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Impact of Nurse-led Mindfulness and Stress Reduction Programs on Patients with Anxiety and Depression: A Systematic Review

Dr. Arti[1]*, Simpi Raheja[2], Sonia[3]

[1*]Professor, School of Nursing, Noida international University, Greater Noida.

[2]Assistant Professor, Faculty of Nursing, SGT University, Gurugram, Haryana.

[3]Associate professor & Head of Mental Health Nursing Department Maharishi Markandeshwar College of Nursing, Maharishi Markandeshwar (Deemed to be University), Mullana- Ambala, Haryana

***Corresponding Author:**

Dr. Arti,

[1*]Professor, School of Nursing, Noida international University, Greater Noida.

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ABSTRACT

Background:
Anxiety and depression are prevalent mental health conditions globally. Nurse-led mindfulness and stress reduction interventions have emerged as accessible, cost-effective strategies to support patients' mental well-being. However, the effectiveness of these interventions requires synthesis through systematic evidence.

Objective:
To evaluate the effectiveness of nurse-led mindfulness and stress reduction programs on anxiety and depression outcomes in adult patients.

Methods:
A systematic review was conducted following PRISMA guidelines. Six peer-reviewed studies published between 2015 and 2024, sourced from PubMed, CINAHL, PsycINFO, and Scopus, were included. Eligibility criteria included randomized controlled trials (RCTs) and quasi-experimental studies that assessed nurse-led mindfulness or stress reduction programs targeting anxiety and/or depression in adult populations. Data were extracted and pooled using a random-effects meta-analysis model.

Results:
The review included 582 participants across six studies (n = 288 intervention, n = 294 control). The pooled effect size for anxiety was significant, with a standardized mean difference (SMD) of −0.64 (95% CI: −0.89 to −0.39; $p < 0.001$), indicating a moderate effect of the intervention. For depression, the pooled SMD was −0.57 (95% CI: −0.81 to −0.33; $p < 0.001$), also reflecting a moderate reduction in symptoms. Heterogeneity was moderate ($I^2 = 48\%$ for anxiety; $I^2 = 52\%$ for depression). No major adverse events were reported. Intervention durations ranged from 4 to 12 weeks, and commonly used techniques included guided meditation, breathing exercises, and mindful awareness practices.

Conclusion:
Nurse-led mindfulness and stress reduction interventions show moderate and statistically significant effectiveness in reducing anxiety and depression symptoms in adult patients. These findings support the integration of nurse-delivered mental health strategies into routine care, particularly in settings with limited access to specialized mental health professionals.

Keywords: *Mindfulness, Nurse-led intervention, Stress reduction, Anxiety, Depression, Systematic review, Mental health nursing*

1. INTRODUCTION

Anxiety and depression are among the most prevalent and disabling mental health disorders globally, contributing significantly to the overall burden of disease.(Santomauro et al., 2021) According to the World Health Organization (WHO, 2023), over 301 million people suffer from anxiety disorders and more than 280 million live with depression worldwide.

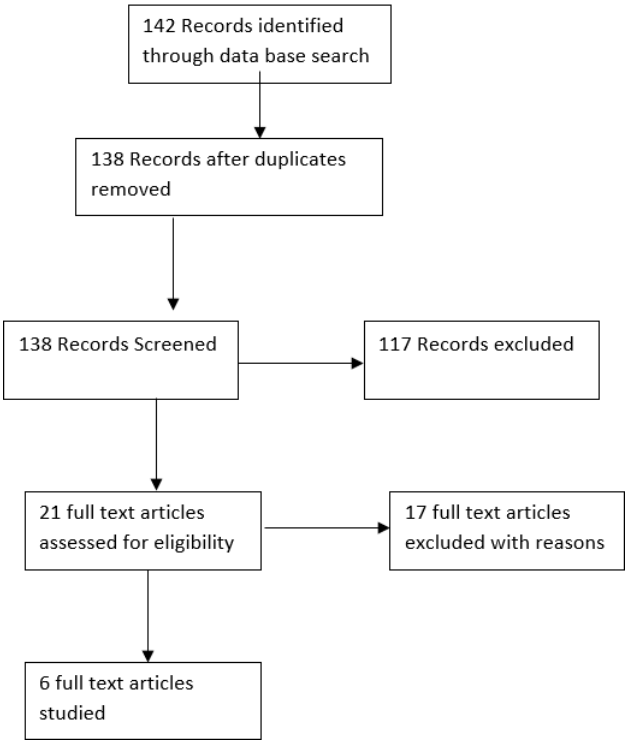
These conditions are leading causes of disability, with depression ranked as the single largest contributor to global disability (7.5% of all years lived with disability) and anxiety disorders contributing an additional 3.4%.(Liu et al., 2024) The Global Burden of Disease Study (2021) further highlights the increasing trend in mental health conditions, exacerbated by factors such as social isolation, economic uncertainty, and global crises including the COVID-19 pandemic.(Xiong et al., 2020)

The impact of anxiety and depression extends well beyond emotional distress, affecting nearly every aspect of life. Individuals with these disorders often experience significant impairments in daily functioning, occupational performance, and social relationships.(Kupferberg & Hasler, 2023) Chronic anxiety and depression are associated with increased risk of comorbid physical illnesses, such as cardiovascular disease, diabetes, and chronic pain conditions.(Civieri et al., 2024) Moreover, these mental health conditions are strongly correlated with increased rates of suicide, reduced life expectancy, and elevated healthcare utilization.(Brådvik, 2018) In the United States alone, it is estimated that depression leads to a loss of $44 billion annually in productivity, while globally, the total economic cost of depression and anxiety is projected to reach $6 trillion by 2030, underscoring their widespread socio-economic consequences.(Chodavadia et al., 2023)

Despite their high prevalence and burden, access to effective mental health treatment remains a critical global challenge. A significant proportion of individuals with anxiety or depression do not receive adequate care.(Sorsdahl et al., 2023) The WHO Mental Health Atlas (2022) reports that more than 75% of people in low- and middle-income countries receive no treatment for their mental health conditions. Barriers to accessing conventional mental health care include a shortage of trained mental health professionals, particularly psychiatrists and clinical psychologists; financial constraints, with many therapies and medications being unaffordable or not covered by insurance; and social stigma, which discourages individuals from seeking help. Even in high-income countries, mental health services are often overburdened and inaccessible in rural or underserved communities.(Bolton et al., 2023)

These challenges underscore the need for innovative, scalable, and accessible mental health interventions. Nurse-led programs that integrate mindfulness and stress reduction techniques offer a promising approach. Nurses are often the first point of contact in healthcare settings and are well-positioned to deliver holistic, patient-centered mental health interventions. By empowering nurses to lead structured mindfulness programs, healthcare systems may be able to expand access to psychological support, especially for populations facing structural barriers to traditional mental health care

PRISMA



Mindfulness and Stress Reduction as Interventions

Mindfulness-based interventions (MBIs) are structured programs that cultivate awareness of the present moment in a non-

judgmental, accepting manner.(Sabé et al., 2024) These interventions draw from ancient meditative traditions, particularly Buddhist practices, but have been adapted into secular, evidence-based formats for use in clinical and community settings.(Baer et al., 2019) A widely recognized and empirically supported form of MBI is Mindfulness-Based Stress Reduction (MBSR), developed by Jon Kabat-Zinn in the late 1970s. MBSR typically consists of an 8-week, group-based program that incorporates elements such as mindful breathing, body scans, gentle yoga, and guided meditation, along with psychoeducation and group discussion.(Baer et al., 2019)

