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EFFECT OF MINDFULNESS-BASED STRESS REDUCTION INTERVENTION ON OCCUPATIONAL STRESS AMONG NURSES: A SYSTEMATIC REVIEW

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Abstract

Background: *The nursing profession has been identified as stressful. The need for tools to promote well-being at work is growing. Interventions focused on mindfulness can reduce stress levels, improving nurses' psychological health.*

Objective: *This systematic review aims to determine mindfulness-based stress reduction (MBSR) intervention outcomes among nurses.*

Methods: *Four databases were searched as part of a review, including PubMed, Medline, CINHAL, and PsycINFO. Furthermore, it followed the Prisma P protocol, including English-language articles from January 2010 to July 2020.*

Results: *There was a total of 800 subjects, and 12 studies were used for the present systematic review. Level stress was the outcome measure. Twelve studies showed the beneficial effects of a mindfulness-based intervention on stress reduction that improves the psychological health of nurses.*

Conclusion: *Interventions focused on mindfulness can improve nurses' well-being. To evaluate the effectiveness of mindfulness training, studies with strict constant end measures, larger sample sizes, and equal gender are needed.*

INTRODUCTION

It is documented that the nursing profession has been recognized as a stressful profession. Nurses face imperatively difficult tasks, including substantial workloads, long stays, family issues, shortages of nurses, long working hours, and critical conditions. Stress has been identified as a relatively imperative occupational health hazard affecting nurses' physical and psychological health. Stress has a significant impact on nurses' health. It is shown by current research that stress can lead to altering human homeostasis and physiological and hormonal balance. Furthermore, stress may cause fatigue, cardiac disorders, obesity, and anxiety. Recent research established that stress could lead to absenteeism, reduced job satisfaction, workplace turnover, and burnout, which could deter work performance and activity[1].

Moreover, it is portrayed that stress has serious consequences, such as poor service quality, increased medical errors, reduced patient satisfaction, and ineffective communication.

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Consequently, there is a dire need for nurses to implement effective stress-reduction approaches that can considerably reduce stress levels.

MBSR interventions are used to reduce stress levels. MBSR interventions can help stabilise mood and improve physical health. Additionally, MBSR can be utilized to improve the psychological functioning of healthcare professionals[3]. It is exhibited in a current review that mindfulness considerably decreases the stress level among nurses. It is revealed by current research that MBSR intervention relatively reduces stress levels among nurses.[5]

Thus, the present systematic review intended to assess the effectiveness of BMSR intervention in published studies utilized to reduce stress levels among nurses.

Research questions

The PICOS model (population, intervention, comparison, outcome, and study) was utilized to direct the review. Nurses made up the population, mindfulness-based stress reduction interventions were used (there is no comparison to be made), and level stress reduction was the result.

- What have mindfulness-based stress reduction interventions been applied to decrease nurses' stress levels?
- What metrics have been employed to assess stress levels and mindfulness-based stress reduction interventions?
- How effectively can mindfulness-based stress reduction interventions be used in reducing stress levels in nurses?

METHODS

Study design

The quasi-experimental studies and randomized controlled trial (RCT) were included in the current systematic review.

Study participants

Quasi-experimental studies and RCTs whose participants were aged 24 years and above were included. Regarding participants' characteristics, 800 subjects were included in the 12 studies that were analysed. The included studies' sample sizes ranged from 41 to 224 people, depending on the study. Inpatient wards, hospital wards, clinical nurses, hospital nurses, registered nurses, female nurses from heart centre hospitals, and ward nurses were all participants in all studies. Nurses working in critical care, intensive care, oncology, and hospital wards were also included. Two studies had only female participants, whereas the other five used mixed samples with 33 male participants. Four studies did not disclose the genders of the subjects.

Intervention

Mindfulness-based stress reduction intervention was utilized in this systematic review.

Comparator

The subjects who are enrolled in the control group received either standard treatment or no mindfulness-based stress reduction intervention.

Outcome

Change in findings in baseline and after the intervention was the primary outcome.

