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Exploring the Benefits of "Mindfulness-Based Stress Reduction" Intervention in Breast Cancer: Outcomes and Perspectives

Explorando los Beneficios de la Intervención de "Reducción del Estrés Basada en la Atención Plena" en el Cáncer de Mama: Resultados y Perspectivas.

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Abstract:

Breast cancer represents a significant challenge for public health, requiring treatment approaches that address psychosocial aspects to improve the quality of life for both patients and survivors. This review aims to explore the diverse effects of Mindfulness-Based Stress Reduction (MBSR) intervention programs among breast cancer patients and survivors. Despite challenges in integrating MBSR into conventional oncological care, its importance cannot be underestimated. Findings underscore the considerable potential of MBSR in enhancing the well-being of individuals affected by breast cancer.

Keywords:

Psychosocial Support, Holistic Health, Well-being, Mind-body Therapies, Integrative Medicine.

Resumen:

El cáncer de mama representa un desafío importante para la salud pública, requiriendo enfoques de tratamiento que aborden los aspectos psicosociales para mejorar la calidad de vida tanto de pacientes como de sobrevivientes. Esta revisión tiene como objetivo explorar los diversos efectos de los programas de intervención para la reducción de estrés basadas en la atención plena (MBSR) en pacientes y sobrevivientes de cáncer de mama. A pesar de los desafíos en la integración de MBSR en la atención oncológica convencional, su importancia no puede ser subestimada. Los hallazgos destacan el considerable potencial de MBSR en mejorar el bienestar de las personas afectadas por el cáncer de mama.

Palabras Clave*:*

Apoyo Psicosocial, Salud Holística, Bienestar, Terapias Mente-Cuerpo, Medicina Integrativa.

INTRODUCTION

Breast cancer is characterized by the uncontrolled growth of cells, specifically in the breast, forming a tumor that can typically be identified through techniques such as X-ray or by touch. Like any other type of cancer, it may have the ability to invade surrounding tissues or metastasize and reach the blood or lymphatic system to spread to other parts of the body. In contrast to benign lumps that do not have these capabilities, their presence does increase the risk of developing cancer in the future.[1]

In 2020, breast cancer caused 685,000 deaths worldwide, with approximately half of these affecting women without specific risk factors beyond being women over 40 years old.[2] In the Americas, around 25% of new cases were reported, becoming the leading cause of cancer death in the region.[2] The mortality figure surpassed 106,391 deaths annually, and in Latin America and the Caribbean, 32% of women under 50 were affected, compared to 19% in North America, according to the same source. Available evidence indicates that premature deaths from this disease are more common in developing countries, although between 1980 and 2020, high-income countries managed to improve mortality prognosis by up to 40%.[3]

According to data from the National Institute of Statistics and Geography[4], breast cancer ranked first as the cause of death due to neoplasms in the Mexican population aged 20 and over during the year 2022. In this period, 23,790 new cases were recorded, with a

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national incidence of 27.64 cases per 100,000 inhabitants. The significantly higher prevalence in women is notable, reaching 51.92 cases, compared to 1.25 cases in men.[4]

Within the framework of this epidemiological reality, it is relevant to consider the biopsychosocial impact of breast cancer and its medical treatment, as these affect various aspects of the lives of this population. These implications are commonly associated with physical problems, such as the presence of a disease and/or disability, as well as with psychological, family, and social challenges[5], that encompass issues such as employment, access to Health insurance, and participation in Healthcare systems and caregiving. This review aims to explore the diverse effects of Mindfulness-Based Stress Reduction (MBSR) intervention programs among breast cancer patients and survivors.

Understanding the Multifaceted Impact of Breast Cancer among patients and survivors

The psychosocial aspects faced by cancer patients are diverse and vary depending on the stage of diagnosis and the type of treatment.[6] Although the type of temporary and long-term side effects of different medical treatments depends on the type and stage of cancer, the most common ones include chemotherapy, radiation, hormone therapy, targeted therapy, and surgery.[7]

Additionally, they vary depending on individual health conditions and the combination of multiple alternatives, making it difficult to specify the impact of each separately.[7] However, the literature reports various needs that can be considered when setting therapeutic objectives for complementary therapies, especially psychosocial ones.

