



Original Article

Exploring mindfulness interventions for stress resilience in newly graduated nurses: A qualitative study

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ABSTRACT

Objectives: In an aging society coping with workforce challenges, successful hospital management hinges on the recruitment and retention of nurses. It is of utmost priority to address job stress and fortify mental resilience. While quantitative research supports investigating the stress-alleviating effects of mindfulness for nursing staff, obtaining a direct perspective from nurses is essential to comprehend how they navigate burnout and apply mindfulness for stress management. This qualitative study aimed to explore newly graduated nurses' experiences who participated in a mindfulness course and evaluate the practical application of acquired strategies in their work and daily lives, providing insights for retention strategies in health-care institutions. **Materials and Methods:** Thirty-one recently graduated nurses participated in an 8-session weekly in the mindfulness program. Qualitative data were obtained through focus group discussions during each session and subjected to thematic analysis. **Results:** Five key themes were generated to show how nurses experience mindfulness training: (1) shedding light on workplace stress and adaptation; (2) stress upon entering the workforce; (3) reactions to the vicious cycle of anxiety responses to stress through mindfulness practices; (4) discovery of daily life pleasures and obstacles encountered during the mindfulness course; (5) obstacles encountered during the mindfulness course. Through participation in the program, the subjects' levels of mindfulness of stress responses were enhanced. **Conclusion:** This study underscores the advantages of mindfulness courses for newly graduated nurses and emphasizes the crucial role of workplace support. Practical recommendations for nursing administrators and educators include fostering familiarity with the health-care environment, promoting teamwork, and addressing anxiety related to handovers. Mindfulness breathing training has proven effective in alleviating pressure during shift transitions. Nursing managers can enhance staff well-being by creating moments of happiness, encouraging positive experience sharing, and organizing outdoor activities. Suggestions for future research involve refining the implementation of the Mindfulness-Based Stress Reduction course for accessibility and effectiveness, extending courses to other health-care professionals to promote team harmony, and positively impacting nursing staff's well-being and performance.

KEYWORDS: *Mindfulness, Nursing staff, Stress*

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INTRODUCTION

In an aging society coping with workforce challenges, successful hospital management requires the recruitment and retention of nurses. Particularly, newly graduated nurses encounter a myriad of stressors and challenges as they navigate the transition to professional clinical practice. The management of patient interactions and collaboration with colleagues in a new and unfamiliar environment can contribute to heightened work anxiety, particularly in the absence of adequate support [1]. Workplace stress and job satisfaction

play pivotal roles in influencing nurse retention rates, with those experiencing elevated work-related stress expressing a greater inclination to resign [2,3].

The phenomenon known as "reality shock" is evident among novice nurses who grapple with dissonance between

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the experiences during their academic training and those encountered in the practical work setting [4]. Research indicates that during the initial month of duty, newly graduated nurses experience the highest levels of work-related stress, with a heavy workload and a perceived lack of clinical competence identified as primary stressors [5].

To address these challenges, hospital administrators could provide essential support and training for newly graduated nurses, facilitating a smoother transition into their roles as professional health-care practitioners [6]. Nurse resilience training is designed to address stress, depression, anxiety, and fatigue by employing strategies such as mindfulness, self-efficacy, and social support. However, the effectiveness of these interventions varies, as indicated by diverse outcomes in measurement assessments [7].

In this context, mindfulness refers to a continuous learning cycle and applying new insights to work and daily life [8]. One specific approach, Mindfulness-Based Stress Reduction (MBSR), promotes a nonjudgmental and open-minded attitude, emphasizing meditation to enhance personal resilience and alleviate stress [9]. Mindfulness embodies a purposeful and comprehensive behavior involving acknowledging stress sources and managing and controlling reactions to current situations [10]. Rather than altering stressful circumstances, mindfulness programs empower individuals to be aware of stress and develop strategies to respond to it. MBSR incorporates psychological self-regulation and encourages the development of individual and interpersonal skills [11].