Search methods

The literature was searched by four databases, including PubMed, Medline, CINHAL, and PsycINFO. Furthermore, it followed the Prisma P protocol, including English-language articles from January 2010 to July 2020. PRISMA P guidelines were used to accomplish the present systematic review in the English language. About boosting search sensitivity, Boolean operators were utilized to combine search phrases (MESH terms nurse AND mindfulness, mindfulness OR nurse, and stress AND mindfulness). Two researchers (SC and SR) employed the task concerning the literature review and screening. The task related to checking references and citations was carried out by one researcher (IR). There is literature on mindfulness. However, a systematic review has not been employed among nurses. Hence, the present systematic review was carried out to assess and evaluate the impact of MBSR intervention on stressed nurses. For this reason, the quality of the studies was assessed and evaluated to effectively illustrate the status of present knowledge and

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recommend future directions to reduce the stress level through MBSR intervention.

Study Selection

The research articles assessed comprehensively that met the inclusion and exclusion criteria pertaining to eligibility. The research study fulfilled the following criteria: Quasi-experimental studies and randomized controlled trials (RCTs), related to mindfulness-based stress reduction interventions, associated with nurses, registered nurses working in hospitals, and written in English. The research studies conducted on nursing students, cross-sectional studies, case-control studies, cohort studies, case reports, case series, editorials, reviews, qualitative studies, and pilot studies were excluded from the present systematic review.

Data collection procedure

With regard to data extraction, a data extraction form was generated and piloted before data extraction. Abstracts were subjected to the inclusion criteria, and any questions were discussed by two reviewers (SC and SR). Two reviewers (SC and IR) went through each abstract flagged as maybe or extremely significant to determine whether it was admissible. A consensus was reached to resolve disagreements among reviewers over the inclusion of a study. Before deciding on the calibre of the investigations, two reviewers (WAM and SR) examined the retrieved data and made any necessary modifications.

Data items

The data, which was extracted from the included studies, is as follows;

1. Information was obtained related to the author's name, year of publication, and country.
2. Subjects' information about age, sample size, and gender in the control group and treatment group.
3. Information related to mindfulness-based stress reduction intervention sessions and duration.
4. Information about response variables on the baseline and after the intervention.

Quality evaluation

The methodological excellence of studies was evaluated using the JBI (Joanna Briggs Institute) critical appraisal methods. The JBI is a non-profit, worldwide progress and research body that has created numerous critical appraisal instruments to assess the correctness, likelihood, and efficiency of healthcare initiatives. Thus, the JBI critical appraisal methods for quasi-experimental studies and RCTs were employed to evaluate the excellence of reporting in the articles.

Likewise, the critical assessment instruments related to quasi-experimental studies and RCTs comprised 13 questions. The questions have "yes" and "no" responses. A study is labelled "unclear" if it does not precisely present data relevant to a healthy subject. A question is labelled "not applicable (NA)" if it does not apply to the study. Two independent reviewers (SS and RK) evaluated the quality of each study. To address disagreements, a conversation was held on an internet forum until an agreement was reached.

Systematic Review

The systematic technique was used to narratively summarise the systematic review results.

Search outcomes

PRISMA P protocol was utilized to select the papers. There were twelve articles discovered in the identified papers' references, as well as published systematic reviews and meta-analyses. The selection was made after RCTs' critical evaluation by using the JBI critical evaluation checklists after reading the complete texts of seventeen papers. Twelve papers were subsequently accepted after taking into account the above-mentioned inclusion and exclusion criteria.

Study characteristics

Two of the included papers were carried out in Iran and Malaysia, and the remaining five were done in Australia, the United States, Ireland, and Portugal. Studies were released from 2014 to 2020. One nonrandomized wait-list comparison design, two controlled trials, and three RCT designs were used. Three months were spent intervening.

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Bias potential in studies

The JBI criteria for the effectiveness of RCTs assigned the data from three RCTs a Level 1. c rating. Concerning evaluation, three pre-test/post-test studies' evidence was evaluated at Level 2.

