
Awareness of the Body
Awareness of the Breath
Awareness of the Senses
Building Compassion
Loving-Kindness Meditation
Mindful Eating
Mindful Listening
Mindful Looking
Mindful Walking
Mindfulness of Emotional Discomfort
Mindfulness of Emotional Discomfort Part 2
Seated Practice
Training
Practice
Track
Expertise