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EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION TO REDUCE ANXIETY AND IMPROVE QUALITY OF LIFE AMONG BREAST CANCER PATIENTS: A NARRATIVE REVIEW

[1*]Pooja Rani., [2]Dr. Sonal Chand., [3]Dr. Poonam Agarwal., [4]Prof. Dr. R Sree Raja Kumar, and[5]Christa Mathew

[1*]PhD Scholar, Department of Nursing Sciences, Sharda University, Greater Noida, UP. Department of Pediatric Nursing, Shri Mata Vaishno Devi College of Nursing, Katra, J&K
[2]Assistant Professor, Department of Nursing Sciences, Sharda University, Greater Noida, UP
[3]Professor, Department of Orthodontics & Dentofacial orthopedics, School of Dental Sciences, Sharda University, Greater Noida, UP
[4]Associate Dean, Sharda School of Nursing Sciences, Sharda University, Greater Noida, UP
[5]PhD Scholar, Department of Nursing Sciences, Sharda University, Greater Noida, UP

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ABSTRACT

Background: Cancer is a leading cause of death worldwide, with breast cancer being the most prevalent type of cancer among women. It occurs when abnormal cells in the breast grow uncontrollably. Anxiety and depression are common psychological responses among breast cancer patients, which can significantly impact their quality of life (QoL). This study aims to evaluate the prevalence of anxiety in breast cancer patients and explore the effectiveness of Progressive Muscle Relaxation (PMR) therapy in alleviating anxiety and improving QoL. Methods: A review of the literature published between 2015 and 2025 was conducted using databases such as PubMed, Google Scholar, Scopus, ResearchGate, and CINHAL. The search utilized MeSH terms including "Breast Cancer," "Anxiety," "Quality of Life," and "Progressive Muscle Relaxation." A total of 24 studies that met the inclusion criteria were included in this narrative review. Results: The majority of studies reported a high prevalence of anxiety and depression among breast cancer patients, which negatively affects their quality of life. Several studies highlighted the positive impact of complementary therapies, including PMR, in improving psychological well-being and health-related quality of life (HRQoL) among these patients. Conclusion: Progressive Muscle Relaxation (PMR) is a simple and effective therapy that can help reduce anxiety in breast cancer patients. Combined interventions using PMR and other complementary therapies may further enhance the psychological and physical health of patients. A longer duration of therapy (12-14 weeks) is recommended for optimal results.

INTRODUCTION

Breast cancer is a condition characterized by uncontrolled growth of abnormal cells within the breast, often leading to the formation of tumors. While early-stage breast cancer is not typically fatal, it can spread to nearby tissues or lymph nodes, making it life-threatening. Breast cancer primarily affects women, with nearly 99% of cases occurring in females. The treatment approach for breast cancer depends on its subtype and whether it has spread to other areas of the body.[1]

Globally, breast cancer represents the most common cancer among women. In India, it accounts for approximately 28.2% of all female cancers, with over 216,000 new cases reported

*Corresponding author: **Pooja Rani**

PhD Scholar, Department of Nursing Sciences, Sharda University, Greater Noida, UP. Department of Pediatric Nursing, Shri Mata Vaishno Devi College of Nursing, Katra, J&K

in 2022. Projections indicate that the global burden of breast cancer will surpass 2 million cases by 2030.[2]

PROGRESSIVE MUSCLE RELAXATION (PMR)

Progressive Muscle Relaxation (PMR) is a relaxation technique developed by Dr. Edmund Jacobson in the 1920s. It involves systematically tensing and relaxing muscle groups to promote physical and mental relaxation. Numerous studies have shown that PMR effectively reduces anxiety and improves overall emotional well-being.[3]

PMR Protocol: PMR is simple and does not require any special equipment. It can be done in a quiet environment where the individual can focus. The procedure involves tensing a muscle group for 5 seconds, followed by a complete relaxation of the muscle for 10-20 seconds. The entire session typically takes 15-20 minutes and should be practiced daily for 2-3 months to see significant results.[3]