In two trials, nurses were randomly allocated using a web-based randomization program. However, one study used stratified block randomization as its randomization method. It is noted that there was no chance for nurses or instructors giving MBSR interventions to be blind since all-encompassing trials are essential subjects to perform mindfulness-based training as an intervention, and another study selected their analysis was carried out blindly. No one study offered a detailed description of the blinding procedure. In two investigations, nurses who were available and assigned to the study underwent intention-to-treat analyses. A loss to follow-up was reported in one trial, but an intention-to-treat analysis based on the initially assigned groups was not conducted[7].

As summarized by Gu J et al., one study's use of various justifications for having a control group led to the classification of this study as having an unknown risk of bias. To determine whether there were any differences between. However, one study did not provide enough analysis information, so it was labelled as having an unclear risk of detection bias[8].

Features of interventions based on mindfulness

Excluding one study, all of the mindfulness-based programs were delivered in person. In one study, neither the intervention's methodology nor its implementers were disclosed. In contrast to other studies, Ghawadra et al (2020).'s report a two-hour class followed by four weeks of self-practice utilizing a website as a reference. During the nine studies listed, the people who carried out the mindfulness-based programs, only two studies provided information regarding the people who delivered the interventions. An author was the mindfulness teacher in two studies. The author of the study, Duarte and Pinto-Gouveia (2016), also took part in several retreats, training sessions, and other mindfulness-based training and meditation activities[10]. The author of the intervention was not acknowledged in the study by Ghawadra et al. (2020)[9]. Also, no study provided any information on the sessions' time.

RESULTS

Because of the diverse emphasis on the study objectives in these studies, various measurement instruments were used. Stress, mentioned in seven articles, was the most often assessed consequence. As disclosed by Tseng HW et al., anxiety, stress, depression, quality of life, burnout, self-compassion, resilience, happiness, and mindfulness level were considered outcome measures of the research. Results were measured using a total of 30 different measuring devices and instruments. Maslach Burnout Inventory (MBI), utilized in five of the research, was the most frequently employed tool, with Depression, Anxiety, and Stress Scale (DASS-21) coming in second. Both are widely used tools that have been translated into a variety of languages and are used often by a large number of scholars. The included studies employed a maximum of seven instruments, each using two or more instruments. Although they were described in seven of the selected papers, the remaining four studies did not specify the reliability and validity of the used scales[11].

Mindfulness-based Interventions effectiveness

Related to mindfulness-based stress reduction interventions, twelve studies were potentially helpful since all the outcomes assessed in the trials were favourable. In twelve of the trials, mindfulness-based programs were significantly influenced by primary outcomes. Seven studies that measured stress found that mindfulness-based interventions reduce nurses' stress levels. Improvements were also noted in the side effects. Programs focused on mindfulness were reported to lessen nurses' burnout in five studies. Five concluded that programs connected to mindfulness were successful in raising levels of awareness. Four studies revealed that mindfulness-based training was effective at raising nurses' levels of self-compassion[1]