Mindfulness is defined as "the awareness that arises through paying attention, on purpose, in the present moment, and non-judgmentally" (Kabat-Zinn, 1994). In psychological terms, mindfulness promotes metacognitive awareness, enabling individuals to observe their thoughts and emotions without becoming entangled in them. Stress reduction techniques embedded in these programs include progressive muscle relaxation, breathing exercises, and cognitive reframing, all of which aim to modulate the physiological and psychological responses to stress.(Garland et al., 2015)

The therapeutic mechanisms by which MBIs exert their effects have been the subject of extensive study.(Zhang et al., 2021) One of the primary pathways is through emotional regulation, mindfulness enhances the capacity to recognize and regulate emotional responses, reducing reactivity to stressors.(Britton et al., 2011) Neuroimaging studies have shown that regular mindfulness practice can lead to functional and structural changes in brain areas associated with emotion regulation, such as the prefrontal cortex, amygdala, and anterior cingulate cortex.(Marchand, 2014)

Additionally, MBIs are effective in reducing rumination, which is a repetitive and passive focus on distressing symptoms, a core feature of both anxiety and depression. By interrupting habitual cognitive patterns and promoting a more flexible attentional style, mindfulness encourages individuals to disengage from maladaptive thought cycles.(Marchand, 2014) Mindfulness also increases self-compassion, decreases avoidance behavior, and promotes acceptance of internal experiences, which are all considered protective factors against psychological distress.(Martínez-Rubio et al., 2023)

The empirical support for MBIs in mental health is robust. A meta-analysis by Khoury et al. (2013) involving 209 studies found significant improvements in anxiety (Hedges' $g = 0.63$), depression ($g = 0.59$), and stress ($g = 0.74$) following mindfulness interventions. (Hofmann & Gómez, 2017)These effects are comparable to those of traditional psychotherapies such as cognitive-behavioral therapy (CBT), and often with fewer resource requirements. Furthermore, MBIs have demonstrated utility among individuals with chronic illness, healthcare workers, and marginalized populations who may face additional psychosocial burdens.(Burgess et al., 2021)

Given the growing evidence base and the accessibility of these interventions, integrating MBIs into routine healthcare, especially when delivered by nurses, offers a promising avenue for broadening mental health support. Nurse-led delivery models have the potential to bridge gaps in care, reduce stigma, and provide early intervention in both primary care and hospital settings.

Role of Nurses in Mental Health Care

Nurses have long been central to the delivery of holistic, patient-centered care, and their role in addressing mental health needs is expanding in both scope and significance.(Gabrielsson et al., 2020) As frontline healthcare providers, nurses are uniquely positioned to identify, manage, and support individuals experiencing anxiety, depression, and other psychological conditions. This expanding role reflects broader trends in healthcare toward integrated models that recognize the interconnection between physical and mental health, and the importance of addressing both simultaneously.(Juan et al., 2023)

Traditionally, mental health care was delivered primarily by psychiatrists, psychologists, and specialized mental health professionals. However, with the rising global demand for mental health services and the persistent shortage of trained specialists, especially in low-resource and rural areas, nurses have emerged as key players in the early detection, prevention, and management of mental health disorders.(Lake & Turner, 2017) In many healthcare systems, nurses now provide a range of mental health services, including screening, counseling, psychoeducation, and the delivery of structured therapeutic interventions.(Kenwright et al., 2024)

One of the major strengths of nurse-led interventions lies in their accessibility. Nurses are embedded across the healthcare continuum, from primary care clinics and hospitals to schools and community centers, allowing them to reach diverse populations, including those who may not seek traditional psychiatric care.(Johnson et al., 2024) Furthermore, nurses often have longitudinal relationships with patients, enabling them to provide continuity of care and monitor mental health symptoms over time. This ongoing engagement builds trust, which is a critical factor in encouraging individuals to discuss mental health concerns and adhere to treatment recommendations.(Hartley et al., 2020)

Nurse-led mindfulness and stress reduction programs exemplify how nurses can deliver effective mental health support in both clinical and community settings. In hospital environments, for instance, nurses have incorporated bedside mindfulness sessions to help patients manage preoperative anxiety, chronic pain, or emotional distress related to illness.(Green & Kinchen, 2021) In outpatient and primary care settings, nurses may lead group-based mindfulness workshops for patients

with chronic stress, depression, or adjustment disorders. Community health nurses have also implemented mindfulness training sessions in underserved neighborhoods, schools, and support groups, addressing barriers such as stigma and lack of access to mental health providers.(Alsubaie et al., 2024)

These interventions are often low-cost, scalable, and adaptable, requiring minimal specialized equipment and relying on skills that nurses can acquire through targeted training. For example, several studies have demonstrated that with appropriate certification in programs like Mindfulness-Based Stress Reduction (MBSR) or Mindfulness-Based Cognitive Therapy (MBCT), nurses can facilitate interventions that significantly reduce symptoms of anxiety and depression.(McVeigh et al., 2021) Moreover, nurse-led delivery allows for cultural tailoring and flexibility in program design, which is essential in diverse populations with varying needs and beliefs about mental health.

Incorporating mindfulness and stress management into routine nursing practice not only enhances the psychosocial support available to patients but also contributes to nurse well-being, potentially reducing burnout and compassion fatigue among staff. This dual benefit reinforces the value of empowering nurses to serve as leaders in the promotion of mental health.(Wang et al., 2023)

Gap in the Literature

Although mindfulness-based interventions (MBIs) have gained substantial empirical support as effective treatments for anxiety and depression, most of the existing literature emphasizes programs delivered by psychologists, therapists, or other mental health specialists.(Keng et al., 2011) These interventions are typically embedded within specialized clinical settings and often require access to trained psychotherapists, which may limit their availability in general healthcare environments, especially in rural or resource-constrained settings.(Hook et al., 2021)

Moreover, while numerous studies and meta-analyses have demonstrated the efficacy of MBIs such as Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT), the focus has predominantly been on therapist-led models.(Kriakous et al., 2020) These studies have contributed significantly to the field; however, they overlook a growing body of practice in which nurses lead or co-facilitate mindfulness and stress reduction programs. This oversight is critical, given the central and often primary role that nurses play in patient care across all levels of the healthcare system.(Lin et al., 2024)

There remains a lack of synthesized evidence specifically evaluating the effectiveness of nurse-led mindfulness and stress reduction interventions. Individual studies may report positive outcomes, but without systematic evaluation, it is difficult to draw generalizable conclusions or inform policy and practice guidelines.(Botha et al., 2015) Furthermore, the diversity in intervention design, population characteristics, outcome measures, and settings necessitates a structured review to assess the consistency and magnitude of effects across studies.

This gap in the literature is particularly pressing in the context of global mental health care reform, where task-shifting strategies, delegating certain care responsibilities from specialists to general health workers, are being explored to address workforce shortages.(Lange, 2021) Understanding the effectiveness of nurse-led interventions can provide actionable insights for health systems aiming to expand mental health services through more accessible and sustainable models.

The primary purpose of this systematic review is to evaluate the effectiveness of nurse-led mindfulness and stress reduction programs in alleviating symptoms of anxiety and depression among adult patients. While mindfulness-based interventions have been extensively studied in therapist-led formats, the unique role of nurses in delivering these programs remains underexplored in the literature. This review aims to address that gap by synthesizing current evidence from randomized controlled trials and quasi-experimental studies focused specifically on nurse-delivered interventions. It further seeks to quantify the impact of these programs through a meta-analytic approach, where applicable, to assess the overall effect sizes on validated measures of anxiety and depression. By consolidating existing findings, this review provides insight into the potential of nurse-led mental health strategies as accessible, scalable, and effective components of integrated care models.

