

Sleep quality and lymphedema in breast cancer survivors: a mixed methods study

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Introduction: The purpose of this convergent mixed methods study was to assess the perceptions and characteristics of sleep in breast cancer survivors (BCS) with lymphedema.

Method: Participants were BCS with and without lymphedema. Both groups completed the Pittsburgh Sleep Quality Index (PSQI), PROMIS® Sleep Disturbance (8a short form) and wore an actigraph on their wrist to capture sleep/wake cycles for 7 days/nights while logging their sleep using a sleep diary. The coefficient of variation of sleep efficiency was calculated from the sleep diary to assess intraindividual variability. A subsample of seven BCS with lymphedema participated in a semi-structured qualitative interview. The qualitative data were analysed separately, and the themes were applied to clarify the quantitative outcomes.

Results: The BCS with lymphedema (n=23) had a significant difference in PSQI ($p=0.002$), PROMIS® Sleep Disturbance ($p=0.084$), and sleep efficiency coefficient of variation ($p=0.014$) compared to BCS without lymphedema (n=23). There were no statistically significant differences between groups in the actigraphy results. In alignment with sleep measure differences, BCS with lymphedema reported that their poor sleep quality was a large contributor to their mind and body fatigue and influenced their lymphedema management, supporting the differences in sleep disturbance seen between the two groups.

Conclusion: This study provides the foundation for future research to investigate the integration of sleep interventions with lymphedema management for holistic survivorship care for BCS with lymphedema.