Numerous studies have demonstrated the positive impact of mindfulness interventions on nurses [12-14]. In quantitative systematic research, interventions utilizing mindfulness-based interventions (MBI) have proven effective for nursing professionals in mitigating stress, depression, anxiety, and burnout. These interventions enhance resilience, improve the quality of life, foster self-compassion, boost happiness, and increase mindfulness levels [13,15].

Nurses who engaged in mindfulness interventions demonstrated heightened self-awareness and an increased awareness of others. The enhanced ability for stress management proved instrumental in mitigating the distress caused by nursing errors and reducing overall stress levels [16,17]. Building on these insights, seven qualitative systematic studies revealed that MBI contribute significantly to alleviating work-related stress, positively influencing both professional and personal domains. These studies offer valuable perspectives on how nursing professionals perceive the impact of mindfulness training, emphasizing (1) the conceptualization and management of stress, (2) nurses' appreciation of mindfulness training strategies, (3) self-care awareness and strategies, and (4) challenges associated with mindfulness training [13].

The accumulated evidence strongly supports the efficacy of MBI in reducing stress and fatigue among novice nursing professionals. This, in turn, has a positive ripple effect on the work environment and patient treatment outcomes [15].

Recognizing that the stresses of newly recruited nurses entering the workforce may differ from those experienced by seasoned nurses and understanding the variability in stress adaptation skills, mindfulness interventions emerge as effective tools for stress and anxiety relief among newly graduated nurses [18,19].

Stress is a subjective experience, and exploring nursing professionals' perceptions of workplace stress and applying mindfulness courses through qualitative methods hold considerable value. This approach can potentially enhance our understanding of the transitional period from the student role to becoming a nurse and illuminate the experiences and applications of MBSR among nursing professionals. Notably, previous studies have predominantly focused on the outcomes following mindfulness interventions, with participants primarily comprising experienced nurses [20].

There is a dearth of research delving into the real-time experiences of participants during the weekly sessions of mindfulness programs. Addressing this gap, our study employed a qualitative methodology to investigate the mindfulness learning experiences of recently graduated nurses. In addition, we assessed the practical application of mindfulness strategies in their professional and personal lives. This approach provides a nuanced exploration of the immediate and tangible impacts of mindfulness training, offering valuable insights into the unique challenges faced by newly graduated nurses in their journey toward professional competence and well-being.

MATERIALS AND METHODS

Study design

A qualitative study was conducted. Participants were newly graduated nurses who had enrolled in an MBSR course comprising eight sessions conducted at weekly intervals. The course was developed by Jon Kabat-Zinn [21]. The course curriculum encompassed various components, such as an introduction to MBSR, body scanning, mindful movement, the raisin meditation, managing challenging emotions, the STOP technique, the 3-min breathing exercise, loving-kindness meditation, mindful communication, and embracing mindfulness in daily life. Each week, participants were tasked with practicing these acquired skills in homework assignments, accompanied by journaling their reflections. In addition, focus group discussion was held in every session.

Participants were explicitly informed of their right to decline participation or withdraw from the study at any point for any reason. Before their involvement, written informed consent was acquired from all participants, accompanied by a comprehensive explanation of the study's objectives and assurances regarding the anonymity and confidentiality of their responses.

Participants

Newly graduated nurses without any prior professional work experience were recruited from a medical center in eastern Taiwan. Recruitment advertisements were disseminated to all newly hired nursing staff members following their 5-day induction course. A total of 31 newly graduated nurses initially

enrolled in the MBSR course, out of which 25 participants completed half of the total sessions and 14 participants successfully completed all sessions. The focus groups for this research are scheduled following each weekly MBSR session. Consequently, nonparticipation by nurses every week may lead to subject attrition, resulting from reasons such as taking leave, resigning, or scheduling conflicts. Participation in this study is voluntary and is extended to newly recruited nursing staff. The hospital supports the study, facilitating participation by granting 4 h of paid leave for the coursework and subsequent focus group sessions, followed by group interviews.