There is a general identification of unmet areas, including social support, activity, informational support, and psychological/emotional needs.[8] Aspects such as fear of recurrence, body image disturbances, sexual dysfunction, treatment-related anxiety, intrusive thoughts related to the disease, persistent anxiety, feelings of vulnerability, existential concerns about mortality, and alterations in marital or partner communication are common.[9]

When considering biological factors, it is important to address the challenges related to nutrition that arise during and after treatment. These challenges commonly include diarrhea, loss of appetite, constipation, nausea, vomiting, fluctuations in weight, lactose intolerance, discomfort in the mouth and throat, dry mouth, difficulties swallowing, as well as alterations in the sense of smell or taste.[10]

In the specific case of breast cancer survivors, side effects such as neuropathy, early menopause, fatigue, anxiety, stress, depression, concentration difficulties, memory loss, osteoporosis, body image concerns, inflammation in the chest wall, arm, and breast (lymphedema), loneliness, anger, fear, and helplessness have been observed.[11,12] Anxiety and depression play a crucial role, persisting beyond medical treatment.[13]

Breast cancer, as a disease, generates high levels of psychological stress, surpassing those in clinically healthy populations.[14] Stress is related to aspects such as procedures and waiting times during diagnosis, prognosis, understanding of the disease, type and frequency of treatments, as well as access to care and the number of medical visits.[15]

The initial moment of diagnosis induces a significantly higher level of stress compared to later phases, such as definite diagnosis, surgery, or adjuvant chemotherapy treatment.[16] During chemotherapy, stress symptoms may intensify due to side effects such as intestinal problems, changes in appearance, fatigue, and insomnia.[17] Although in newly diagnosed women, symptoms of post-traumatic stress decrease over time, factors such as religiosity, treatment accessibility, illness perception, chemotherapy, and quality of life influence this evolution.[18]

Quality of life in breast cancer survivors is affected by post-taxane peripheral neuropathy, with notable impacts on function and personal finances, especially in moderate to severe cases. The persistence of peripheral neuropathy is associated with a significant decrease in quality of life, intensifying with severity.[19] Previous research highlights the connection between peripheral neuropathy, cancer-related pain, and low quality of life.[20,21] Additionally, pain is highlighted as a critical aspect, contributing to decreased quality of life in affected women.[22]

The occurrence of breast cancer negatively impacts the quality of life related to bodily pain, mental health, emotional functioning, vitality, general health perception, physical functioning, and social functioning.[23-25] It is evidenced that overall emotional functioning and quality of life are affected compared to clinically healthy women.[26]

Several studies indicate that cognitive strategies for emotional regulation are superior in Healthy women compared to those with breast cancer.[27] In the latter population, there is a prevalence of fewer adaptive strategies, such as positive reframing, positive reappraisal, or positive reorientation, which are directly related to quality of life.[27] Conversely, decreased quality of life is linked to deficits in effective coping strategies and a more stressful perception of the disease.[28] Adequate coping strategies and good adjustment to the illness are strongly related to social support.[28] It is worth mentioning that a positive relationship has been established between adjustment to the illness and optimism in women with breast cancer.[29]

In the long term (5-10 years), survivors experience an improvement in quality of life after diagnosis, although with slight deterioration in sexual functioning, pain, and other cancer-related symptoms, which persist due to adjuvant therapy and suboptimal management of symptomatology throughout treatment.[30] Several studies in breast cancer patients and survivors indicate that positive quality of life assessments decrease regarding physical and sexual functioning.[31] It has been identified that low levels of pain and fatigue have a significant relationship with increased physical activity following the diagnosis of the disease.[32]

In summary, the challenges faced by breast cancer patients and survivors are diverse and substantial. However, it is reassuring to observe the array of psychosocial intervention options available to tackle these challenges. These include psychotherapy, psychological counseling, cognitive therapy, cognitive-behavioral therapy, psychological education, cognitive rehabilitation, and psychology-related education programs such as acceptance and commitment therapy and meditation-based therapy.[33] Notably, among these interventions are mindfulness-based stress reduction programs.

