

## Mapping the Pain Trajectory of Breast Cancer Survivors: Results from a Retrospective Chart Review

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**Abstract :** Background: Pain is a prevalent and debilitating symptom among breast cancer patients, impacting their quality of life and overall well-being. The experience of pain in this population is multifaceted, influenced by a combination of disease-related factors, treatment side effects, and individual characteristics. Despite advancements in cancer treatment and pain management, many breast cancer patients continue to suffer from chronic pain, which can persist long after the completion of treatment. Understanding the progression of pain in breast cancer patients over time and identifying its correlates is crucial for effective pain management and supportive care strategies. The purpose of this research is to understand the patterns and progression of pain experienced by breast cancer survivors over time. Methods: Data were collected from breast cancer patients at Hartford Hospital at four time points: baseline, 3, 6 and 12 weeks. Key variables measured include pain, body mass index (BMI), fatigue, musculoskeletal pain, sleep disturbance, and demographic variables (age, employment status, cancer stage, and ethnicity). Binomial generalized linear mixed models were used to examine changes in pain and symptoms over time. Results: A total of 100 breast cancer patients aged  $\geq 18$  years old were included in the analysis. We found that the effect of time on pain ( $p = 0.024$ ), musculoskeletal pain ( $p = <0.001$ ), fatigue ( $p = <0.001$ ), and sleep disturbance ( $p\text{-value} = 0.013$ ) were statistically significant with pain progression in breast cancer patients. Patients using aromatase inhibitors have worse fatigue ( $<0.05$ ) and musculoskeletal pain ( $<0.001$ ) compared to patients with Tamoxifen. Patients who are obese ( $<0.001$ ) and overweight ( $<0.001$ ) are more likely to report pain compared to patients with normal weight. Conclusion: This study revealed the complex interplay between various factors such as time, pain, sleep disturbance in breast cancer patient. Specifically, pain, musculoskeletal pain, sleep disturbance, fatigue exhibited significant changes across the measured time points, indicating a dynamic pain progression in these patients. The findings provide a foundation for future research and targeted interventions aimed at improving pain in breast cancer patient outcomes.

**Keywords :** breast cancer, chronic pain, pain management, quality of life

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