The MBSR course occurs weekly, spanning 2.5–3 h per session. After each session, group interviews are conducted, lasting approximately 40–50 min. While the recommended number of participants for a focus group typically ranges from 8 to 12, this study adopts an approach centered on collecting insights into participants' experiences and reflections immediately after the class without a predefined limit on the number of attendees.

During each session, a 1-h focus group discussion was facilitated. The discussion was moderated by SMS (the second author), a certified MBSR trainer, who guided participants in sharing their work experiences and reactions to work-related stress. In addition, participants discussed their personal experiences with mindfulness practices at home and the integration of mindfulness techniques into their daily lives and work routines. In total, eight of these focus group discussions were recorded for analysis.

Data analysis

Two research assistants transcribed the audio recordings of the focus group discussions, and subsequently, the accuracy of the transcripts in correspondence with the recorded files was verified. The data were then analyzed using the thematic analysis method as outlined by Nowell *et al.* [22]. This data analysis process comprises six steps. The initial step involves immersing in the data, wherein the researchers compiled the findings by extensively listening to the audio recordings, reading the transcripts, and documented reflections repeatedly. Notably, interactions between the participants and the moderator were meticulously recorded. The subsequent step involves generating initial codes. Here, the transcripts were imported into NVivo-12, and preliminary codes were assigned based on key elements within the original data. Moving to the third step, the researchers identified overarching themes by discerning critical aspects of the data, including the emotions and behavioral responses of the nurses toward specific individuals and situations, as well as the underlying causes. In the fourth step, the researchers conducted a thorough review of these emerging themes. Following this, individual files were created for each identified theme, and these files underwent a comprehensive review. Moving on to the fifth step, the process involved defining and assigning names to these themes. During this phase, the researchers reorganized the text files and specified keywords, such as body reactions, thoughts, and emotions associated with self-awareness. The analysis of the transcripts centered on discerning and contrasting participants' reactions to stress. It specifically sought to identify and

compare their habitual responses in the workplace with those developed after undergoing mindfulness training. Finally, in the sixth and final step, a comprehensive report was generated based on the identified themes.

Rigor of the research

To enhance the authenticity and credibility of the research, the first author (SCW), who serves as a nursing supervisor, refrained from participating in the course. Furthermore, all participants were briefed on the group principles, which emphasized noncriticism and confidentiality. The course sessions were conducted in a secluded classroom, ensuring an environment free from disturbances. The research protocol was meticulously explained to participants, fostering an atmosphere where they felt comfortable sharing their thoughts openly. For data dependability, both the first author (SCW) and the third author (LCK) conducted initial checks of the audio recordings and notes from the focus group discussions.

Ethics

This study was conducted in accordance with the Declaration of Helsinki and was approved by the Institutional Review Board of Tzu Chi General Hospital (IRB103-11-B). Participants were provided with a detailed informed consent form explaining the purpose of the research, their role, the potential risks, and the rights of the participants. It was made explicit that participation was voluntary, and they had the right to withdraw from the study at any time without penalty.

RESULTS

All participants in this study were female nurses with bachelor's degrees. Their average age was 23 years, with ages ranging from 20 to 24. In addition, all participants were newcomers to the workforce. The analysis yielded a total of five distinct themes.

Theme 1: Stress experienced on entering the workforce

The stress experienced at the outset of their careers stemmed from both the unfamiliarity with colleagues and the demanding workload. As this marked the participants' inaugural job experience, they grappled with stress while communicating with physicians and senior nurses. Conversations among participants often revolved around their negative work encounters during their 1st month on the job. Participants also mentioned their challenges in comprehending the treatment processes followed by doctors. Moreover, immediate "stat" orders disrupted their preestablished treatment routines and extended their work hours. In addition, the participants were unfamiliar with the senior nurses and their working habits. They also lacked a clear understanding of the specific key points to address during duty handovers, particularly on their 1st day of work. For example:

"I was afraid of the process of handing over duties... I tended to look disorganized and did not know where the focal points were."

