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EFFECTIVENESS OF MINDFULNESS-BASED INTERVENTIONS FOR REDUCING STRESS AMONG NURSES: A QUALITATIVE STUDY AT KHYBER TEACHING HOSPITAL

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ABSTRACT

Stress among nurses is an escalating problem given its impact on their mental health and the quality of care offered to patients. Mindfulness-based Interventions have received praise as MBIs for effective stress relief, although there is little qualitative research in Pakistani healthcare systems. This study looks into the impact of MBIs on stress relief for nurses at Khyber Teaching Hospital. A qualitative exploratory design was used, which consisted of 25 nurses that were purposefully sampled for semi-structured interviews. Data were collected through open-ended questions regarding stress and perceptions of MBIs and barriers to implementation. Patterns and themes were identified using the thematic analysis approach and NVivo software. The major findings indicated that the nurses operate under a lot of stress because of their workload, emotional exhaustion, and inadequate resources. Participants regarded MBIs as efficacious in stress management because it enabled them to better manage their emotions and direct their attention to the required tasks. Nonetheless, some barriers like limited time and inadequate training prevented proper application. Some facilitators included organizational backing and encouragement from colleagues. The need for institutional and more informative support is emphasized in the study in accordance with the ability of MBIs to help relieve stress among nurses. These findings enhance the developing literature on MBIs and healthcare, especially regarding Pakistani context. The findings could be validated better if future research included larger sample sizes with a wider demographic and utilized mixed-methods techniques.

INTRODUCTION

Stress among nurses is a pervasive issue the world over, and several studies have highlighted the high levels of occupational stress related to long working hours, emotional demands, and critical patient situations, especially for nurses (Happell et al., 2013). In Pakistan, the scenario is even more challenging as nurses work at the frontline within a limited resource environment faced with chronic understaffing, absent mental health support systems, and lack of stress coping mechanism programmes (Ali et al., 2021). Such circumstances lead to burnout, emotional exhaustion, and low job satisfaction among nurses that not only affects their wellbeing but also the quality of care provided to the patients (Cheung & Yip, 2015).

Nurse stress does not only affect their health individually, but also leads to increased absenteeism, high turnover rates, and decreased productivity within the organization (Adriaenssens et al., 2015). In most stressed environments, nurses in the hospitals are more inclined to be careless with their work, which puts patients' safety and the quality of care received at risk (Dall'Ora et al., 2020). For example the relationship between stress and burnout among nurses and discovered that high levels of stress, which was connected to high levels of burnout, lowered their satisfaction with patients and increased medical mistakes (Aiken et al., 2012). To alleviate stress in nurses, there not only needs to be a focus on well-being, but also an emphasis on standardized patient care and productivity within the organization.

Stress is one of the biggest challenges for healthcare professionals, but new Mindfulness-Based Interventions (MBIs) offer some hope. They stem from the Masers program of stress reduction and focus on the nurturing of present awareness and a negative-free acceptance of living. Shapiro et. al, 2005 outlines how these interventions are widespread in the healthcare industry because of the proven results in regards to stress relief, adept emotional control, and elevation of well-being. Furthermore, Gauthier et. al,

2015 explains how nurses' levels of stress, anxiety, and burnout can drastically improve thanks to MBIs, allowing for more effective coping with workplace problems. Nurses in Khyber Teaching Hospitals in Pakistan's public sectors are in dire need of these assumptions. Unfortunately, it is ironic that my country seems to be extremely closed off to new research and creativity around the subject, leading to an assumption that this study would be very beneficial in filling the gap for this region and exploring the country's deficiency in healthcare aided by mindfulness.

PROBLEM STATEMENT

Due to high workloads, emotional fatigue, and inadequate resources at Khyber Teaching Hospital, nurses suffer from high levels of stress that impacts their mental health and job performance. Even with the increasing acknowledgement that MBIs aid and help reduce stress, there seems to be a lack of research working on its qualititative aspects in this particular context. This gap in the literature emphasize the need to understand how nurses in resource constrained environments within the Khyber Teaching Hospital could benefit from MBIs so their overall well being and care provided to the patients improves.

