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Effects of music therapy on pain and anxiety reduction during surgical procedures or radiotherapy in breast cancer: a systematic review

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Introduction: Breast cancer treatment, which may include surgery, chemotherapy, and radiotherapy, is often associated with pain, anxiety, and reduced quality of life. Music therapy, defined as the clinical and evidence-based use of music to achieve therapeutic goals, has emerged as a promising complementary intervention for pain modulation and stress relief in oncology patients. **Objective:** This study aimed to analyze available evidence on the effects of music therapy in breast cancer patients undergoing oncological treatments, contributing to more humanized and effective therapeutic strategies. **Methods:** A systematic review was conducted using the PubMed database to identify randomized clinical trials evaluating the effectiveness of music therapy in reducing pain, anxiety, and inflammatory markers. Outcomes analyzed included pain intensity via visual analog scale, anxiety levels, and biomarkers such as interleukin-6 and HMGB-1 protein. **Results:** Receptive, individualized music therapy resulted in an average pain reduction of 3.20 points, compared to 1.75 points in the control group receiving standard care. Anxiety levels decreased by 3.25 points in the intervention group, versus only 0.73 in the control group. Interleukin-6 levels decreased by 6.05% in the music therapy group, but increased by 43.53% in the control group. HMGB-1 levels dropped by 62.49% with music therapy, compared to a 30.32% reduction without musical intervention. Additionally, both individual receptive and group-integrated music therapy sessions significantly reduced stress, depression, anger, and state anxiety, with individual sessions achieving greater reductions in anxiety. The combination of music therapy and aromatherapy yielded the most significant pain reduction outcomes, suggesting a synergistic effect. **Conclusion:** Music therapy significantly contributes to pain relief, anxiety control, and reduction of inflammatory processes in breast cancer patients. Both individual and group modalities are beneficial and adaptable to clinical needs, standing out as viable strategies for integration into multidisciplinary oncological care.

Keywords: breast cancer; music therapy; pain; anxiety.