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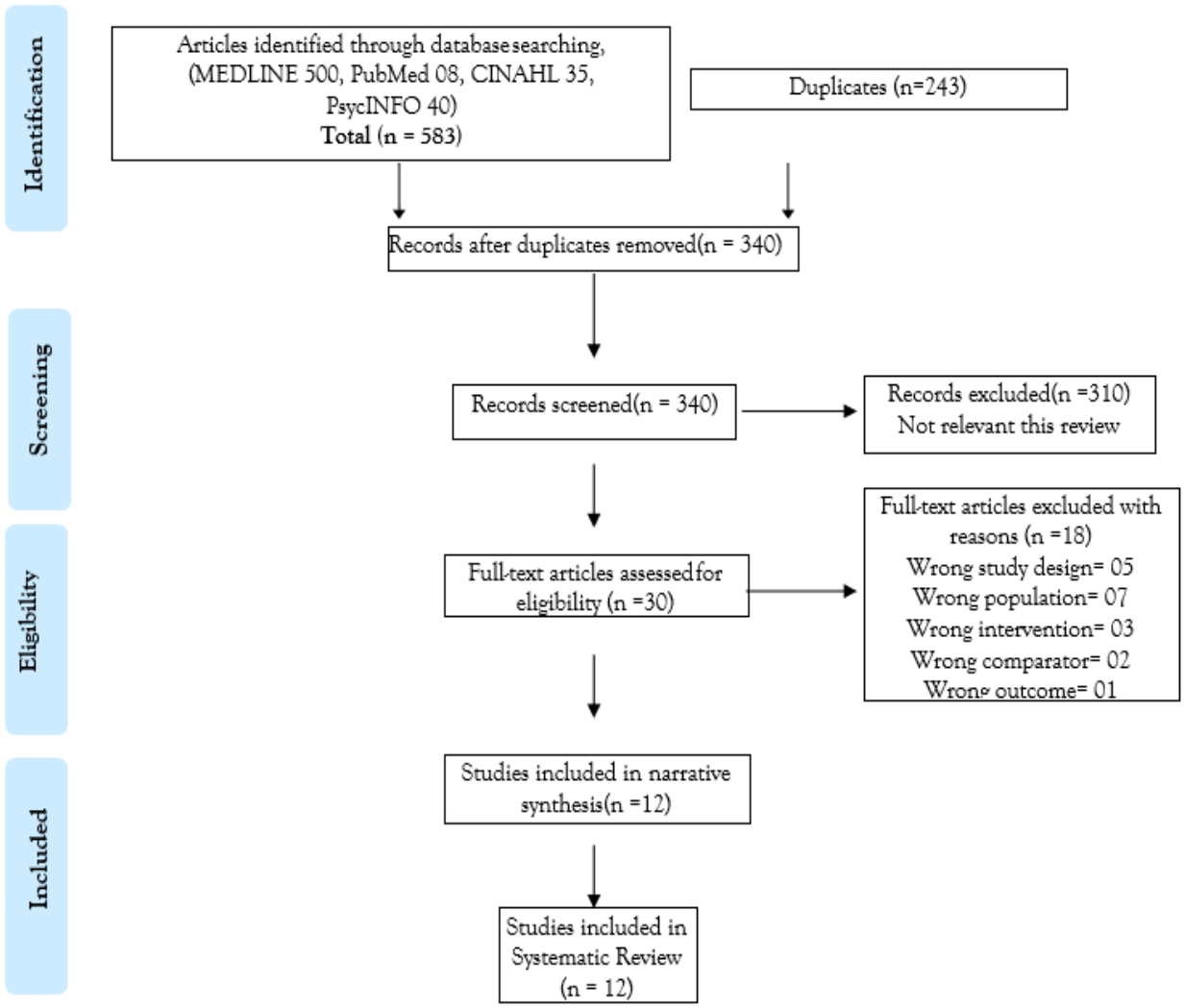

Figure-1 PRISMA flow chart

DISCUSSION

The current review study was conducted on the possible impact of currently available MBSR interventions on nurses' stress reduction. Twelve papers met the criteria for inclusion. Generally, the findings suggest that therapies that focus on mindfulness have a good effect on stress reduction and nurses' psychological health. Except for one study, all others found that MBSR interventions had positive benefits. Hitherto, the length of the MBSR interventions in the studies is diverse and contingent on the MBSR intervention's type and study environment. The mixed data for dose-response and long-term effects do not support strong causal conclusions. This research proved that mindfulness-related therapies effectively decreased stress levels and increased nurses' psychological well-being, consistent with findings from earlier systematic studies. This review, even so, is unique from others. Likewise, Ghawadra et al. (2019) conducted a systematic review that primarily focused on psychological distress in nurses[9]. It is disclosed that sampled nurses incorporated mindfulness training as an intervention, though burnout was the only outcome discussed. It is summarized other systematic reviews that examine the efficacy of mindfulness among other healthcare workers.

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Conversely, it should be emphasized that the results of these systematic reviews may differ depending on the types and levels of stress experienced by healthcare professionals[8]. To the best of our knowledge, the effectiveness of mindfulness-related treatments to reduce stress and increase psychological well-being among nurses has never been systematically reviewed, with a focus on research released between 2011 and 2021. It should be highlighted that this systematic study, rather than focusing on other healthcare professions, particularly examined nurses.