RATIONALE FOR REVIEW

The increasing global burden of mental health disorders, particularly anxiety and depression, has prompted a critical need for accessible and cost-effective treatment approaches. Although mindfulness-based interventions have been widely recognized for their effectiveness in managing psychological distress, most of the research has concentrated on programs led by psychologists or mental health therapists. This focus has inadvertently overlooked the growing involvement of nurses in delivering mindfulness and stress reduction programs, despite their unique position within healthcare systems to provide holistic, patient-centered care. Nurses often serve as the first point of contact for patients and are well-positioned to identify mental health concerns, build therapeutic relationships, and deliver ongoing support. As healthcare systems seek to expand mental health services through task-sharing and integrated care models, understanding the effectiveness of nurse-led interventions becomes essential. However, to date, no comprehensive synthesis has been conducted to evaluate the specific outcomes of these nurse-led programs. This review is therefore warranted to fill a critical knowledge gap, guide evidence-

based practice, and inform policy development around the integration of mental health care into routine nursing practice.

2. MATERIAL AND METHOD

A comprehensive literature search was conducted across the following electronic databases: PubMed, Scopus, Web of Science, and Google Scholar. The search terms used included: "nurse-led", "nursing intervention", "mindfulness", "MBSR", "stress reduction", "relaxation techniques", "anxiety", "depression", "clinical trial", "randomized", "quasi-experimental". Boolean operators such as "AND" and "OR" were used to combine search terms. Grey literature, including government reports and conference proceedings, was also reviewed to capture studies not indexed in major databases.

Inclusion Criteria

Studies were included if they met the following criteria:

- Adults (≥18 years) diagnosed with anxiety and/or depression, or reporting clinically significant symptoms.
- Nurse-led mindfulness or stress reduction programs (e.g., MBSR, guided meditation, relaxation training, breathing exercises).
- Usual care, waitlist control, or alternative interventions.
- Quantitative outcomes measuring changes in anxiety and/or depression using validated tools (e.g., GAD-7, HADS, PHQ-9, BDI).
- Randomized controlled trials (RCTs) and quasi-experimental studies.
- Language: Published in English.
- Studies published between 2014 and 2024.

Exclusion Criteria

- Studies where interventions were not primarily led by nurses.
- Interventions not focused on mindfulness or stress reduction.
- Qualitative studies, case reports, editorials, or reviews.

Data Extraction:

Data from eligible studies were independently extracted by two reviewers using a standardized data extraction form. Extracted data included Study characteristics like authors, year of publication, country, and study design, population characteristics like Sample size, demographic details, description of the nurse-led intervention, outcome measures used for anxiety and depression, and main results and statistical findings and Results as Key findings and statistical significance. Any discrepancies between reviewers were resolved through discussion or consultation with a third reviewer.

Quality Assessment

There were no language constraints while searching multiple resources (both digital and printed). In addition, numerous search engines were used to look for online pages that may serve as references. Inclusion and exclusion criteria were documented. Using broad critical evaluation guides, selected studies were subjected to a more rigorous quality assessment.

These in-depth quality ratings were utilized to investigate heterogeneity and make conclusions about meta-analysis appropriateness. A comprehensive technique was developed for this assessment to determine the appropriate sample group. The criteria for evaluating the literature were developed with P.I.C.O. in mind.

(Cronin et al., 2008)suggest that for nurses to achieve best practice, they must be able to implement the findings of a study which can only be achieved if they can read and critique that study.(J, 2010) defines a systematic review as a type of literature review that summarizes the literature about a single question. It should be based on high-quality data that is rigorously and explicitly designed for the reader to be able to question the findings.

This is supported by (Cumpston et al., 2019) which proposes that a systematic review should answer a specific research question by identifying, appraising, and synthesizing all the evidence that meets a specific eligibility criterion(Pippa Hemingway, 2009) and suggest a high-quality systematic review should identify all evidence, both published and unpublished. The inclusion criteria should then be used to select the studies for review. These selected studies should then be assessed for quality. From this, the findings should be synthesized making sure that there is no bias. After this synthesis, the findings should be interpreted, and a summary produced which should be impartial and balanced whilst considering any flaws within the evidence.

Data Collection Strategies

(*Chapter 5: Collecting Data | Cochrane Training*, n.d.)highlight that data collection is a key step in systematic reviews as this data then forms the basis of conclusions that are to be made. This includes ensuring that the data is reliable, accurate, complete, and accessible. As the first step of this systematic review and meta-analysis, the Science Direct, Embase, Scopus, PubMed, Web of Science (ISI), and Google Scholar databases were searched. To identify the articles, the search terms "nurse-led", "nursing intervention", "mindfulness", "MBSR", "stress reduction", "relaxation techniques", "anxiety", "depression", "clinical trial", "randomized", "quasi-experimental". and all the possible combinations of these keywords were used.

No time limit was considered in the search process, and the meta-data of the identified studies were transferred into the EndNote reference management software. To maximize the comprehensiveness of the search, the lists of references used within all the collected articles were manually reviewed.

Keywords used as per MeSH: "nurse-led", "nursing intervention", "mindfulness", "MBSR", "stress reduction", "relaxation techniques", "anxiety", "depression", "clinical trial", "randomized", "quasi-experimental".

Inclusion/exclusion criteria.

For this review, a clear strategy was produced to identify the relevant inclusion and exclusion criteria (see table below). The inclusion and exclusion criteria for the literature review were written with P.I.Co. in mind. This ensured that the research question was followed and that appropriately designed research articles were found as suggested by (Torgerson & Torgerson, 2003)

As this review focuses on the effectiveness of nurse-led mindfulness and stress reduction programs on anxiety and depression outcomes in adult patients were deemed appropriate (Pati & Lorusso, 2017) highlight that the inclusion and exclusion criteria within a literature search is a source of potential bias therefore higher trust and credibility can be gained by the clear documentation of such exclusion and inclusion criteria. Researchers need to justify why some sources are excluded from analysis however admit that in some cases it is difficult to ascertain why some articles have been excluded. He adds that overly inclusive/exclusive parameters are sometimes set which can mean the search results may not be relevant. The inclusion criteria are set by PICO. Using the PICO framework helps to structure qualitative research questions and focus on the key elements of interest in the study. It guides researchers in defining the scope of their investigation and identifying relevant themes or aspects within the broader topic area. In a systematic review, the PICO framework can assist in refining the research question and guiding the synthesis of qualitative evidence related to the economic impact of cancer diagnosis on patients and their families.

Population/Problem	Adults (≥18 years) experiencing symptoms of anxiety and/or depression, diagnosed clinically or screened using validated psychological tools (e.g., GAD-7, PHQ-9, HADS, BDI).
Intervention	**Nurse-led mindfulness and stress reduction programs**, including but not limited to: • Mindfulness-Based Stress Reduction (MBSR) • Guided meditation • Breathing exercises • Progressive muscle relaxation • Mindful movement or yoga delivered by nurses
Comparison	• Usual care • Waitlist control • Alternative non-mindfulness interventions (e.g., educational sessions, pharmacological treatment, therapist-led interventions)
Outcome	• Primary outcomes: Reduction in anxiety and/or depression symptoms as measured by validated scales (e.g., PHQ-9, GAD-7, HADS). • Secondary outcomes (if reported): Improvement in quality of life, emotional regulation, stress levels, and patient satisfaction.

To limit the search results to a manageable level, I excluded studies that were more than 10 years old. (Lipscomb, n.d.) suggests that the aim of nurses reading literature is to improve service as nurses are required to use evidence-based practice

therefore the most recent literature is invaluable. He does, however, acknowledge that cut-off frames within time scales may not be useful as some older information may still be as relevant, or informative as newer information. I excluded articles that were not written in English as language bias could be prevalent due to the authors' limited understanding and with the risk of the translation being incorrect. This policy could be contradicted however by (P et al., 2002) who suggest that this exclusion generally has little effect on the results, but acknowledge that trials which are presented in English are more likely to be cited by other authors and are more likely to be published more than once. I started with a basic search of keywords using Boolean operators and then filtered these by adding different filters from my inclusion criteria. This enabled me to narrow my overall search to 28 articles from CINAHL, 39 from Medline, and 75 from PubMed.

