INPLASY

Effects of Baduanjin Exercise on Cancer Survivors: A Systematic Review Protocol

Li, JQ; Li, MY; Wang, T; Wang, HY; Terry, D; Deravin, L; Sharma, S; Tan, JY.

Corresponding author:
Jing- Yu (Benjamin) TAN

benjamin.tan@unisq.edu.au

Author Affiliation:
University of Southern Queensland.

INTRODUCTION

Review question / Objective This systematic review aims to evaluate the effectiveness of Baduanjin exercise (BdjE) among cancer survivors and to assess existing intervention protocols, providing an evidence-based foundation for developing a BdjE protocol specifically for breast cancer survivors.

Condition being studied Cancer is a leading cause of death worldwide, with nearly 20 million new cases, causing about 10 million deaths in 2022 (Ferlay et al. 2024). With the advancement in cancer prevention and treatment, the 5-year relative survival has increased from 54.5% in 1991-1995 to 71.2% in 2016-2020, resulting in a growing population of cancer survivors (Australian Institute of Health and Welfare 2024). Despite its positive outcome, cancer survivors commonly experience a range of sequelae, including fatigue, sleep disturbances, and depression, which reduce overall quality of life. BdjE, a traditional mind-body exercise, has gained increasing attention in recent years for its potential to improve physical and psychological outcomes among cancer survivors (Chen et al., 2024). This review aims to identify evidence on the effects of BdjE on health outcomes among cancer survivors and to summarise the intervention protocols used in existing studies.

METHODS

Search strategy MeSH terms, entry terms, keywords, and free words will be used to develop the search strategies to identify possible studies, such as 'cancer survivors', 'cancer', 'Baduanjin', 'Eight-Section Brocade', and 'controlled clinical trial'. Boolean operators will be applied to generate the search strategy.
The details of the search strategy for PubMed are as follows:
("Cancer Survivors"[MeSH Terms] OR "neoplasms"[MeSH Terms] OR ("cancer survivor*"[Title/Abstract] OR "cancer

survivorship*"[Title/Abstract] OR "cancer patient*"[Title/Abstract] OR "cancer*"[Title/Abstract] OR "tumor*"[Title/Abstract] OR "neoplas*"[Title/Abstract] OR "malignan*"[Title/Abstract]]) AND ("Baduanjin"[Title/Abstract] OR "baduanjin exercise*"[Title/Abstract] OR "Ba Duan Jin"[Title/Abstract] OR "Eight-Section Brocade"[Title/Abstract]) AND ("random*"[Title/Abstract] OR "control*"[Title/Abstract] OR "trial*"[Title/Abstract] OR "randomized controlled trial"[Publication Type] OR "clinical trial"[Publication Type] OR "controlled clinical trial"[Publication Type] OR "RCT").

Participant or population Individuals with a diagnosis of cancer, regardless of the cancer type and stage.

Intervention Classical Baduanjin exercise. Classical Baduanjin exercise is defined as the traditional eight-form Baduanjin Qigong, performed according to an established and standardised sequence of movements, without modification or combination with other exercise modalities.

Comparator Routine care, daily exercise, or any other interventions.

Study designs to be included Only Randomised Controlled Trials （RCTs） will be included.

Eligibility criteria Inclusion criteria: (1)Participants were adult survivors (≥18 years old) regardless of cancer type and stage; (2) Baduanjin exercise was adopted as intervention and compared with usual care or other interventions; (3) RCT studies published in a peer-reviewed journal; (4) Physical (e.g., pain, fatigue, and sleep quality) and/or psychological outcomes (e.g., depression, anxiety, and fear of cancer recurrence) were reported and measured using validated instruments.
The exclusion criteria: (1) Studies involving sitting BdjE, modified BdjE, parts of BdjE, or combined other interventions with BdjE where BdjE effects could not be isolated as an independent intervention; (2) Abstracts, conference proceedings, posters, and registration protocols; (3) Non-English publications.

Information sources The review will search eight English-language databases: Cochrane Library, PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Embase, Web of Science, Scopus, PsycINFO, and ProQuest One Academic. The date range will be from the inception of each database to November 2025. References of included studies will be reviewed to identify eligible research not captured by the initial search.

Main outcome(s) The primary outcome will be the effects of BdjE on physical and psychological outcomes among cancer survivors. The secondary outcome will be the Baduanjin exercise intervention protocols adopted in the included studies.

Data management Initial search results will be imported to Covidence for screening and data extraction.

Quality assessment / Risk of bias analysis The Risk of Bias version 2 (RoB 2) will be used to assess the quality of the included studies (Sterne et al., 2019). Two independent reviewers will conduct the assessments, with any disagreements resolved by consulting a third reviewer (JQL and MYL).

Strategy of data synthesis Clinical heterogeneity will be assessed based on pre-specified criteria, including participant characteristics (e.g., cancer type and treatment stage), intervention characteristics (e.g., duration, frequency, and intervention period), comparator conditions, and outcome measures (e.g., type of outcome and measurement instruments). If the data are appropriate, the effectiveness of physical and psychological outcomes will be analysed through a meta-analysis. If the data are clinically heterogeneous, descriptive analysis will be used to report the effectiveness of interventions. Descriptive analysis will also be adopted to summarise the BdjE intervention protocols among cancer survivors, including intervention duration, frequency, length, and delivery format.

Subgroup analysis Subgroup analyses will be performed based on cancer type, intervention duration, session frequency, delivery mode, or comparator type, when adequate data are available. Otherwise, results will be reported narratively.

Sensitivity analysis Sensitivity analysis will only be conducted if meta-analysis is performed. If quantitative synthesis is not feasible, sensitivity analysis will not be applicable.
Sensitivity analyses will be performed by excluding studies rated as high risk of bias and by comparing fixed- and random-effects models to assess the robustness of the results.

Language restriction English.

Country(ies) involved Australia.

Keywords Cancer survivor; Baduanjin; systematic review.

Dissemination plans The systematic review will be published in a peer-reviewed journal.

Contributions of each author
Author 1 - JINQIU LI - Conceptualisation, data curation, formal analysis, and writing-original draft.
Email: jinqiu.li@unisq.edu.au
Author 2 - Mengyuan LI - Data curation and formal analysis.
Email: mengyuan.li@unisq.edu.au
Author 3 - Tao Wang - Conceptualisation, supervision, and writing-review &editing.
Email: alison.wang@unisq.edu.au
Author 4 - Haiying Wang - Conceptualisation, supervision, and writing-review &editing.
Email: emily.wang@unisq.edu.au
Author 5 - Daniel Terry - Conceptualisation, supervision, and writing-review &editing.
Email: daniel.terry@unisq.edu.au
Author 6 - Linda Deravin - Conceptualisation, supervision, and writing-review &editing.
Email: linda.deravin@unisq.edu.au
Author 7 - Sita Sharma - Conceptualisation, supervision, and writing-review &editing.
Email: sita.sharma@unisq.edu.au
Author 8 - Jing-Yu (Benjamin) Tan - Conceptualisation, supervision, and writing-review &editing.
Email: benjamin.tan@unisq.edu.au

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Kirkham, J. J., Lasserson, T., Li, T., . . . Higgins, J. P. T. (2019). RoB 2: a revised tool for assessing risk of bias in randomised trials. Bmj, 366.