One participant stated: *"I was anxious whenever I handed over my duty to a senior nurse that I had never met."*

The participants found themselves in an unfamiliar work environment, grappling with unfamiliar nursing techniques,

and uncertain about the operation of medical equipment. The newly acquired skills they had learned were at risk of fading due to a lack of opportunities for independent practice. Moreover, they were burdened with an excessive workload, caring for double the number of patients compared to their school experiences. This heightened workload led to significant stress levels and hindered their ability to provide optimal patient care. Their inability to meet job demands to their satisfaction even extended to their ability to maintain proper eating habits, exacerbating their overall stress levels.

Beyond their regular working hours, participants frequently found themselves dedicating additional time to refresh their nursing skills, often at the expense of the rest they needed. Concerns about their subpar work performance also took a toll on the quality of their sleep. For example:

"There are many machines in the intensive care unit. We have to investigate and respond immediately. We cannot just focus on our duties; we must be mindful of all types of situations at once."

"The burden at work was so large that I could not eat or sleep well."

Theme 2: Reactions of participants caught in the vicious cycle of anxiety

The experience of work-related stress served as a catalyst for the participants' ingrained responses, ensnaring them in a cycle of anxiety, self-criticism, and uncertainty. This, in turn, had adverse effects on their cognitive abilities, impeding their execution of the clinical techniques they had acquired. Both external environmental factors and internal doubts acted as triggers for anxiety, perpetuating this detrimental cycle.

Figure 1 illustrates a paradigmatic representation of an anxiety-driven vicious cycle initiated by a nurse's medication error, which sets off a cascade of psychologically distressing situations. The cycle commences with an initial sense of sadness, followed by self-blame and a profound questioning of how the medication error transpired. As the aftermath unfolds, the nurse experiences physical manifestations of stiffness and tension, coupled with internal thoughts suggesting that the head nurse may perceive them as incompetent.

Doubts regarding suitability for the nursing profession begin to emerge, giving rise to persistent inner turmoil that extends day and night. Sleep becomes elusive during nighttime hours, fostering a pervasive sense of failure and gradually nurturing contemplations of resigning from the position. Notably, minor events or stressors can trigger ongoing negative feelings and thoughts among nurses. In this context, the term "thought" underscores participants' inclination to engage in introspection and generate responses to their cognitive processes.

In the lesson concerning responses and habitual reactions to stress, the participants recounted the stressful situations they had encountered, along with their typical reactions, as follows:

Emergencies involving patients and other challenging situations disrupted their workflow, compelling them to navigate multiple demands simultaneously. These stressors initiated an entry level of anxiety, characterized by feelings

of frustration, physical exhaustion, apprehension about delayed duty relief, concerns about potential reprimands, and frustration stemming from insufficient control over their time.

Subsequently, participants advanced to a second stage of anxiety, characterized by an increasing sense of isolation and heightened frustration and anger. Physical symptoms, including abnormal gastric acid secretion and headaches, became more pronounced, accompanied by an overwhelming impulse to consider resigning.

This inclination to quit only intensified their exhaustion, propelling them into a third and even more severe level of anxiety.

"Medical orders would be issued by two doctors simultaneously and changed one after the other; and I would run around without knowing what was going on. The whole situation had fallen apart, and I could feel the secretion of gastric acid."

"I was forced to deal with a mountain of tasks suddenly without a clear priority, and I was depressed and tired. I wanted to resign."

Due to their lack of familiarity with the work environment and the procedures in use, these participants found themselves unable to respond to their preceptors' queries and lagging behind their colleagues in terms of assignment progress. Their ability to care for patients was limited to just half the number managed by their more experienced peers. Consequently, these circumstances engendered the following emotions: a sense of burden, the weight of additional responsibilities on their shoulders, a feeling of forgetfulness, and a sense of shame when seeking assistance from senior colleagues after spending a considerable amount of time in the workplace. This feeling of shame was compounded by the awareness that asking for help would only increase the workload for their senior colleagues.

"After I finished my tasks, the preceptor would ask if there were other tasks that I should do. I would then become doubtful about whether I had forgotten any tasks.... I wonder if this situation would persist forever."