ANXIETY

Anxiety is a feeling of unease, typically generalized and unfocused, that often arises in response to a stressful situation like breast cancer. To assess anxiety levels in breast cancer patients, the Generalized Anxiety Disorder 7-item (GAD-7) scale is commonly used. This self-reported tool allows patients to rate the severity of their anxiety over the past two weeks. Scoring for GAD-7: 0–4: Minimal anxiety, 5–9: Mild anxiety, 10–14: Moderate anxiety, 15–21: Severe anxiety

QUALITY OF LIFE (QoL)

Health-related quality of life (HRQoL) refers to how a person's well-being—physical, emotional, social, and psychological—is affected by their health condition. In the case of breast cancer, HRQoL is impacted by both the physical toll of the disease and the psychological stress of treatment. Tools such as the EORTC QLQ-C30 questionnaire are used to assess the quality of life in breast cancer patients.

METHODOLOGY

A narrative review design was used to analyze studies published between 2015 and 2025. Databases such as PubMed, Google Scholar, Scopus, ResearchGate, and CINHAL were searched using keywords like "Breast cancer," "Anxiety," "Quality of life," and "Progressive muscle relaxation."

Inclusion Criteria:

1. Studies on anxiety prevalence in breast cancer patients.
2. Research on the effectiveness of PMR on anxiety and quality of life in breast cancer patients.
3. Studies available in full-text English.

Exclusion Criteria:

1. Systematic reviews and meta-analyses.
2. Non-English studies.
3. Studies not freely available in full-text format.

RESULTS AND DISCUSSION

Studies highlighted in this review consistently demonstrate that anxiety is prevalent in breast cancer patients and can severely affect their quality of life. For instance, a study by Ute Goerling et al. (2023) found that the level of anxiety was significantly higher in patients undergoing rehabilitation compared to those receiving inpatient or outpatient treatments. Other studies, such as by Elvana Podvorica et al. (2022), found that the prevalence of anxiety (82%) was much higher than that of depression (68%). Research on PMR also reveals its significant effectiveness in reducing anxiety. For example, a study by Seher Gurdil Yilmaz et al. (2015) showed that PMR significantly lowered state anxiety in breast cancer patients undergoing chemotherapy. Additionally, studies combining PMR with other therapies, such as music or mindfulness meditation, have proven beneficial in reducing anxiety and enhancing overall well-being.

Author & Year	Title	Rsearch Design	Sampling Technique	Sample Size	Data Collection Tool	Result
Ute Goerling et al. 2023	Prevalence and severity of anxiety in cancer patients	Epidemiological cross-sectional study	Purposive sampling	4020	GAD-7 scale	The prevalence of anxiety was observed to be 13.8% (GAD-7≥10). The level of anxiety was significant higher for patients in rehabilitation, compared to patients during inpatient and outpatient treatment (p=.013).
Elvana Podvorica et al. 2022	Anxiety and Depression in Patients with Breast Cancer: A Cross-sectional Study	Cross-sectional Study	Simple random sampling	50	Hospital Anxiety and Depression Scale (HADS)	Anxiety score, some of them were caseness level with 82%, while 26% of study participants were in borderline, 6% in caseness, and some of them were in normal level from 68% on the depression score.
Vivek Srivastava et al. 2016	Study of Anxiety and Depression among Breast Cancer Patients from North India	Prospective study	NA	200	Hospital Anxiety and Depression Scale (HADS)	Out of 200 women with breast cancer, 74 (37.0%) were screened of having anxiety and 56 (28.0%) were screened as having depression.

