

INTRODUCTION

Youth overweight is currently a public health problem, specially on developed countries (Lobstein et al., 2004). This is a result of the reduction of physical activity and energy intake increase (Atkin et al., 2011). Children and adolescents are also exposed to new forms of sedentary activity: video games. However, with the development of technology, a new generation of video games has emerged. These video games, also named as "active video games" (AVG), may contribute to increase youth Physical Activity (PA) levels. This systematic review aims to provide a synthesis of the current knowledge regarding physical activity promotion in overweight children and adolescents through AVG play.

METHODS

Search strategy

We conducted a research strategy in PubMed, on January 2012, using terms according to the PICO model, with help of the question: "Can active video games improve PA in overweight children and adolescents?"

All terms were determined after examining literature. The search terms were used independently and were later grouped using AND and OR terms.

Study selection

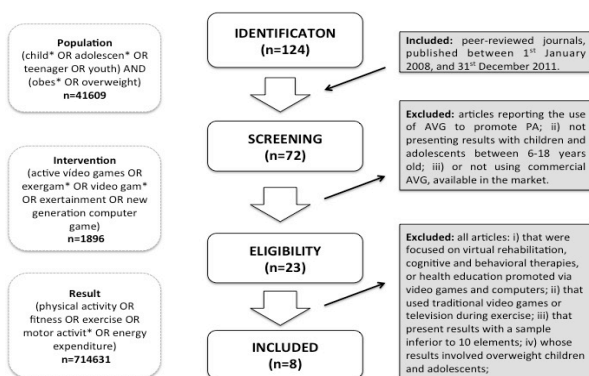


Figure 1 - Study search flowchart

Data extraction and synthesis

One reviewer examined titles and abstracts, in a non-blinded review to the journal and names of the authors. The reviewer was responsible for data extraction, as well as its analysis. Data extraction included: i) methodological details (e.g. sample size, participants' age, and outcome measures); ii) key findings (main results).

Study quality assesement

The quality of observational studies was evaluated by level of evidence (Council NHaMR, 2008). The experimental trials were assessed using PEDro evaluation scale (Maher et. Al, 2003). This scale is used to describe the internal and statistical validity of study designs, mostly with respect to allocation, blinding and dropout rates.

RESULTS

From the 124 article we have identified 2 randomized trials (Adamo et al., 2010; Maddison et al., 2011) and 6 observational studies (Mitre et al., 2011; Penko & Barkley, 2010; Baley & McInnis, 2011; Haddock et al., 2009; Sit et al., 2010; Christison & Khan, 2011) meeting the inclusion criteria.

The energy expenditure with AVG ranged between 2,12 and 8,8 METs, according to game type.

It seems that children enjoyed more AVG than sedentary video games (Haddock et al., 2009; Penko & Barkley, 2010).

The only randomized controlled trial that was made with a home-based AVG shows a significant body mass index reduction ($p < 0.05$) in the experimental group (Maddison et al., 2011).

CONCLUSIONS

Youth PA levels are a question of public health. It seems to increase PA levels is important to have a multifaceted approach, where the interventions need to be educative and attractive to children and adolescents.

The AVG seems to have a potential role in PA promotion, because of its intrinsic value as an enjoyable activity. In overweight children and adolescents the use of home-based AVG may be an opportunity to increase PA, developing motor skills and overcoming physical inactivity barriers.

References

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