"Whenever I was extracting drugs, I would think about what to do next, what questions seniors would ask me, and what the drugs are for. I would then become distracted and nervous."

Participants' nursing performance did not consistently meet their expectations during stressful moments. The handover process was often chaotic, giving rise to the following feelings: providing imprecise descriptions of the patient's condition, even though they were fully aware of the circumstances; experiencing discomfort when facing dissatisfied senior colleagues who were taking over their duties; and struggling with clear thinking while feeling embarrassed in the presence of preceptors.

"I handed over my duty at 12 o'clock, and I would feel extremely nervous whenever the clock struck 11:30."

"I would feel nervous when handing over my duty to my senior. Whenever she asked me questions, I would freeze and be unable to think properly."

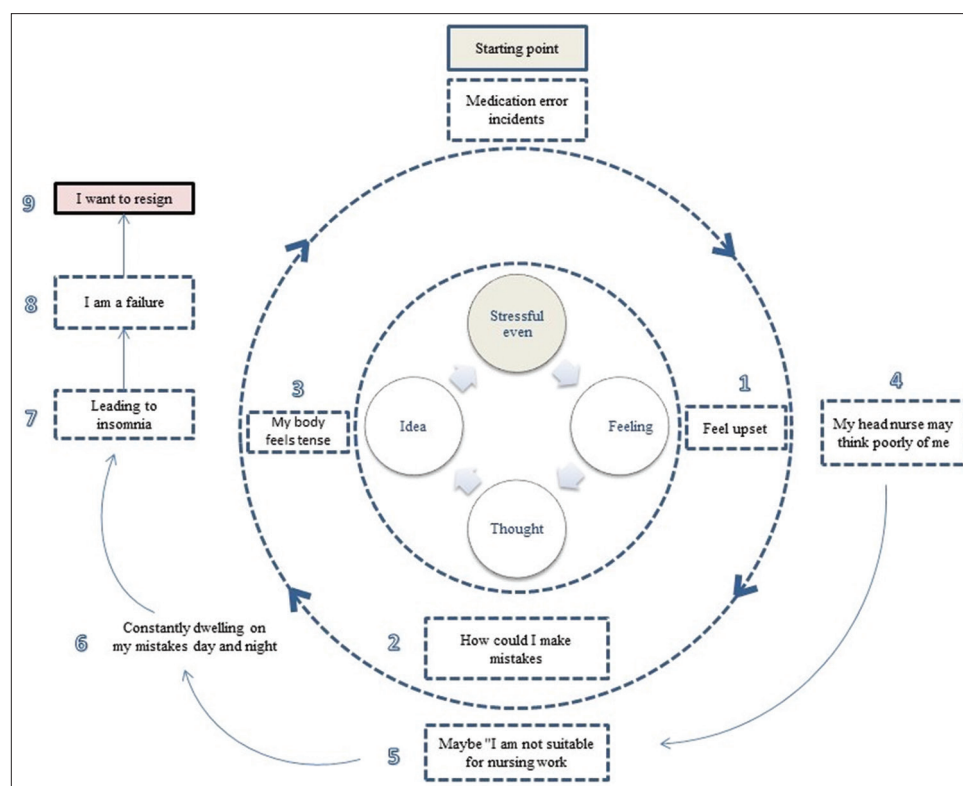


Figure 1: Vicious cycle of anxiety. Exposure to work-related stress elicited automatic reactions from the participants, propelling them into a cycle of anxiety, self-blame, and doubt. This adversely affected their cognitive function, impeding their capacity to apply the clinical techniques they had acquired. External stressors and internal uncertainties served as triggers for anxiety, thereby entangling them in an unrelenting cycle of anxious experiences

Theme 3: Responses to stress through mindfulness practices

As a result of participating in weekly course sessions and gaining more experience in their roles, the participants began to develop strategies for coping with stress. They incorporated techniques such as the S-T-O-P process (stop, take a breath, observe what's going on, and proceed) and the 3-min breathing exercise into their routines. Through these practices, participants came to realize that they had previously spent a significant amount of time feeling guilty about inconveniencing their senior colleagues when experiencing stress. They also recognized the importance of focusing on their immediate tasks to prevent issues from spilling over into their subsequent responsibilities.