RESEARCH OBJECTIVES

1. To understand the sources and experiences of stress among nurses at Khyber Teaching Hospital.
2. To explore nurses' perceptions and experiences regarding the effectiveness of mindfulness-based interventions in reducing stress.
3. To identify barriers and facilitators to the implementation of MBIs in the hospital setting.

RESEARCH QUESTIONS

1. What are the primary sources and experiences of stress among nurses at Khyber Teaching Hospital?
2. How do nurses perceive the effectiveness of mindfulness-based interventions in reducing their stress levels?
3. What are the key barriers and

facilitators to implementing mindfulness-based interventions in the hospital setting?

THEORETICAL FRAMEWORK

Mindfulness-Based Interventions (MBIs) are grounded in mindfulness which is a concept originating from Buddhism and brought to Western psychological practice. Jon Kabat-Zinn (1990) defines mindfulness as paying attention on purpose, in the present moment, non-judgmentally as well. This explanation underscores the cultivation of thinking and emotions as non-reactive awareness stress management becomes more effective. In the context of nursing, MBIs are especially relevant because of the high stress levels in the field of work, which includes emotional burnout, lengthy working hours, and critical patient confrontations (Happell et al., 2013). The groundwork of this theory asserts that with constructive present-moment awareness, nurses are likely to control emotions better, reduce burnout, and enhance general well-being (Shapiro et al., 2005). This aligns with the study findings in which nurses explained that MBIs assisted them in remaining calm, focused, and centered during chaotic shifts, which has minimized their stress levels.

The application of MBIs in healthcare settings is further supported by the Job Demands-Resources (JD-R) model, which describes the high emotional strain and workload as a source of burnout, but includes social support and mindfulness training as recourses to mitigate this effect (Bakker & Demerouti, 2007). In the case of Khyber Teaching Hospital, the JD-R model explains how a lack of resources in this case, high emotional demands contributes to stress in nurses and how MBIs can potentially serve as a resource to alleviate these effects. The organizational support and structured training programs described by the nurses as the key facilitators for implementing MBIs suggest that these nurses experience resources that reduce stress and improve their job performance. These findings underscore the importance of job resources in relieving stress among nurses.

A different perspective on the effectiveness of MBIs is provided by the SRT or Stress Reduction Theory. As defined by SRT, stress exists when an individual feels that the pressures posed by their surroundings surpass the resources available to them (Lazarus & Folkman, 1984). Through promoting mindfulness, MBIs retrain the perception of stress and steering stiffness towards developing more constructive coping mechanisms. This is especially true for nurses, as they experience high levels of occupational stress because of their strenuous work environments (Adriaenssens et al., 2015). Shifting to the study, the results pointing to the nurses' self-perception of stress in regard to workload, emotional components, and underutilized resources as primary stressors was in alignment with SRT as those factors actively contribute to perceived coping mechanisms. Mindfulness practices enable nurses to shift to a constructive mindset which lowers their stress levels and enhances managing difficult situations.

Moreover, the Self-Determination Theory (SDT) provides a deeper understanding of motivation concerning MBIs. SDT explains people have an innate need for autonomy, competence, and relatedness, and fulfilling these needs leads to greater well-being and less stress (Deci & Ryan, 2000). In this case, MBIs can be considered an empowering tool that enables nurses to take control over their emotions, enhances their stress management skills, and fosters a peer-supported organizational culture that promotes positive relations. The study's focus on organizational support and peer motivation for the effective application of MBIs is consistent with SDT framework, arguing that meeting these psychological needs can help make mindfulness practices more effectively tailored to stress experienced by nurses.