MINDFULNESS-BASED STRESS REDUCTION AMONG BREAST CANCER PATIENTS AND SURVIVORS

Exploring Mindfulness-Based Stress Reduction for Breast Cancer Patients and Survivors

Mindfulness meditation (MM) involves paying attention to the experience of the present moment with an attitude of curiosity, openness, acceptance, non-reactivity, and absence of judgment.[34] Mindfulness entails being aware in each moment of thoughts, feelings, bodily sensations, and the surrounding environment.[34] Being mindful is associated with being open, non-judgmental, friendly, curious, accepting, compassionate, and kind.[34,35] In other words, interventions based on mindfulness practice (MBIs) aim to cultivate a state of mindfulness[34,35], including MBSR program.

The MBSR program, pioneered by Jon Kabat-Zinn and colleagues, is typically delivered in group settings with 12 to 30 participants over a period spanning from 6 to 12 weeks. Each weekly session incorporates a variety of techniques, including body scan, sitting meditation, walking meditation, mindful movement, and compassion meditation. Participants are encouraged to engage in daily informal practice sessions lasting 15 to 45 minutes, supported by didactic materials such as manuals and CDs. Additionally, some programs may include the option of participating in a silent retreat lasting 5 to 7.5 hours.[36-39]

How can MBSR support breast cancer patients and survivors?

The MBSR interventions have emerged as a promising adjunctive approach for addressing the multifaceted challenges faced by breast cancer patients and survivors. Grounded in principles of mindfulness meditation and cognitive-behavioral therapy, these interventions offer a holistic framework for enhancing psychological well-being, managing distressing symptoms, and promoting resilience throughout the cancer journey.

One of the hallmark benefits of MBSR is its efficacy in addressing sleep disturbances commonly experienced by individuals undergoing cancer treatment. Sleep disruption is a pervasive issue among breast cancer patients, often exacerbated by treatment-related side effects and psychological distress.[40,41] Research consistently demonstrates that participation in MBSR programs yields improvements in various aspects of sleep status[42], such as better sleep efficiency[43], less number of waking bouts[43], increased total sleep time, and decreased sleep disturbance.[44-46]

Moreover, MBSR has demonstrated considerable promise in alleviating psychological distress, particularly anxiety and fear of cancer recurrence.[47] Anxiety is a prevalent concern among breast cancer survivors, stemming from the uncertainties surrounding disease progression and the potential for recurrence.[48,49] Through mindfulness-based techniques such as MBSR, individuals learn to cultivate non-judgmental awareness of their thoughts and emotions, thereby reducing the grip of anxiety and fostering a greater sense of emotional balance.[50,51]

Fatigue is another significant symptom that can profoundly impact the quality of life and functional capacity of breast cancer patients.[52] Cancer-related fatigue is often multifactorial in nature, arising from a combination of physical, psychological, and emotional factors.[52] Research has shown that participation in MBSR programs can lead to significant reductions in fatigue severity and improvements in overall energy levels and vitality.[44,53-55]

In addition to symptom management, MBSR has been linked to a range of psychosocial benefits, including improvements in mood disorder[56], quality of life.[39] Participants often report reductions in depressive symptoms and enhanced self-compassion/self-kindness[57,58], following engagement in mindfulness-based programs.