Konstantinos Tsaras et al. 2018	Assessment of Depression and Anxiety in Breast Cancer Patients: Prevalence and Associated Factors	Cohort study	Random sampling	152	PHQ-2 and GAD-2 scales	Result showed prevalence 38.2% (58/152) for depression and 32.2% (49/152) for anxiety.
Mohd Rohaizat Hassan et al. 2015	Anxiety and Depression among Breast Cancer Patients in an Urban Setting in Malaysia	Cross sectional study	NA	205	Hospital Anxiety and Depression Scale (HADS)	Result showed that among breast cancer patients, the prevalence of anxiety was 31.7% and depression 22.0%.
Naskar, Soumi et al. 2024	Effect of mindfulness-based intervention on perceived stress among breast cancer patients undergoing chemotherapy	Quasi experimental study	Purposive sampling	40	Perceived Stress Scale (PSS 10)	Result showed that MBI was an effective therapy for reducing the perceived stress of breast cancer patients undergoing chemotherapy ($t = 2.2463$) ($P = 0.0306$) at the $P < 0.05$.
Seher Gurdil Yilmaz et al. 2015	Effects of Progressive Relaxation Exercises on Anxiety and Comfort of Turkish Breast Cancer Patients Receiving Chemotherapy	Control group, pre-test/post-test, quasi-experimental design	Random Sampling	60	State-Trait Anxiety Inventory	The finding shows that the practice of relaxation exercises was effective in reducing the levels of the state of anxiety of breast cancer patients. Mean post test anxiety score: Intervention group- 36.2±8.21 Control group- 43.4±7.96
Ricky Z. 2022	The Effectiveness of Progressive Muscle Relaxation (PMR) Against Anxiety in Breast Cancer Patients Undergoing Chemotherapy	Quasi experimental research design	Purposive sampling technique	30	State-Trait Anxiety Inventory	Based on total anxiety, there was a decrease in the average anxiety score of 22.93 after being given Progressive Muscle Relaxation (PMR) exercise therapy, state anxiety was 13.53 and trait anxiety was 9.4. Progressive Muscle Relaxation (PMR) exercise therapy can effectively reduce anxiety in breast cancer patients
Zehra Gok Metin et al. 2019	Effects of progressive muscle relaxation and mindfulness meditation on fatigue, coping styles, and quality of life in early breast cancer patients: An assessor blinded, three-arm, randomized controlled trial	Randomized controlled trial	Random sampling	92	Brief Fatigue Inventory (BFI), Brief COPE, and Functional Living Index-Cancer (FLIC).	Result showed that PMR and Mindful Meditation interventions assist in decreasing fatigue severity and improving coping styles among patients with Early Breast Cancer.
Kayo Inoue et al. 2021	The Effectiveness of Complementary Therapy as Mind–Body Practice on Quality of Life among Cancer Survivors: A Quasi-Experimental Study	A QuasiExperimental Study	Simple random sampling	190	Health related QOL scale Short Form8 (SF8)	Complimentary therapy is effective in improving mental aspect of quality of life among cancer patients.

Andreas Charalambous et al. 2015	Effectiveness of Progressive Muscle Relaxation and Guided Imagery as Anxiety Reducing Interventions in Breast and Prostate Cancer Patients Undergoing Chemotherapy	A Randomized Controlled Trial	Simple random sampling	236	SAS and BECK-II questionnaires for anxiety and depression	The findings showed that PMR and GI sessions were effective to reduce anxiety and depression. Anxiety score before the intervention (45.01 ± 6.9) Anxiety score after the intervention (38.71 ± 6.1)
Khanh Thi Nguyen et al. 2022	Effects of music intervention combined with progressive muscle relaxation on anxiety, depression, stress and quality of life among women with cancer receiving chemotherapy	Pilot randomized controlled trial	Convenience sampling	24	Depression Anxiety Stress Scale and Functional Assessment of Cancer Therapy–General (FACT-G)	Implementing music intervention combined with progressive muscle relaxation is feasible in reducing anxiety, depression and stress levels in breast cancer patients

CONCLUSION

Anxiety and depression are widespread among breast cancer patients, severely affecting their quality of life. Progressive Muscle Relaxation (PMR) is a simple yet effective intervention for alleviating anxiety. Using PMR in combination with other complementary therapies can yield even greater benefits. Longer therapy durations (12-14 weeks) are more effective in reducing psychological distress and improving the quality of life of breast cancer patients.

FUTURE SCOPE

Future studies should investigate the combined effects of multiple complementary therapies in treating psychological issues in cancer patients. Additionally, research should focus on evaluating the long-term benefits of PMR for cancer patients, particularly in diverse populations with different types of cancers.

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