It is designated that the robustness of the prior research used in this review revealed that while there were some methodological flaws, the majority of it had a moderate overall quality. It is crucial to note that the sample sizes of the six studies were modest and that five of them mostly involved female individuals. Only female participants were chosen for two trials, which may have impacted the sample's representativeness and the results' generalizability. Four studies did not report the gender of the subjects. Male and female nurses are likely to react to MBSR interventions differently. Male undergraduates reported higher well-being than female undergraduates[12].

Although several studies employed reliable outcome measures, this systematic review emphasized that when they examined diverse aspects of psychological well-being, there was little uniformity among the studies and a lot of variation (anxiety, stress, burnout, and depression, to name a few). Both the outcomes and the scales used to evaluate them showed a large variation in the result measurements. The included studies utilized a total of 30 distinct instruments, the majority of which were self-report. Despite the known biases in self-reports of measures in the included research, it is crucial to note that there are numerous categories for which there are no acceptable substitutes[8]. However, according to the current review, the scales' reliability and validity were not reported in the four investigations. Important indicators of a measuring instrument's quality include validity and reliability. Hence, it is challenging to say if the tools utilized in this research were useful in measuring the desired outcomes of the interventions. The best intervention studies to determine the psychological well-being of nurses are those that use validated and widely used metrics.

Only one study found no change in nurses' well-being among the ten that found improvements. The mindfulness intervention strategies all have the same objective: to teach individuals how to be more conscious of their emotions and viewpoints and improve the relationship between the two, while having slightly different procedures. Despite using a mindfulness-based stress management program as its intervention, one study could not uncover any conclusive outcomes. This gap can be caused by the cognitive behavioral model's influence on the content of mindfulness interventions. This model aids people in understanding the connection between stressful events and emotional reactions, which may be a distinct approach to cognition and, as a result, may have produced a non - significant outcome. Although the majority of the included research revealed some promising results, one study discovered no appreciable changes in job satisfaction, while another discovered only a slight influence. It is portrayed that only two studies evaluated job satisfaction as a result. Because of the complexity of job happiness and the numerous elements that contribute to it, it may not have been possible for the MBSR interventions used in this research to significantly increase job satisfaction (12 weeks and eight weeks, respectively). Future research should concentrate on the long-term impacts of mindfulness-related therapies on nurses' job satisfaction and look into organizational aspects such as managers' leadership style, work environment, professional commitment, and organizational commitment.

Strength and limitations

The main strength of the present systematic methodological approach. To assess the methodological caliber of reporting in the research, we used the Joanna Briggs Institute, 2020 Joanna Briggs Institute, 2020 critical assessment tools for quasi-experimental studies and RCTs. Besides, potential bias was minimized by incorporating several reviewers in the process of

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data extraction, analytic processes, and quality assessment. This review has some restrictions as well. Because of the use of electronic sources, unpublished and grey literature was not included in the search, which may have resulted in the omission of certain pertinent studies. Another limitation is the dearth of RCTs and the heterogeneity of their results, which prohibited us from doing meta-analyses on various outcomes or looking into intervention-influencing factors.

CONCLUSION

The present systematic review proposes that MBSR interventions can decrease the stress level among nurses and improve nurses' quality of life. Prior studies on mindfulness have established that clinical and nonclinical populations benefit cognitively and psychologically from practicing mindfulness. It is demonstrated that no adverse effects were noted in any of the studies; on the other hand, individuals may develop more symptoms as a result of the awareness training. Future studies should be conducted on the amount, structure, and dose-response effects. The cost-effectiveness of MBSR interventions, the sustainability of mindfulness practice over time, and the possibility of cascading effects on other well-being-related activities require long-term research on MBSR interventions. More research in this area is also necessary, and it must use rigorous methods, such as quasi-experimental studies and randomized controlled trials, consistent outcome measures, and larger sample sizes.

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