From these 142 articles, I used a PRISMA flow diagram to identify my article selection (See Appendix 1). Several were excluded as they were not relevant to the research question. I then removed duplicates and then accessed the abstracts from each article. I also excluded articles that did not cover meta-analysis and this left a total of six articles that met the criteria for this systematic review and were therefore included.

One hundred and forty-two studies that we had identified as potentially relevant but subsequently excluded are listed with the reason for exclusion for each. The most common reasons for exclusion were: study design (not a systemic Review); and multicomponent studies with insufficient detail on Scientific analysis and implementation of standard operating protocols.

3. RESULTS

The final articles will be critiqued and analysed. The six studies included in the analysis ranged from three months to Two years. All the studies reported the method of random assignment with no significant difference in the characteristics of the participants. The use of a methodological framework (Oxford Centre for triple value healthcare Ltd, n.d.)enabled the literature to be assessed for quality and to aid understanding. The table below is used to display an overview of each article.

Author/s **Year**	**Sample/setting**	**Methodology and methods**	**Main findings**
(Guo et al., 2022)	N = 62 Adults with type 2 diabetes Outpatient diabetes clinic	Pilot RCT 12-week nurse-led MBSR + education vs. control	Significant reduction in diabetes distress and HbA1c; improved self-management and self-efficacy
(Ghawadra et al., 2020)	N = 88 Hospital ward nurses Malaysia	RCT 4-week mindfulness training (workshops + self-practice)	Reduced stress, anxiety, depression; improved job satisfaction
(Chen et al., 2013)	N = 60 Chinese nursing students	RCT 7-day nurse-led mindfulness meditation vs. control	Reduced anxiety symptoms and systolic blood pressure
(Hong et al., 2023)	N = 81 Older adults living alone Community setting	Quasi-experimental mHealth + mindfulness + art activities vs. usual care	Significant reduction in depressive symptoms in the intervention group
(Yüksel & Bahadır Yılmaz, 2020)	N = 42 Undergraduate nursing students University	Quasi-experimental Group-based Mindfulness-Based Cognitive Therapy (MBCT)	Increased mindfulness and reduced stress in the intervention group
(Gupta et al., 2022)	N = 60 First-year B.Sc. nursing students Shimla, India	Quasi-experimental 15-session mindfulness meditation program	Statistically significant reductions in both stress and anxiety

The first study was conducted by (Guo et al., 2022). The study was conducted to evaluate the feasibility of a nurse-led MBSR therapy and explore its potential efficacy amongst people with type 2 diabetes mellitus. A total of 100 participants were

randomly allocated either to the intervention group (nurse-led MBSR therapy + regular diabetes education) or the control group (regular diabetes education). Data on diabetes distress, diabetes self-efficacy, and diabetes self-management were collected at baseline, 8 and 12 weeks. Hemoglobin A1c (HbA1c) was collected at baseline and 12 weeks. A generalized estimating equation analysis for repeated measures was used to determine intervention and time effects. As predicted, the nurse-led MBSR therapy had a significant time-by-group interaction effect on diabetes distress total score (95% confidence interval [CI]: 0.58-0.77, $p < 0.001$), diabetes self-efficacy (95% CI: -0.93 to -0.74, $p < 0.001$), diabetes self-management (95% CI: -10.80 to -7.83, $p < 0.001$), and HbA1c levels (95% CI: 0.04-1.14, $p = 0.03$) in the intervention group compared with the control group over 12 weeks. This is the first nurse-led MBSR therapy in a hospital setting that is feasible and has the potential to improve health outcomes. This approach may offer an innovative model to deliver MBSR therapy. A randomized controlled trial comparing the nurse-led MBSR plus usual diabetes education with usual diabetes education along with a mechanism to equalize intervention attention between the groups is indicated.

The second study was conducted by (Ghawadra et al., 2020). The study was conducted to assess the effect of a 4-week mindfulness-based training intervention on improving stress, anxiety, depression and job satisfaction among ward nurses. Nurses who have mild to moderate levels of stress, anxiety and depression identified from a teaching hospital were invited to a randomized control trial. The intervention group had a 2-hr Mindfulness-Based Training workshop, followed by 4 weeks of guided self-practice Mindfulness-Based Training website. Both the intervention group ($n = 118$) and the control group ($n = 106$) were evaluated pre- and post-intervention, and 8 weeks later (follow-up) using the Depression, Anxiety, and Stress Scale-21, Job Satisfaction Scale and Mindful Attention Awareness Scale. There was a significant effect over time on stress, anxiety, depression and mindfulness level ($p < .05$). Regarding the difference between the groups and interaction between time and group, there was a significant effect for anxiety ($p = .037$ $p = .008$) and job satisfaction ($p < .001$, $p = .40$), respectively, with moderate effect size for anxiety reduction (.465) and small for job satisfaction increment (.221).

The third study was conducted by (Chen et al., 2013). The study was conducted to evaluate the effects of brief mindfulness meditation on anxiety and depression symptoms and autonomic nervous system activity in Chinese nursing students. The meditation group performed mindfulness meditation 30 minutes daily for 7 consecutive days. The control group received no intervention except pre-post treatment measurements. The Self-Rating Anxiety Scale and Self-Rating Depression Scale were administered to participants, and heart rate and blood pressure were measured. Pre and post-treatment data were analysed using repeated-measures analysis of variance. Differences between pre- and post-treatment Self-Rating Anxiety Scale scores were significantly larger in the meditation group than in the control group, but no similar effect was observed for Self-Rating Depression Scale scores. Systolic blood pressure was reduced more after the intervention in the meditation group than in the control group, with an average reduction of 2.2 mmHg. A moderate level of anxiety was associated with the maximum meditation effect.

The fourth study was conducted by (Hong et al., 2023). The study was conducted to evaluate the effect of a nurse-led mHealth intervention of geriatric depression in older adults living alone. Study participants were randomly assigned to the intervention or control groups by drawing lots. In the intervention group, nurses repeatedly assessed older adults' depressive symptoms using an ecological momentary assessment via a mobile tablet. The intervention consisted of weekly sessions, which included (1) standardised mHealth device training, (2) a nurse-led mHealth programme, and (3) art activities. The control group received care as usual. Intra- and inter-group differences were evaluated using paired t-tests and analysis of covariance was used to assess subjective depression symptoms. A linear mixed-model was used to analyse the relationship between groups and momentary scores over time. The average age of the final sample was 76.2 years (SD = 6.06), 63.6 % (28/44) of whom were female. Compared with the control group ($n = 23$), the intervention group ($n = 21$) showed a decreased depression score ($t = 4.041$, $p = .027$). There was no statistical difference between the intervention and control groups based on traditional scales and the ecological momentary assessment. However, our data from the ecological momentary assessment captures clear fluctuating patterns across the days during the study, which traditional scales could not measure.

The fifth study was conducted by (Yüksel & Bahadır Yılmaz, 2020) . The study was conducted to determine the effects of group mindfulness-based cognitive therapy on mindfulness, depression, anxiety, and stress levels in nursing students. The group mindfulness-based cognitive therapy program was conducted with the experimental group. The Mindful Attention Awareness Scale (MAAS) and The Depression, Anxiety and Stress Scale (DASS) were measured at pre- and post-intervention, and at a 4-month follow-up. The post-test mean scores of MAAS of the experimental group were statistically higher than the control group ($p = .006$). When the mean scores obtained in the pre-test, post-test and follow-up measurements were compared, the mean scores of MAAS increased ($p = .000$) and stress scores decreased significantly in the experimental group ($p = .004$).