Importantly, the benefits of MBSR interventions have been shown to endure over time, with some studies documenting sustained improvements in psychosocial functioning and quality of life.[39,59] Furthermore, Mindfulness-based interventions for breast cancer have shown beneficial effects on biomarkers and physiology associated with the disease. Studies have shown a reduction in levels of IL-6 and TNF-α[60–62], inflammatory biomarkers implicated in the development and progression of cancer. Additionally, an increase in telomerase activity has been observed[63,64], an enzyme associated with genomic stability and cellular Health. These findings highlight the potential of mindfulness interventions to positively influence key biological processes related to breast cancer.

This evidence suggests that mindfulness-based interventions provide a valuable addition to standard cancer care, equipping individuals with practical tools to navigate the physical, emotional, and existential challenges associated with breast cancer diagnosis, treatment, and survivorship. By promoting emotional regulation and fostering adaptive coping strategies, MBSR empowers patients to cultivate resilience and reclaim a sense of well-being[65,66], throughout their cancer journey.

Considerations and Challenges in Implementing MBSR

Implementing MBSR for breast cancer patients presents various considerations and challenges that need to be addressed to optimize their effectiveness and accessibility. This section explores some of the key factors involved in the successful implementation of MBSR in this population.

1. Individualized Adaptation. Adapting MBSR to the individual characteristics and needs of breast cancer patients is crucial for ensuring their relevance and effectiveness. Qualitative research emphasizes the importance of considering participants' unique experiences, including anticipatory fear, social identification, and group dynamics, during mindfulness training sessions.[23]

2. Psychosocial Assessment. A comprehensive assessment of psychosocial factors, including anxiety, stress levels, and quality of life, is essential for tailoring mindfulness interventions to meet the specific needs of breast cancer patients at different stages of the disease.[8,67] This assessment should be systematic and ongoing to guide personalized treatment strategies and optimize outcomes.

3. Cultural and Healthcare Considerations. The cultural and Healthcare context in which mindfulness interventions are implemented must be carefully considered, particularly in diverse populations such as Mexican patients. Cultural nuances and Healthcare particularities can influence the acceptability and effectiveness of psychosocial interventions[68] (including MBSR), highlighting the importance of culturally sensitive approaches.

4. Generalizability and Localization. Including participants from different stages of breast cancer and diverse demographic backgrounds enhances the generalizability of research findings. However, it is essential to recognize the limitations of generalizability to specific groups and populations. Future research should focus on addressing these gaps and tailoring interventions to local clinical contexts.

5. Practical Implementation. Practical considerations, such as resource availability, logistical constraints, and Healthcare infrastructure, can significantly impact the feasibility and sustainability of implementing MBSR in clinical settings. Strategies for overcoming these practical challenges are essential for promoting the widespread adoption and integration of mindfulness interventions into standard cancer care.[69] Future research should continue to explore specific aspects of the clinical stage (0, II, III, IV, which corresponds to the classification of carcinomas according to the size and degree of tumor penetration), treatment outcomes, and individual patient profiles to tailor mindfulness interventions to the unique needs of this population.

Addressing these considerations and challenges is critical for maximizing the potential benefits of mindfulness-based interventions for breast cancer patients and survivors. By adopting a comprehensive and personalized approach to implementation, Healthcare providers can enhance the accessibility, acceptability, and effectiveness of MBSR in supporting the well-being and resilience of individuals affected by breast cancer.

CONCLUSIONS

The MBSR program emerges as a promising alternative in psycho-oncology for enhancing the mental health and overall well-being of breast cancer patients and survivors. This narrative review delves into the multifaceted challenges faced by these individuals, emphasizing the importance of integrating MBSR into oncological care as a valuable complementary approach.

However, it is crucial to acknowledge the considerations and challenges inherent in implementing MBSR for breast cancer patients. From tailoring the program to individual needs and ensuring cultural sensitivity to maintaining methodological rigor and facilitating practical implementation, addressing these factors is essential for optimizing the effectiveness and accessibility of MBSR in clinical settings.

By incorporating MBSR into standard oncological care and fostering interdisciplinary collaboration among healthcare providers, researchers, and mindfulness practitioners, we can further augment the impact of these interventions and enhance the overall quality of life for those affected.

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