LITERATURE REVIEW

The effectiveness of mindfulness-based interventions (MBIs) in reducing stress among nurses has gained significant

attention in recent years, particularly as the healthcare environment becomes increasingly demanding. The literature reveals a growing consensus on the potential benefits of mindfulness practices for nursing professionals, who often experience high levels of work-related stress, anxiety, and burnout.

In 2017, Hunter emphasized that mindfulness training can alleviate symptoms of depression and anxiety among nurses while also enhancing patient care (Hunter, 2017). This article highlights the pressing need for quantitative studies to validate the nurse-perceived benefits of mindfulness identified in qualitative research, underscoring the importance of addressing work-related stress, which has emerged as a predominant occupational health issue in nursing.

Building on this foundation, Sartorius (2018) conducted a systematic review that explored the mental health benefits of mindfulness-based interventions specifically for undergraduate nursing students, a demographic particularly vulnerable to stress and negative mental health outcomes (Sartorius, 2018). The review detailed various mindfulness practices, such as mindfulness meditation and mindfulness-based stress reduction (MBSR), illustrating their effectiveness in promoting self-care and coping mechanisms. This study further established a framework for understanding how mindfulness can improve mental health symptoms in nursing students, setting the stage for broader investigations into the field.

In 2021, Kriakous et al. expanded the discussion by systematically reviewing the psychological effects of MBSR on healthcare professionals (Angela Kriakous et al., 2021). Their findings indicated that MBIs effectively reduce anxiety, stress, and emotional exhaustion while enhancing self-compassion and positive affect. This review called for more focused research on the psychological outcomes of different healthcare professional groups, indicating a gap in the literature that the current study seeks to address.

Most recently, Wang et al. (2023) conducted a systematic review and meta-analysis that specifically examined the impact of MBIs on stress and burnout among nurses (Wang et al., 2023). Their findings corroborated earlier studies, revealing that MBIs significantly reduced perceived stress and improved overall well-being in this population. The authors noted that mindfulness practices foster a heightened awareness of the present moment, which aids nurses in accurately reevaluating stressors and mitigating their impact on health and job satisfaction.

Through these contributions, the literature highlights a compelling narrative on the role of mindfulness in enhancing the psychological well-being of nurses. Each study builds upon the previous findings, creating a robust framework for understanding the potential of mindfulness-based interventions as a practical solution to the pervasive stressors faced in the nursing profession.

METHODOLOGY
Study Design
This study used qualitative exploratory design to assess the effectiveness and applicability of mindfulness-based interventions (MBIs) for stress management among nurses at Khyber Teaching Hospital. To effectively understand nurses' experiences, perceptions, and stressors concerning stress and MBIs, qualitative methods were most appropriate (Creswell & Poth, 2018). This strategy helps appreciate the occurrence of the phenomena in their actual environment which is helpful in a context like Pakistan, which lacks sufficient research.

Sample and Setting
The research was carried out at Khyber Teaching Hospital, one of the largest public healthcare institutions in Peshawar, Pakistan. The sample comprised 25 registered nurses obtained using purposive sampling to provide coverage from different departments and levels of seniority. Inclusion criteria were, registered nurses who had a minimum of a year's

work experience and were willing to partake in the research. Exclusion criteria were Nurses who were on leave during the data collection period or did not consent to participate.

Data Collection Tools

Data were collected using semi-structured interviews, which allowed for flexibility in exploring participants' experiences while maintaining focus on the research objectives (Braun & Clarke, 2013). An interview guide was developed, consisting of open-ended questions organized into three main sections:

- **Stress Levels and Sources:**
o What are the primary sources of stress in your work environment?
o How does stress affect your daily work and personal life?
- **Experiences with Mindfulness Practices:**
o Have you ever participated in mindfulness-based interventions? If yes, describe your experience.
o How do you perceive the role of mindfulness in managing stress?
- **Perceived Benefits and Challenges of MBIs:**
o What benefits do you think MBIs could offer to nurses?
o What challenges might prevent you from participating in MBIs?