The participants often faced extended working hours due to increased workload and patient complications. These circumstances left them feeling drained and fatigued. To cope, they temporarily redirected their focus away from the stress-inducing situations to alleviate their anger and frustration, resulting in a sense of relief.

Initially, the participants struggled to meet work demands promptly and occasionally forgot essential tasks and information. In response, they adopted a strategy of completing tasks efficiently without dwelling on potential negative outcomes. In addition, they made efforts to self-assess and address their weaknesses, sought assistance from senior colleagues when necessary, and worked on enhancing their skills.

"I was only able to perform one task at a time when I entered my job, but now I can think about the content of the words while listening."

Utilizing mindfulness strategies can effectively mitigate spontaneous reactions. Themes 1–3 illustrate the connection between these reactions and stress responses [Figure 2].

Theme 4: Discovering small daily life pleasures

Amid these challenges at work, small pleasures had the power to elicit temporary positive emotions in the participants. Discussing positive experiences allowed them to momentarily divert their thoughts from immediate work-related stress. Through mindfulness, they learned to savor their meals at a more deliberate pace, engaging all five senses and heightening their awareness of their actions. In the concluding session, participants discovered the capacity to fully appreciate life through all their senses. Regular sights such as the sea outside their window, the moon, or the breeze during a bicycle ride evoked feelings of awe and comfort. Engaging with patients and experiencing a sense of accomplishment during their work also brought moments of happiness, despite the challenging nature of their profession. The following quotes encapsulate the transformative experiences that participants underwent through mindfulness practice.

"The pear was rough in appearance but juicy and sweet in taste. My father cultivated it. It reminded me of my hard-working parents and was given to me by my mother. It provided me with a special memory."

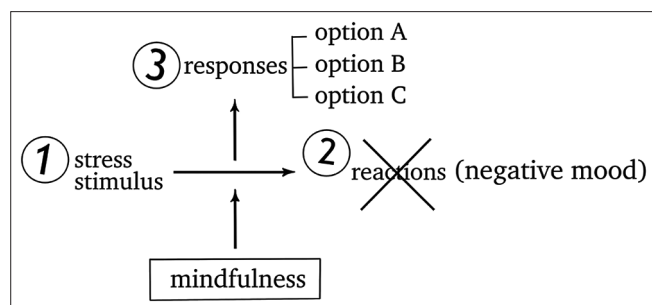


Figure 2: The relationship between the reactions and responses to stress. Mindfulness strategies help to reduce spontaneous reactions. Themes 1–3 display the relationship between the reactions and responses to stress. Theme 1: Stress experienced on entering the workforce. Theme 2: Negative mood of participants caught in the vicious cycle of anxiety. Theme 3: Responses to stress through mindfulness practices

“Because my roommate woke up early to prepare it (breakfast) for me.... I chewed on the plain toast, which became sweeter the more I ate it, providing me with a sense of happiness.... I felt that today would be a good day.”

“Because I’m too tired, sometimes too busy to have a meal or drink water at work. For now, I got a chance to rest for a bit. It’s quite nice.”

Theme 5: Obstacles encountered during the mindfulness course

Overall, the participants expressed satisfaction with the MBSR program. They recommended that the course be integrated into nursing school curricula. However, some participants voiced concerns about the potential impact of the MBSR program on their clinical learning hours. Despite these challenges, several participants overcame these obstacles through their determination to learn, and some even extended their newfound knowledge to their families.

“Although the course was beneficial to me and allowed me to talk to other newly graduated colleagues, it was stressful and consumed our learning time.”

“To me, when numerous tasks must be completed, we should focus our time on them rather than on this MBSR course.”

