

INPLASY PROTOCOL

The effects of active video game on overweight and obese adolescents: A systematic review

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Review Stage at time of this submission: Piloting of the study selection process.

Conflicts of interest:
None declared.

Review question / Objective: The aim of the study was to carry out a systematic review of scientific literature addressing the effect of the use of exergames through longitudinal and experimental studies.

Condition being studied: The results of most studies focus on the changes of BMI, PA level or other biochemical indexes, and there are few studies on the psychological changes of participants.

Information sources: Four international databases: the SCOUNS, PubMed, EBSCOhost (SPORTDiscus), and Web of Science.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 05 October 2021 and was last updated on 05 October 2021 (registration number INPLASY2021100018).

INTRODUCTION

Review question / Objective: The aim of the study was to carry out a systematic review of scientific literature addressing the effect of the use of exergames through longitudinal and experimental studies.

Condition being studied: The results of most studies focus on the changes of BMI, PA level or other biochemical indexes, and there are few studies on the psychological changes of participants.

METHODS

Participant or population: Overweight and obese adolescents.

Intervention: Active video games.

Comparator: None.

Study designs to be included: randomized controlled trial (RCT), non-randomized controlled trial (Non-RCT) with two or more

groups, and single-group trials with pretest and post-test design RCT.

Eligibility criteria: We used the PICOS (population, intervention, comparison, outcome, study design) as the inclusion criteria, were included. Thus, studies were included if they met the following criteria: (1) A fulltext, peer-reviewed study published in English, describing the effects of exergames interventions on overweight and obese adolescents (male and female), randomized controlled trial (RCT), non-randomized controlled trial (Non-RCT) with two or more groups, and single-group trials with pretest and post-test design; (2) In this study, only included studies on planned and organized exergames intervention to improve or maintain physical activity, weight-loss and other changes of biochemical indexes; (3) There were no restrictions on the sample size, study location, and intervention time for the included studies. (4) The publication time of the article is from 2010 to July 2021. Articles in this period can be included. Studies were excluded if they met several exclusion criteria: (1) Studies published articles, meeting abstracts, case report.

Information sources: Four international databases: the SCOPUS, PubMed, EBSCOhost (SPORTDiscus), and Web of Science.

Main outcome(s): BMI, weight-loss, PA level, intensity.

Quality assessment / Risk of bias analysis: An assessment of the study quality, according to the PEDro list. The mean PEDro score of the included studies was 3.44 (range 3–4), which indicates that the included studies were of fair quality, and none of the studies met all the PEDro list quality criteria. All studies specified their eligibility criteria, similar base line group, between group comparisons, point measure and variability. None of the studies reported on allocation concealment, blind subject, blind therapist, blind assessor, or intention to treat analysis, except for three studies which described random allocation. Nevertheless, it is challenging to include

blind subjects, blind therapists, and blind assessors as participants and assessors, since the included studies were exergame interventions. This situation calls for higher quality and better evidence level studies to be conducted in the future.

Strategy of data synthesis: After the data search was complete, data were obtained from eligible studies in a predetermined extraction form [Including, (1) Author, title, publication year; (2) Research design; (3) Sample size, control group; (4) Participant characteristics (age, gender, etc.); (5) Intervention features (type, length, and frequency); (6) Measures index, and (7) Research outcomes]. One author abstracted information into the standard form and the other author checked it.

Subgroup analysis: None.

Sensitivity analysis: None.

Country(ies) involved: China, Malaysia.

Keywords: (("Nintendo Wii" OR "Exergam*" OR "Active video gam*" OR "Interactive gam*" OR "Exercise video gam*") AND ("Child*" OR "Adolescen*").

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