Data Collection Procedure

Participants were recruited through purposive sampling at different age groups and experiences by introducing the study on staff meetings at Khyber Teaching Hospital. Nurses who wanted to participate were given thorough descriptions of the study, and all participants were guaranteed anonymity and voluntary participation after obtaining their written consents. To ensure their privacy, interviews were done in a private room in the hospital and were scheduled to last from half-an-hour to 45 minutes. The sessions were audio-recorded with the consent of the participants and later transcribed word-for-word for further review. This approach guaranteed ethical and organized data collection and provided possibilities to investigate the nurses' experiences with stress and the use of mindfulness-based interventions in great detail.

Data Analysis

Data were analyzed using NVivo 12, a qualitative data analysis software, to manage and organize the data efficiently. The analysis followed the thematic analysis approach outlined by Braun and Clarke (2006)

Figure 1: Thematic Analysis Process

1. **Familiarization with Data:**
o Transcripts were read multiple times to gain a deep understanding of the data.
2. **Coding and Categorization:**
o Initial codes were generated based on participants' responses.

o Codes were grouped into categories and further refined into themes.
  o **Identification of Patterns and Relationships:**
o Themes were analyzed to identify patterns and relationships between participants' experiences and perceptions.
3. **Ensuring Rigor:**
o Trustworthiness was ensured through member checking, where participants were

given the opportunity to review and confirm the accuracy of their responses.
Peer debriefing was conducted with two independent researchers to validate the coding and thematic analysis process.

RESULTS

Demographic Information

The study included 25 nurses from Khyber Teaching Hospital, with a diverse representation in terms of age, gender, experience, and department. The majority of participants were female (68%), aged between 25–35 years (76%), and had 1–5 years of experience (48%). The participants were drawn from various departments, including emergency, intensive care, and general wards.

Table 1: Demographic Characteristics of Participants

Variable	Frequency (n=25)	Percentage (%)
Gender		
Male	8	32%
Female	17	68%
Age (Years)		
25–30	10	40%
31–35	9	36%
36–40	6	24%

Experience (Years)		
1–5	12	48%
6–10	8	32%
>10	5	20%
Department		
Emergency	9	36%

Intensive Care	7	28%
General Wards	9	36%

Themes

Thematic analysis of the interview data revealed four key themes related to nurses' experiences with stress and mindfulness-based interventions (MBIs) given in the table 2.

Table 2: Key Themes

S.no	Themes	Key Points	Participant Quotes
1	Sources of Stress	Workload, Emotional demands, and lack of resources	We are constantly overworked, and there's no time to even breathe, let alone relax.
2	Effectiveness of MBIs	improvements in stress management	Mindfulness helped me stay calm during chaotic shifts and improved my focus
3	Barriers to Practicing Mindfulness	time constraints, lack of training, and skepticism	It's hard to find time for mindfulness when we're already overwhelmed with work
4	Facilitators for Implementing MBIs	organizational support, peer encouragement, and structured training programs	If the hospital provided training and dedicated time for mindfulness, more nurses would participate

Theme 1: Sources of Stress Among Nurses

Participants identified workload, emotional demands, and lack of resources as the primary sources of stress. One nurse stated, *"We are constantly overworked, and there's no time to even breathe, let alone relax."*

Theme 2: Perceived Effectiveness of MBIs in Reducing Stress

Nurses who had participated in MBIs reported significant improvements in stress management. One participant shared, *"Mindfulness helped me stay calm during chaotic shifts and improved my focus."*

Theme 3: Barriers to Practicing Mindfulness

Common barriers included time constraints, lack of training, and skepticism about MBIs**.** A nurse explained, *"It's hard to find time for mindfulness when we're already overwhelmed with work."*

Theme 4: Facilitators for Implementing MBIs

Participants highlighted organizational support, peer encouragement, and structured training programs as key facilitators. One nurse noted, *"If the hospital provided training and dedicated time for mindfulness, more nurses would participate."*