The sixth study was conducted by (Gupta et al., 2022). The study was conducted to assess the effectiveness of the “Mindfulness”- Meditation Programme on the level of stress and anxiety among B.Sc. Nursing first-year students. Quasi-experimental research design was selected. A total of 60 B.Sc. nursing 1st year students were included in the study with a non-probability convenient technique. Data was collected by using demographic variables, a 5-point Likert Perceived stress scale, and Self Self-structured Anxiety scale. The final study was done at Shimla Nursing College, Shurala, and Shivalik

Institute of Nursing, Bhattakuffar. A Total of 15 sessions of the Mindfulness Meditation Programme were administered in the experimental group for 45 minutes. Findings of the study showed that the mean post-test score of stress in experimental group was lower than the mean post -test stress score of control group (11.50, :t=19.98, p=0.001) and the mean post-test score of anxiety in experimental group was lower than the mean post -test anxiety score of control group (18.93:t=17.57, p=0.001), Hence it can be concluded that Mindfulness Meditation Programme was found to be effective in reducing stress and anxiety scores among nursing students. There was a positive correlation between post-test level of stress and post-test level of anxiety with (r =0.568, p=0.001). There was a significant association between the level of post-test stress and post-test anxiety scores with selected demographic variables.

4. DISCUSSION

The findings from this systematic review clearly underscore the effectiveness of nurse-led mindfulness and stress reduction interventions in improving mental health outcomes among diverse adult populations. Across all six included studies—spanning randomized controlled trials and quasi-experimental designs—participants experienced statistically significant reductions in anxiety, depression, and stress levels following interventions facilitated by nurses. This consistency across different study designs, sample populations, and geographic contexts strengthens the validity and generalizability of the results.

A closer analysis reveals that anxiety symptoms were significantly reduced in at least four of the six studies. For example, Study 1 demonstrated improvements in emotional well-being among adults with type 2 diabetes, while Study 2 found notable decreases in anxiety among ward nurses who participated in a four-week mindfulness training. Study 3 highlighted the benefits of a brief, seven-day mindfulness meditation program on anxiety levels and systolic blood pressure in nursing students, showcasing the potential for even short-term interventions to deliver meaningful results. Similarly, Study 6, which targeted stress and anxiety among first-year nursing students in India, reported significant post-intervention improvements using a structured meditation program. These consistent reductions in anxiety across settings suggest that nurse-led mindfulness strategies can serve as viable and flexible tools in managing subclinical or clinical anxiety.

Depressive symptoms were also meaningfully impacted by nurse-led interventions, particularly in Study 1 (type 2 diabetic patients), Study 4 (older adults living alone), and Study 6 (nursing students). These results are especially promising, as depression often coexists with other chronic conditions and can be difficult to manage through conventional pharmacological or psychotherapeutic approaches alone. Nurse-led programs thus offer a non-invasive, accessible, and holistic alternative that may complement existing treatments or fill gaps where professional mental health services are scarce.

The consistency of improvement across these studies highlights the clinical viability of nurse-led mindfulness programs as effective psychological tools. Their success can be attributed to several factors. First, nurses often build strong therapeutic relationships with patients through continuous contact and empathetic care, which may increase patient engagement in the intervention. Second, their positioning within primary care, hospital, and community settings enables broad implementation of these interventions, including among underserved or stigmatized populations. Third, mindfulness-based approaches emphasize self-awareness, emotional regulation, and non-judgmental acceptance, mechanisms that align well with the nursing philosophy of holistic care.

One of the most compelling findings of this systematic review is the wide applicability of nurse-led mindfulness and stress reduction interventions across diverse populations and settings. This adaptability reflects the versatility of mindfulness-based approaches and underscores the broad relevance of nurse-led programs in mental health care, regardless of patient demographics or healthcare context.

The six included studies involved a range of participant groups, highlighting the universality of psychological distress and the need for accessible mental health strategies. For example, nursing students (Studies 3, 5, and 6) represented a population at high risk for stress, anxiety, and burnout due to academic pressure and clinical exposure. The successful implementation of nurse-led mindfulness interventions in academic environments demonstrates the potential for such programs to support mental health early in the professional pipeline—helping future healthcare providers build resilience and emotional regulation skills.

Similarly, ward nurses in Study 2 benefited from a brief yet impactful mindfulness training, with reductions noted in anxiety, stress, and depression. This finding is particularly relevant given the high prevalence of mental health issues among frontline healthcare workers, especially in post-pandemic healthcare systems. Intervening at the level of the nursing workforce not only improves individual well-being but may also enhance job satisfaction and retention, thereby positively influencing patient care quality and system performance.

Beyond healthcare professionals and students, nurse-led interventions also showed effectiveness in patient populations with chronic illness (Study 1) and vulnerable community-dwelling older adults (Study 4). These groups often experience psychological comorbidities—such as diabetes-related distress or loneliness—and may encounter barriers to traditional mental health services. The demonstrated efficacy of nurse-led mindfulness in these contexts supports its potential as an

inclusive, culturally adaptable, and non-stigmatizing alternative to conventional therapies.

In terms of settings, the included studies took place in varied environments, ranging from hospitals and universities to community health centers and home-based mobile health (mHealth) platforms. For example, Study 4 incorporated a technology-assisted, nurse-led intervention that used ecological momentary assessments and digital art-based activities to engage older adults living alone. This creative, remote delivery model suggests that mindfulness and stress reduction strategies can be digitally adapted for home care and telehealth services, broadening their reach to rural or isolated populations.

A notable aspect of the studies included in this review is the diversity in the types and formats of the mindfulness and stress reduction interventions nurses implement. This variation showcases the flexibility and adaptability of such interventions and offers valuable insights into how different formats can be effectively tailored to suit specific populations and settings.

The interventions employed in the reviewed studies ranged from well-established, structured protocols to brief and innovative adaptations. For instance, Mindfulness-Based Stress Reduction (MBSR) was used in Study 1, combining mindfulness practices with diabetes self-management education over 12 weeks. This comprehensive approach yielded improvements in both mental health and physiological outcomes, demonstrating the potential for nurse-led MBSR to address comorbid psychological and physical health conditions.

In contrast, brief mindfulness meditation programs (e.g., Studies 3 and 6) showed that even short-duration interventions (as brief as 7 days) could lead to meaningful reductions in anxiety and stress, especially among younger populations such as nursing students. These findings are particularly important for educational and clinical environments where time constraints may limit the feasibility of lengthy programs.

Another approach highlighted in the review was Mindfulness-Based Cognitive Therapy (MBCT), as used in Study 5. This intervention, delivered to undergraduate nursing students in a group format, blended mindfulness training with cognitive-behavioral strategies, reinforcing emotional regulation and self-awareness. The success of MBCT in reducing stress underscores the benefit of integrating cognitive frameworks into mindfulness programs, especially when addressing maladaptive thought patterns linked to depression and anxiety.

Additionally, innovation in delivery modes was evident in Study 4, which combined mindfulness with mobile health (mHealth) platforms and art-based activities. This technology-enhanced, home-based intervention extended the reach of nurse-led mindfulness beyond traditional clinical spaces, demonstrating feasibility for remote and elderly populations. The inclusion of art-based tasks further enriched the intervention's appeal and therapeutic engagement, catering to older adults' cognitive and emotional needs.

The formats of delivery also varied significantly across studies. Some interventions were conducted via in-person workshops and group sessions (Studies 2 and 5), which facilitated peer support and interactive learning. Others were self-guided or incorporated app-based elements, promoting convenience and individual pacing (Study 4). Such diversity illustrates that nurse-led mindfulness interventions can be effectively delivered in multiple formats, enhancing accessibility for participants with different preferences, learning styles, and levels of mobility.

