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Pilates method and augmented reality: strategies to improve the quality of life for public health system users diagnosed with breast cancer: a randomized study

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Objective: To evaluate the effectiveness of applying the Pilates method and augmented reality to improve the quality of life of breast cancer patients who use the Brazilian Unified Health System (SUS). **Methods:** Design, setting, and participants; this controlled, randomized, prospective, single-center clinical trial will analyze data from SUS users undergoing treatment for breast cancer between 2025 and 2026. Inclusion criteria: women, over 18 years old, SUS users, diagnosed with breast cancer and undergoing treatment at the Advanced Breast Diagnostic Center (CORA) at the Hospital das Clínicas in Goiânia. Exclusion criteria: clinical, orthopedic, or neurological contraindications that prevent the practice of physical activity and less than 85% of the expected frequency of activities. Interventions: the experimental group will be formed by 75 women who will practice 12 Pilates exercises, and the control group will comprise 150 women who will perform 12 exercises with augmented reality. Participants will be screened by a specific team and randomly allocated to two groups according to their entry into the project: intervention group and control group. Randomization will be on a 1:2 scale. As soon as the first patient accepts and signs the informed consent form, she will be allocated to the intervention group and the next two will be automatically allocated to the control group and so on for the remaining participants. The time of participation in the project will be a minimum of three months and a maximum of six months, with a frequency of two classes per week. Ethical aspects: the project was submitted for approval by the research ethics committee of the Hospital das Clínicas of the Federal University of Goiás (CEP/HC/UFG), opinion n° 7,070,731, and in the Brazilian Registry of Clinical Trials, UTN n° U1111-1316-6505. **Results:** Main expected results and measures: to improve the quality of life assessed by the questionnaire (EQ-5D-3L). **Conclusion:** The study is in the structural phase to later start clinical protocols.

Keywords: breast neoplasms; augmented reality; virtual reality; quality of life; comprehensive health care.