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Effects of resistance exercise on physical fitness, quality of life, and fatigue in cancer patients: a systematic review

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 07 November 2023 and was last updated on 07 November 2023.

INTRODUCTION

Review question / Objective This review focuses on the effects of different forms of resistance exercise interventions on physical fitness, quality of life and fatigue in cancer patients.

Condition being studied Cancer is the second leading cause of death in the world. As the number of cancer survivors and the length of survival increases, the long-term health problems associated with cancer treatment and its associated aspects become increasingly important, and cancer patients undergoing treatment experience treatment-related symptoms and side effects such as nausea, insomnia, and diarrhea, regardless of their cancer diagnosis. Patients report fatigue, decreased physical strength and decreased quality of life (QOL).

The impact of exercise intervention on cancer patients has received increasing attention, and there is increasing evidence that exercise intervention can significantly improve physical and mental function, including quality of life, in cancer patients.

METHODS

Search strategy PubMed, Scopus, Web of Science; limit on language with English. The following key words: Tumor, Cancers, Malignancy, Resistance, Strength Training, Weight-Lifting Strengthening Program.

Participant or population Participants were adults who were currently or previously diagnosed with cancer, were undergoing cancer treatment, or had completed treatment.

Intervention Resistance training The inclusion criteria were as follows: (1) Exercise intervention was performed in the intervention group. (2) The control group did not receive any form of exercise intervention. (3) Before and after a single group, exercise training as part of a variety of interventions (e.g. combined with protein supplementation), not excluded.

Comparator Blank control The control group did not receive any form of exercise intervention.

Study designs to be included Randomized Controlled trials, Non-RCT clinical trials (controlled clinical trials and other quasi-trials).

Eligibility criteria The inclusion criteria were as follows: (1) Exercise intervention was performed in the intervention group. (2) The control group did not receive any form of exercise intervention. (3) Before and after a single group, exercise training as part of a variety of interventions.

Information sources PubMed, Scopus, Web of Science; limit on language with English.

Main outcome(s) Resistance exercise has significant effects on physical fitness, quality of life and fatigue of cancer patients.

Quality assessment / Risk of bias analysis The quality of the randomized controlled trial (RCT) literature was assessed according to the Cochrane Handbook for Systematic Reviews of Interventions. The literature quality assessment for nonrandomized experimental studies is based on MINORS entries.

Strategy of data synthesis The data were extracted from the included articles using a data extraction form. Sample sizes were collected. Details on exercise interventions were recorded including the exercise type, exercise session, frequency, and program duration. The effects of the exercise training on physical fitness, quality of life and fatigue were collected, including physical fitness, quality of life and fatigue measures and the study result.

Due to the heterogeneity of different measurement tools in the included studies, the expression of outcome indicators is not uniform, so this study did not conduct a meta-analysis. Therefore, according to the Cochrane Handbook for systematic reviews of interventions, systematic evaluation and qualitative analysis were conducted on the included studies.

Subgroup analysis Due to the nature of the study, no subgroup analysis was performed.

Sensitivity analysis Due to the nature of the study, no Sensitivity subgroup analysis was performed.

Language restriction English.

Country(ies) involved China/Ningbo University.

Keywords Resistance; Cancer; Physical fitness; Quality of life; Fatigue; Systematic review.

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