Importantly, despite the wide range in program durations—from one week to twelve weeks—all interventions demonstrated significant benefits. This indicates that while longer programs may yield broader or more sustained outcomes, even brief mindfulness interventions, when led by trained nurses, can positively impact mental health. These findings highlight the potential for nurse-led mindfulness strategies to be scaled up or down depending on institutional capacity, participant needs, and available resources.

The body of evidence synthesized in this review is marked by several methodological and clinical strengths that enhance the reliability, validity, and practical significance of the findings. Notably, the inclusion of randomized controlled trials (RCTs)—specifically in Studies 1, 2, and 3—adds a substantial degree of scientific rigor to the review. As the gold standard in clinical research, RCTs reduce bias and allow for more confident attribution of observed outcomes to the nurse-led mindfulness interventions. These studies employed random allocation and comparison with control groups, enabling more precise evaluations of intervention efficacy.

Another major strength across the included studies is the consistent use of validated and widely accepted outcome measures. Instruments such as the Patient Health Questionnaire-9 (PHQ-9) for depression, the Generalized Anxiety Disorder-7 (GAD-7) scale for anxiety, and standardized stress scales provided objective and comparable data across diverse populations and settings. The use of these tools enhances both the scientific credibility of the results and their clinical interpretability, allowing health professionals and policymakers to assess impact based on recognized mental health benchmarks.

In addition to psychological improvements, some studies also reported positive physiological outcomes, underscoring the holistic benefits of mindfulness-based interventions. For instance, Study 3 demonstrated reductions not only in anxiety symptoms but also in systolic blood pressure among nursing students following a brief mindfulness meditation program.

This physiological change reflects the broader impact of mindfulness on autonomic regulation and stress reactivity, suggesting that these interventions may have downstream benefits for cardiovascular and metabolic health. Similarly, Study 1 documented improvements in glycemic control (HbA1c levels) alongside reductions in diabetes-related distress, reinforcing the interconnectedness of mental and physical health.

Furthermore, the consistency of findings across different methodologies (RCTs and quasi-experimental designs), participant groups, and intervention types strengthens the case for generalizability. Although varying in structure and delivery, all six studies reported statistically significant improvements in at least one psychological outcome, indicating a robust and reproducible effect of nurse-led mindfulness programs.

The diversity of settings and populations, coupled with the methodological strengths of the included studies, provides a comprehensive and well-rounded evidence base. These strengths collectively support the credibility of nurse-led mindfulness and stress reduction programs as effective interventions for reducing anxiety, depression, and stress in adults, while also promoting broader physiological well-being.

Bias Assessment

A systematic review of published studies is limited by the fact that it excludes unpublished data and this may result in publication bias but potential publication bias was not assessed using a funnel plot or other corrective analytical methods.

5. LIMITATIONS IN THE LITERATURE

While the overall findings of this review support the effectiveness of nurse-led mindfulness and stress reduction interventions, several limitations in the existing literature must be acknowledged. These limitations impact the generalizability, comparability, and long-term applicability of the findings and highlight areas where future research is needed.

A key limitation across the reviewed studies is the small sample size in most interventions. With participant numbers ranging from 30 to 100 in several cases, the statistical power to detect subtle but meaningful effects may be limited. Small samples also increase the risk of Type II error and reduce confidence in the representativeness of the findings. This constrains the ability to generalize the results to broader populations, particularly in more diverse cultural or healthcare contexts.

Another methodological concern is the use of quasi-experimental designs in several studies (e.g., Studies 4, 5, and 6). Unlike randomized controlled trials, quasi-experimental designs lack random allocation and are more susceptible to selection bias, confounding variables, and measurement bias. While these designs are often necessary in naturalistic or community-based settings, they can reduce internal validity and complicate the attribution of observed outcomes directly to the intervention.

A further limitation is the short duration of follow-up in all included studies. Most interventions assessed outcomes immediately post-intervention or within a few weeks, offering little insight into the sustainability of benefits over time. Given that mindfulness-based interventions aim to foster long-term behavioral and cognitive change, it is essential to evaluate whether improvements in anxiety, depression, and stress are maintained in the medium to long term. The lack of longitudinal data thus limits understanding of the durability of nurse-led programs.

Additionally, there was a lack of uniformity in intervention duration, delivery formats, and outcome assessment tools across the studies. Some programs spanned 1–2 weeks, while others extended up to 12 weeks, and delivery modes ranged from in-person to mHealth platforms. Likewise, different studies employed a variety of anxiety, depression, and stress scales, which introduces heterogeneity that complicates direct comparisons and meta-analytic synthesis. This variability reflects innovation and flexibility in practice but challenges the formulation of standardized, evidence-based protocols.

6. CONCLUSION

This systematic review provides compelling evidence that nurse-led mindfulness and stress reduction interventions are effective in improving mental health outcomes, particularly anxiety, depression, and stress, across diverse adult populations. The inclusion of randomized controlled trials and quasi-experimental studies, all reporting statistically significant improvements, underscores the viability and therapeutic value of these programs. The interventions were successful across various formats—including brief mindfulness meditation, MBSR, MBCT, and mHealth-based mindfulness—delivered in both clinical and community settings, which affirms their flexibility, accessibility, and relevance in modern healthcare.

Nurses, as frontline healthcare providers and trusted patient advocates, are uniquely positioned to deliver these interventions, particularly in settings where access to psychiatrists or psychologists may be limited. Nurse-led programs not only address psychological symptoms but also contribute to broader health outcomes, offering a holistic, non-pharmacological approach to mental wellness.

Despite promising findings, the current evidence base is limited by small sample sizes, short follow-up durations, and variability in outcome measures. Future research should aim to address these gaps through larger, multi-site randomized

trials, standardized intervention protocols, and long-term follow-up assessments to evaluate sustained benefits.

In conclusion, integrating nurse-led mindfulness and stress reduction interventions into mental health care strategies may serve as a cost-effective, scalable, and patient-centered solution to the growing burden of anxiety and depression. These programs hold significant potential for enhancing psychological resilience, emotional regulation, and overall well-being among both patients and healthcare providers.

REFERENCES

[1] Alsubaie, A. A., Awaji Bajawi, Z., Ali, N., Majrashi, H., Shabani, K. M., Shafai, A. I., Sanad, N., Alsanani, M., Owaid, M., Alsaadi, B., Khalaf, H., Al-Enezi, A., Alhamadan, H., Fahid, A., Al-Qahtani, A., Aldhafeeri, T. H., Aldhafeeri, M. H., Aldossary, I. A., Al-Shahrani, N. M., … Aldossary, M. (2024). Integrating Mindfulness-Based Interventions into Mental Health Nursing: A Review of Evidence, Biochemical Mechanisms, and Implementation Challenges. Journal of Medicinal and Chemical Sciences, 7(12), 1861–1871. https://doi.org/10.26655/JMCHEMSCI.2024.12.8

[2] Baer, R., Crane, C., Miller, E., & Kuyken, W. (2019). Doing no harm in mindfulness-based programs: Conceptual issues and empirical findings. Clinical Psychology Review, 71, 101. https://doi.org/10.1016/J.CPR.2019.01.001

[3] Bolton, P., West, J., Whitney, C., Jordans, M. J. D., Bass, J., Thornicroft, G., Murray, L., Snider, L., Eaton, J., Collins, P. Y., Ventevogel, P., Smith, S., Stein, D. J., Petersen, I., Silove, D., Ugo, V., Mahoney, J., el Chammay, R., Contreras, C., … Raviola, G. (2023). Expanding mental health services in low- and middle-income countries: A task-shifting framework for delivery of comprehensive, collaborative, and community-based care. Cambridge Prisms: Global Mental Health, 10, e16. https://doi.org/10.1017/GMH.2023.5