The participants faced challenges in finding time to practice mindfulness techniques. Nevertheless, the majority of participants were able to incorporate mindfulness exercises into their routines, practicing 2–6 times per week and reporting a sense of relaxation. For some, the only available time was a few minutes before bedtime. However, a few participants found it difficult to engage in the practice due to negative moods or the necessity to dedicate time to research literature relevant to their work.

“When you are tired, you remain tired even after practicing the course content.” “I was in a bad mood and wanted the class to end.”

“I have no time to practice what I learned in the course because my workload increased.”

DISCUSSION

This study delves into the experiences of newly graduated nurses who participated in the MBSR course. These nurses encountered a transition shock when faced with workplace stressors encompassing knowledge and skills, interpersonal relationships, and professional responsibilities during their initial job placements. In addition to external stressors, their internal anxieties regarding how they would respond to them played a significant role. The MBSR intervention emerged as a valuable tool, fostering self-awareness and equipping participants with essential self-care skills to effectively navigate the demands of workplace stressors.

Given the unfamiliarity of newly graduated nurses with their team members, work environment, and necessary skills, they consistently found themselves grappling with a reality shock, experiencing both physical and psychological discomfort. These challenges detrimentally impacted their job performance, eroded their confidence, heightened self-blame tendencies, and, at times, even triggered contemplations of resignation. Consequently, they became entangled in a vortex of negative emotions. The findings highlight the importance of targeted interventions, like MBSR, in supporting newly graduated nurses during their transitional phase, promoting resilience, and enhancing their ability to cope with the multifaceted challenges encountered in their professional roles.

Scholars Im and Kim discovered a correlation between a higher level of psychological burnout among nurses and an increased incidence of medication errors and adverse events during adverse events [23]. Our study reveals that nurses, following medication-related incidents, experience a series of vicious cycles leading to heightened anxiety, ultimately culminating in thoughts of resigning from their positions. Research by Wu *et al.* suggested that assisting newly graduated nurses in adapting to the demanding work environment could alleviate their anxiety and enhance their self-efficacy at work [13].

Self-awareness involves the skillful comprehension of stressful events in an organized manner, encompassing the capacity to analyze one’s own emotions, thoughts, and reactions to stress, ultimately leading to the formulation of effective stress responses. Individuals immersed in mindfulness exhibit the ability to gain clarity on their immediate circumstances and interpret situations from various perspectives [24]. In our study, participants applied the techniques they acquired during the course to manage stress stemming from senior colleagues and their own internal challenges. Our findings align with Lehto *et al.*’s research results, which underscored the role of self-awareness in enhancing participants’ self-management capabilities in the face of workplace stress. Furthermore, in our investigation, participants frequently turned to mindfulness breathing as a coping mechanism within their high-stress work environment [25].

Figure 2 illustrates that nurses, postmindfulness training, exhibit the ability to self-regulate negative emotions and make alternative choices in their responses. This corroborates the observations of Yang *et al.*, who determined that mindfulness

augments self-regulated learning abilities in nursing master's students by elevating their self-efficacy and psychological flexibility [26]. In addition, Lee and Park identified a mediating effect of sociocognitive mindfulness and emotion regulation, particularly reappraisal, on empathy [27].

Self-awareness involves the skillful comprehension of stressful events in an organized manner, encompassing the capacity to analyze one's own emotions, thoughts, and reactions to stress, ultimately leading to the formulation of effective stress responses. Individuals immersed in mindfulness exhibit the ability to gain clarity on their immediate circumstances and interpret situations from various perspectives [24]. In our study, participants adeptly applied the techniques they acquired during the course to manage stress stemming from both senior colleagues and their own internal challenges. Our findings align with the results of Lehto *et al.*'s research, which underscored the role of self-awareness in enhancing participants' self-management capabilities in the face of workplace stress. Furthermore, in our investigation, participants frequently turned to mindfulness breathing as a coping mechanism within their high-stress work environment [25].