Figure 2: Frequency of Themes in Participant Responses
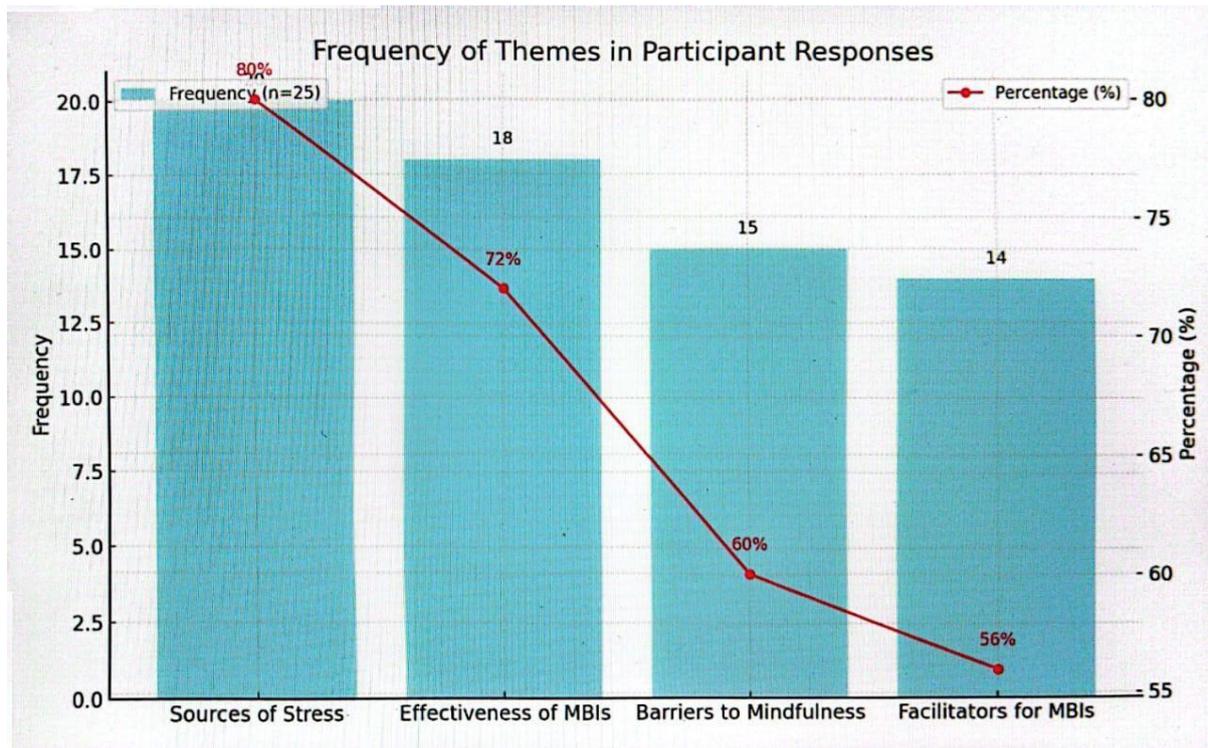
The figure above summarizes the main themes from the interviews along with their frequency and percentage from the 25 participants. Sources of Stress was the most prevalent theme, being cited by 20 participants (80%) who underscored that workload, emotional demands, and lack of resources were central to their stress. This further highlights the impact work-related issues pose on nurses' well-being. The second most prevalent theme was Effectiveness of MBIs, with 18 participants (72%) accepting the ability of mindfulness-based interventions to relieve stress and improve emotional regulation. This indicates that MBIs are regarded as effective for stress relief. Though, Barriers to Mindfulness was also highly pronounced with 15 participants (60%) stating reasons such as lack of time, training, and skepticism toward MBIs, suggesting attitudinal and practical barriers to adoption. Finally, 14 participants (56%) named facilitators for MBIs like organizational backing, peer support, and training programs and described them as leading to

the effective implementation of mindfulness practices. Taken together, these findings demonstrate the ability of MBIs to relieve stress among nurses while pointing to the need for adequate support to overcome barriers.