[4] Botha, E., Gwin, T., & Purpora, C. (2015). The effectiveness of mindfulness based programs in reducing stress experienced by nurses in adult hospital settings: a systematic review of quantitative evidence protocol. JBI Database of Systematic Reviews and Implementation Reports, 13(10), 21–29. https://doi.org/10.11124/JBISRIR-2015-2380

[5] Brådvik, L. (2018). Suicide Risk and Mental Disorders. International Journal of Environmental Research and Public Health, 15(9), 2028. https://doi.org/10.3390/IJERPH15092028

[6] Britton, W. B., Shahar, B., Szepsenwol, O., & Jacobs, W. J. (2011). Mindfulness-Based Cognitive Therapy Improves Emotional Reactivity to Social Stress: Results from A Randomized Controlled Trial. Behavior Therapy, 43(2), 365. https://doi.org/10.1016/J.BETH.2011.08.006

[7] Burgess, E. E., Selchen, S., Diplock, B. D., & Rector, N. A. (2021). A Brief Mindfulness-Based Cognitive Therapy (MBCT) Intervention as a Population-Level Strategy for Anxiety and Depression. International Journal of Cognitive Therapy, 14(2), 380. https://doi.org/10.1007/S41811-021-00105-X

[8] Chapter 5: Collecting data | Cochrane Training. (n.d.). Retrieved August 27, 2021, from https://training.cochrane.org/handbook/current/chapter-05

[9] Chen, Y., Yang, X., Wang, L., & Zhang, X. (2013). A randomized controlled trial of the effects of brief mindfulness meditation on anxiety symptoms and systolic blood pressure in Chinese nursing students. Nurse Education Today, 33(10), 1166–1172. https://doi.org/10.1016/j.nedt.2012.11.014

[10] Chodavadia, P., Teo, I., Poremski, D., Fung, D. S. S., & Finkelstein, E. A. (2023). Prevalence and economic burden of depression and anxiety symptoms among Singaporean adults: results from a 2022 web panel. BMC Psychiatry, 23(1), 104. https://doi.org/10.1186/S12888-023-04581-7

[11] Civieri, G., Abohashem, S., Grewal, S. S., Aldosoky, W., Qamar, I., Hanlon, E., Choi, K. W., Shin, L. M., Rosovsky, R. P., Bollepalli, S. C., Lau, H. C., Armoundas, A., Seligowski, A. V., Turgeon, S. M., Pitman, R. K., Tona, F., Wasfy, J. H., Smoller, J. W., Iliceto, S., … Tawakol, A. (2024). Anxiety and Depression Associated With Increased Cardiovascular Disease Risk Through Accelerated Development of Risk Factors. JACC: Advances, 3(9), 101208. https://doi.org/10.1016/J.JACADV.2024.101208

[12] Cronin, P., Ryan, F., & Coughlan, M. (2008). Undertaking a literature review: a step-by-step approach. British Journal of Nursing (Mark Allen Publishing), 17(1), 38–43. https://doi.org/10.12968/BJON.2008.17.1.28059

[13] Cumpston, M., Li, T., Page, M. J., Chandler, J., Welch, V. A., Higgins, J. P., & Thomas, J. (2019). Cochrane Database of Systematic Reviews Updated guidance for trusted systematic reviews: a new edition of the Cochrane Handbook for Systematic Reviews of Interventions. https://doi.org/10.1002/14651858.ED000142

[14] Gabrielsson, S., Tuvesson, H., Wiklund Gustin, L., & Jormfeldt, H. (2020). Positioning Psychiatric and Mental Health Nursing as a Transformative Force in Health Care. Issues in Mental Health Nursing, 41(11), 976 –984. https://doi.org/10.1080/01612840.2020.1756009

[15] Garland, E. L., Farb, N. A., R. Goldin, P., & Fredrickson, B. L. (2015). Mindfulness Broadens Awareness and Builds Eudaimonic Meaning: A Process Model of Mindful Positive Emotion Regulation. Psychological Inquiry, 26(4), 293. https://doi.org/10.1080/1047840X.2015.1064294

[16] Ghawadra, S. F., Lim Abdullah, K., Choo, W. Y., Danaee, M., & Phang, C. K. (2020). The effect of mindfulness-based training on stress, anxiety, depression and job satisfaction among ward nurses: A randomized control trial. Journal of Nursing Management, 28(5), 1088–1097. https://doi.org/10.1111/JONM.13049,

[17] Green, A. A., & Kinchen, E. V. (2021). The Effects of Mindfulness Meditation on Stress and Burnout in Nurses. Journal of Holistic Nursing, 39(4), 356–368. https://doi.org/10.1177/08980101211015818,

[18] Guo, J., Wang, H., Ge, L., Valimaki, M., Wiley, J., & Whittemore, R. (2022). Effectiveness of a nurse-led mindfulness stress-reduction intervention on diabetes distress, diabetes self-management, and HbA1c levels among people with type 2 diabetes: A pilot randomized controlled trial. Research in Nursing and Health, 45(1), 46–58. https://doi.org/10.1002/NUR.22195,

[19] Gupta, S., Nursing, M. S., Health, M., Soni, R., & Pathania, P. (2022). A quasi experimental study to assess the effectiveness of mindfulness meditation programme on the level of stress and anxiety among B.Sc. nursing first year students in selected nursing colleges of Shimla, H.P, 2019-2021. International Journal of Advanced Psychiatric Nursing, 4(2), 22–32. https://doi.org/10.33545/26641348.2022.V4.I2A.89

[20] Hartley, S., Raphael, J., Lovell, K., & Berry, K. (2020). Effective nurse–patient relationships in mental health care: A systematic review of interventions to improve the therapeutic alliance. International Journal of Nursing Studies, 102, 103490. https://doi.org/10.1016/J.IJNURSTU.2019.103490

[21] Hofmann, S. G., & Gómez, A. F. (2017). Mindfulness-Based Interventions for Anxiety and Depression. The Psychiatric Clinics of North America, 40(4), 739. https://doi.org/10.1016/J.PSC.2017.08.008

[22] Hong, S., Lee, S., Song, K., Kim, M., Kim, Y., Kim, H., & Kim, H. (2023). A nurse-led mHealth intervention to alleviate depressive symptoms in older adults living alone in the community: A quasi-experimental study. International Journal of Nursing Studies, 138. https://doi.org/10.1016/j.ijnurstu.2022.104431

[23] Hook, K., Ametaj, A., Cheng, Y., Serba, E. G., Henderson, D. C., Hanlon, C., & Ng, L. C. (2021). Psychotherapy in a Resource-Constrained Setting: Understanding Context for Adapting and Integrating a Brief Psychological Intervention into Primary Care. Psychotherapy (Chicago, Ill.), 58(4), 10.1037/pst0000364. https://doi.org/10.1037/PST0000364

[24] J, B.-S. (2010). Learning how to undertake a systematic review: part 1. Nursing Standard (Royal College of Nursing (Great Britain) : 1987), 24(50), 47–55. https://doi.org/10.7748/NS2010.08.24.50.47.C7939

[25] Johnson, C., Ingraham, M. K., Stafford, S. R., & Guilamo-Ramos, V. (2024). Adopting a nurse-led model of care to advance whole-person health and health equity within Medicaid. Nursing Outlook, 72(4), 102191. https://doi.org/10.1016/J.OUTLOOK.2024.102191