Nurses encounter interference, distractions, anxiety, time pressure, as well as acute and chronic fatigue during handovers, contributing to a decline in handover quality [28]. Our study reveals that nurses who undergo mindfulness training exhibit an ability to recognize the impact of handover stress on themselves. Consequently, these nurses employ deep breathing techniques to regulate their emotions before handovers. As a result, they experience reduced fear during handovers, allowing them to concentrate more effectively and facilitate a smoother completion of the handover process.

Mindfulness training heightens an individual's awareness of their immediate environment [29]. In a prior quantitative study, participation in the MBSR course positively influenced participants' stress responses [19]. Embracing small pleasures can elevate nurses' moods and enhance their ability to unwind, both in their daily lives and at work. Yeganeh and Kolb propose that automatic categorization often underlies both positive and negative work experiences, where emotions are naturally triggered by environmental stimuli [30]. However, mindfulness empowers individuals with greater control over their emotions.

In the MBSR course, the exchange of experiences plays a crucial role in participants' learning journeys. Participants provide various forms of support to one another, with some acquiring effective stress management methods, while others remain entangled in the cycle of anxiety. Many participants face challenges practicing MBSR at home due to exhaustion or time constraints. Therefore, this study suggests introducing MBSR training to nurses before they commence hospital inductions.

Moreover, the demanding workload and work schedules pose significant challenges for nurses attending mindfulness courses and engaging in mindfulness activities [31]. Lehto *et al.* reported that health-care providers found it challenging

to learn mindfulness, citing time constraints and emotional factors, even with the availability of a mobile application designed to facilitate mindfulness practice [25]. Thus, future MBSR courses should encourage students to integrate MBSR into their routines through shorter, more frequent sessions (both on and off duty) and assess the outcomes accordingly.

Limitations

While interpreting the results, it is important to acknowledge certain limitations of this study. The transcripts utilized were derived from focus group discussions, involving an initial enrollment of 31 participants, but ultimately, only 14 nurses completed the program. A predominant reason cited by most participants for noncompletion was their perceived lack of adequate time for mindfulness practice at home. Consequently, this study suggests offering MBSR training to newly graduated nurses 1 week before their entry into the workforce or before graduation. This approach would enable them to incorporate mindfulness into their daily routines and apply it seamlessly on entering the workforce, mitigating potential scheduling conflicts associated with formal MBSR courses. In addition, we did not comprehensively trace the experiential context of individuals throughout the entire course. We relied on home assignments to gauge participants' engagement with mindfulness practice; however, many participants reported exhaustion after work, making it challenging to accurately document the time they spent awake in bed before falling asleep and their feelings during practice. This limitation affected the effectiveness of the assignments.

CONCLUSION

In this study, we utilized qualitative data analysis to explore the perceptions of newly graduated nurses regarding the impact of stress and the effectiveness of the MBSR program on their professional practice. The qualitative findings of this research identified five key themes that offer valuable insights for nursing administrators and educators.

First, the training of new nurses should prioritize their familiarity with the work environment and colleagues, emphasizing the significance of teamwork and addressing anxiety related to the pressure of handovers. Mindfulness breathing training has emerged as a promising approach to alleviate nervous pressure, assisting nurses in maintaining performance standards during shift transitions.

In addition, nursing managers can play a pivotal role in enhancing the well-being of their staff. Creating small moments of happiness within the work environment and fostering a culture of sharing positive experiences among the team can contribute to a more positive and supportive workplace atmosphere. Furthermore, organizing outdoor activities can be instrumental in guiding nurses to engage their five senses, bolstering self-awareness and overall job satisfaction.

Recommendations for future research involve refining the implementation of MBSR courses. It is suggested that the timing of these courses be made more flexible or the class

duration be shortened with an extended overall period. These adjustments could enhance the accessibility and effectiveness of MBSR, potentially leading to improved stress management and well-being among nursing professionals. Overall, the findings of this study provide actionable insights for nursing education and administration, with the potential to positively impact the well-being and performance of nursing staff.

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Data availability statement

The datasets generated during and/or analyzed during the current study are available from the corresponding author (Shu-Chen Wang) on reasonable request.

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Conflicts of interest

There are no conflicts of interest.

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