DISCUSSION

The results of this study are consistent with other literature concerning nurse's stress levels and the possible mitigating effects of mindfulness-based interventions (MBIs). The self-reported level of stress by the participants (80%) is in correlation with other studies that cite workload, emotional strain, and lack of resources as key stress factors in nursing (Happell et al., 2013; Ali et al., 2021). Also, the perceived effectiveness of MBIs (72%) is on par with other studies that underscore the negative impact of stress on emotional regulation and the general well-being of healthcare providers (Shapiro et al., 2005; Gauthier et al., 2015). Despite these findings, the barriers identified in this study such as time, lack of training (60%) and other constraints pose greater challenges in Pakistani settings

that are not commonly discussed in the literature.

As compared to similar studies, the insights are both consistent and revealing. For example, Aiken et al. (2012) and Dall'Ora et al. (2020) also argue that stress negatively impacts nurses' performance and patient care, reinforcing the need for interventions. This study, unlike those done in high-income countries where there is greater organizational support for MBIs, illustrates the absence of such systems in Pakistani hospitals. This gap illustrates the need to plan these initiatives to solve local problems optimally and with limited available resources. The consequences for nursing practice are level-headed. Firstly, the application of MBIs into the nurses' daily schedule can serve as a practical tool for relieving stress. Mindfulness exercises done during break times or at the beginning of shifts can help nurses manage stress properly. Secondly, organizational support is necessary for the successful adoption of MBIs. Hospitals can develop active and passive participation frameworks whereby nurses are trained and equipped with designated areas for mindfulness practice and therefore incentivized to participate.

Overcoming challenges is just as important. Incorporating mindfulness instruction into professional development, providing self-guided online materials, and encouraging collaborative learning can help with time constraints and the absence of prior training. Also, educating the public about the advantages of MBIs through lectures and seminars can mitigate skepticism and stimulate participation. This study emphasizes the effectiveness of MBIs to alleviate stress for nurses at Khyber Teaching Hospital while noting significant barriers and facilitators. If these issues are addressed alongside the facilitators, healthcare institutions will effectively foster an environment that nurtures nurses' needs, subsequently enhancing patient care results.

CONCLUSION

This study analyzed the impact of mindfulness-based interventions (MBIs) on the stress levels of nurses at Khyber Teaching Hospital , noting distinct experiences and perceptions as well as the associated difficulties. Findings show that nurses endure significant stress as a result of heavy workloads, emotional strain, and resource shortages, which is consistent with the international patterns of stress experienced by nurses. Still, the study emphasizes the strong potential of MBIs to help relieve this stress. A large proportion of participants (72%) reported that MBIs enhanced their ability to regulate their emotions and sustain focus. Existing literature supports these findings and the increasing acceptance of MBIs as valuable stress managements tools fpr healthcare professionals.

The study did identify some barriers that nurses perceive as preventing them from fully adopting MBIs, such as a lack of sufficient time and training as well as cynicism. These barriers are more pronounced in low-resource contexts such as Pakistan, where there is little organizational support to promote mental health. Overcoming these barriers requires specific approaches, such as inclusion of mindfulness teaching in career advancement training, provision of appropriate materials, and development of peer support programs. Furthermore, organizational policies that enable nurses to participate and reward attendance, along with scheduled dedicated mindfulness sessions during work hours, could improve the acceptability of MBIs.

To wrap this up, this study highlights the use of MBIs and their potential to enhance nurses' psychological well-being and patient care. If healthcare institutions provided organizational support and peer encouragement, healthcare institutions could help remove the barriers and promote mindfulness and resilience among nurses. More work needs to be done in the area of implementing and assessing MBIs, and further research is needed to determine their effectiveness and explore long-term outcomes. The bottom line is, taking care of nurses' mental health is not only an ethical

issue, it is crucial for sustainable healthcare systems..

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