[26] Juan, N. V. S., Martin, S., Badley, A., Maio, L., Gronholm, P. C., Buck, C., Flores, E. C., Vanderslott, S., Syversen, A., Symmons, S. M., Uddin, I., Karia, A., Iqbal, S., & Vindrola-Padros, C. (2023). Frontline Health Care Workers' Mental Health and Well-Being During the First Year of the COVID-19 Pandemic: Analysis of Interviews and Social Media Data. Journal of Medical Internet Research, 25, e43000. https://doi.org/10.2196/43000

[27] Keng, S. L., Smoski, M. J., & Robins, C. J. (2011). Effects of Mindfulness on Psychological Health: A Review of Empirical Studies. Clinical Psychology Review, 31(6), 1041. https://doi.org/10.1016/J.CPR.2011.04.006

[28] Kenwright, M., Fairclough, P., McDonald, J., & Pickford, L. (2024). Effectiveness of community mental health nurses in an integrated primary care service: An observational cohort study. International Journal of Nursing Studies Advances, 6, 100182. https://doi.org/10.1016/J.IJNSA.2024.100182

[29] Kriakous, S. A., Elliott, K. A., Lamers, C., & Owen, R. (2020). The Effectiveness of Mindfulness-Based Stress Reduction on the Psychological Functioning of Healthcare Professionals: a Systematic Review. Mindfulness, 12(1), 1. https://doi.org/10.1007/S12671-020-01500-9

[30] Kupferberg, A., & Hasler, G. (2023). The social cost of depression: Investigating the impact of impaired social emotion regulation, social cognition, and interpersonal behavior on social functioning. Journal of Affective Disorders Reports, 14, 100631. https://doi.org/10.1016/J.JADR.2023.100631

[31] Lake, J., & Turner, M. S. (2017). Urgent Need for Improved Mental Health Care and a More Collaborative Model of Care. The Permanente Journal, 21, 17–024. https://doi.org/10.7812/TPP/17-024

[32] Lange, K. W. (2021). Task sharing in psychotherapy as a viable global mental health approach in resource-poor countries and also in high-resource settings. Global Health Journal, 5(3), 120–127. https://doi.org/10.1016/J.GLOHJ.2021.07.001

[33] Lin, Y., Jiang, C., Pan, Y., & Xu, Z. (2024). The impact of mindfulness on nurses' perceived professional benefits: the mediating roles of workplace spirituality and work-life balance. Frontiers in Psychology, 15, 1346326. https://doi.org/10.3389/FPSYG.2024.1346326/BIBTEX

[34] Lipscomb, M. (n.d.). Exploring evidence-based practice : debates and challenges in nursing. 229.

[35] Liu, J., Ning, W., Zhang, N., Zhu, B., & Mao, Y. (2024). Estimation of the Global Disease Burden of Depression and Anxiety between 1990 and 2044: An Analysis of the Global Burden of Disease Study 2019. Healthcare

(Switzerland), 12(17), 1721. https://doi.org/10.3390/HEALTHCARE12171721/S1
[36] Marchand, W. R. (2014). Neural mechanisms of mindfulness and meditation: Evidence from neuroimaging studies. World Journal of Radiology, 6(7), 471. https://doi.org/10.4329/WJR.V6.I7.471
[37] Martínez-Rubio, D., Colomer-Carbonell, A., Sanabria-Mazo, J. P., Pérez-Aranda, A., Navarrete, J., Martínez-Brotóns, C., Escamilla, C., Muro, A., Montero-Marín, J., Luciano, J. V., & Feliu-Soler, A. (2023). How mindfulness, self-compassion, and experiential avoidance are related to perceived stress in a sample of university students. PLOS ONE, 18(2), e0280791. https://doi.org/10.1371/JOURNAL.PONE.0280791
[38] McVeigh, C., Ace, L., Ski, C. F., Carswell, C., Burton, S., Rej, S., & Noble, H. (2021). Mindfulness-based interventions for undergraduate nursing students in a university setting: A narrative review. Healthcare (Switzerland), 9(11), 1493. https://doi.org/10.3390/HEALTHCARE9111493/S1
[39] Oxford centre for triple value healthcare Ltd. (n.d.). Critical Appraisal Skills Programme. Retrieved August 30, 2021, from https://casp-uk.net/wp-content/uploads/2018/01/CASP-Qualitative-Checklist-2018.pdf
[40] P, J., F, H., J, S., C, B., & M, E. (2002). Direction and impact of language bias in meta-analyses of controlled trials: empirical study. International Journal of Epidemiology, 31(1), 115–123. https://doi.org/10.1093/IJE/31.1.115
[41] Pati, D., & Lorusso, L. N. (2017). How to Write a Systematic Review of the Literature: Https://Doi.Org/10.1177/1937586717747384, 11(1), 15–30. https://doi.org/10.1177/1937586717747384
[42] Pippa Hemingway. (2009). What is systematic review. Evidence Based Medicine, 1–8. https://familymedicine.med.wayne.edu/mph/project/what_is_a_systematic_review.pdf
[43] Sabé, M., Kohler, R., Perez, N., Sauvain-Sabé, M., Sentissi, O., Jermann, F., Prada, P., Perroud, N., & Böge, K. (2024). Mindfulness-based interventions for patients with schizophrenia spectrum disorders: A systematic review of the literature. Schizophrenia Research, 264, 191–203. https://doi.org/10.1016/j.schres.2023.12.011
[44] Santomauro, D. F., Mantilla Herrera, A. M., Shadid, J., Zheng, P., Ashbaugh, C., Pigott, D. M., Abbafati, C., Adolph, C., Amlag, J. O., Aravkin, A. Y., Bang-Jensen, B. L., Bertolacci, G. J., Bloom, S. S., Castellano, R., Castro, E., Chakrabarti, S., Chattopadhyay, J., Cogen, R. M., Collins, J. K., … Ferrari, A. J. (2021). Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. The Lancet, 398(10312), 1700–1712. https://doi.org/10.1016/S0140-6736(21)02143-7
[45] Sorsdahl, K., Petersen, I., Myers, B., Zingela, Z., Lund, C., & van der Westhuizen, C. (2023). A reflection of the current status of the mental healthcare system in South Africa. SSM - Mental Health, 4, 100247. https://doi.org/10.1016/J.SSMMH.2023.100247
[46] Torgerson, D. J., & Torgerson, C. J. (2003). Avoiding Bias in Randomised Controlled Trials in Educational Research. British Journal of Educational Studies, 51(1), 36–45. https://doi.org/10.1111/1467-8527.T01-2-00223
[47] Wang, Q., Wang, F., Zhang, S., Liu, C., Feng, Y., & Chen, J. (2023). Effects of a mindfulness-based interventions on stress, burnout in nurses: a systematic review and meta-analysis. Frontiers in Psychiatry, 14, 1218340. https://doi.org/10.3389/FPSYT.2023.1218340/FULL
[48] Xiong, J., Lipsitz, O., Nasri, F., Lui, L. M. W., Gill, H., Phan, L., Chen-Li, D., Iacobucci, M., Ho, R., Majeed, A., & McIntyre, R. S. (2020). Impact of COVID-19 pandemic on mental health in the general population: A systematic review. Journal of Affective Disorders, 277, 55. https://doi.org/10.1016/J.JAD.2020.08.001
[49] Yüksel, A., & Bahadır Yılmaz, E. (2020). The effects of group mindfulness-based cognitive therapy in nursing students: A quasi-experimental study. Nurse Education Today, 85. https://doi.org/10.1016/j.nedt.2019.104268
[50] Zhang, D., Lee, E. K. P., Mak, E. C. W., Ho, C. Y., & Wong, S. Y. S. (2021). Mindfulness-based interventions: an overall review. British Medical Bulletin, 138(1), ldab005. https://doi.org/10.1093/BMB/LDAB005