



*Supplementary Material*

**Table S1.** PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol.

Section and topic	Item No	Checklist item	Page reported
<b>ADMINISTRATIVE INFORMATION</b>			
Title:		School-based interventions for promoting physical activity using games and gamification: A Systematic Review Protocol	
Identification	1a	Identify the report as a protocol of a systematic review	1
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	n/a
Registration	2	If registered, provide the name of the registry (such as PROSPERO) and registration number	1
Authors:			
Contact	3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	7
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	n/a
Support:			
Sources	5a	Indicate sources of financial or other support for the review	7

Sponsor	5b	Provide name for the review funder and/or sponsor	n/a
Role of sponsor or funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	n/a
<b>INTRODUCTION</b>			
Rationale	6	Describe the rationale for the review in the context of what is already known	1-2
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	3
<b>METHODS</b>			
Eligibility criteria	8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	3-4
Information sources	9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	4-5
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, so that it could be repeated	Suppl. Material 2
Study records:			
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	4-5
Selection process	11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	4-5
Data collection process	11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	4-5

Data items	12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	4-5
Outcomes prioritization	and 13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	5
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	n/a
Data synthesis	15a	Describe criteria under which study data will be quantitatively synthesised	4/5
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as $I^2$ , Kendall's $\tau$ )	5
	15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	n/a
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	n/a
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	5
Confidence cumulative evidence	in 17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	n/a

\* It is strongly recommended that this checklist be read in conjunction with the PRISMA-P Explanation and Elaboration (cite when available) for important clarification on the items. Amendments to a review protocol should be tracked and dated. The copyright for PRISMA-P (including checklist) is held by the PRISMA-P Group and is distributed under a Creative Commons Attribution Licence 4.0.

Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart L, PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. *BMJ*. 2015, 349, 7647.

**Table S2.** Search strategy in databases.

Electronic base	Search strategy
PubMed	((((game*[Title/Abstract] OR 'game based learning' [Title/Abstract] OR 'GBL' [Title/Abstract] OR video gam*[Title/Abstract] OR mobile gam*[Title/Abstract] OR exergam*[Title/Abstract] OR 'AVG' [Title/Abstract] OR active video gam*[Title/Abstract] OR gamifi*[Title/Abstract] OR gamification[Title/Abstract] OR 'serious games' [Title/Abstract] OR 'applied games' [Title/Abstract] OR app gam*[Title/Abstract])) AND ('physical activity' [Title/Abstract] OR walk[Title/Abstract] OR steps[Title/Abstract] OR 'physical fitness' [Title/Abstract] OR 'leisure activity' [Title/Abstract] OR 'motor activity' [Title/Abstract] OR exercise[Title/Abstract] OR training[Title/Abstract] OR sport[Title/Abstract])) AND (School[Title/Abstract] OR kindergar*[Title/Abstract] OR 'high school' [Title/Abstract] OR 'nursery school' [Title/Abstract])) AND (intervention*[Title/Abstract] OR program*[Title/Abstract] OR school-based[Title/Abstract])) AND (preschool*[Title/Abstract] OR child*[Title/Abstract] OR adolescen*[Title/Abstract] OR young*[Title/Abstract] OR youth[Title/Abstract] OR kid[Title/Abstract] OR teenage[Title/Abstract])
Web of science	(((TOPIC: (((((((((((game* OR 'game based learning' OR 'GBL') OR video gam*) OR mobile gam*) OR exergam*) OR 'AVG') OR active video gam*) OR gamifi*) OR gamification) OR 'serious games') OR 'applied games') OR app gam*) AND TOPIC: (((((((('physical activity' OR walk) OR steps) OR 'physical fitness') OR 'leisure activity') OR 'motor activity') OR exercise) OR training) OR sport)) AND TOPIC: ((school OR kindergar*) OR 'high school') OR 'nursery school')) AND TOPIC: ((intervention* OR program*) OR school-based)) AND TOPIC: (((((preschool* OR child*) OR adolescen*) OR young*) OR youth) OR kid) OR teenage))
SPORTDiscus	TI ( game* or 'game based learning' OR 'GBL' or video gam* or mobile gam* or exergam* or 'AVG' or active video gam* or gamifi* or gamification or 'serious games' or 'applied games' or app gam* ) AND TI ('physical activity' or walk or steps or 'physical fitness' or 'leisure activity' or 'motor activity' or exercise or training or sport ) AND TI ( school or kindergar* or 'high school' or 'nursery school' ) AND TI ( intervention* or program* or school-based ) AND TI ( preschool* or child* or adolescen* or young* or youth or kid or teenage )
Cochrane library	(game* or 'game based learning' or 'GBL' or video gam* or mobile gam* or exergam* or 'AVG' or active video gam* or gamifi* or gamification or 'serious games' or 'applied games' or app gam*) in Title Abstract Keyword AND ('physical activity' or walk or steps or 'physical fitness' or 'leisure activity' or 'motor activity' or exercise or training or sport) in Title Abstract Keyword AND (school or kindergar* or 'high school' or 'nursery school') in Title Abstract Keyword AND (intervention* or program* or school-based ) in Title Abstract Keyword AND (preschool* or child* or adolescen* or young* or youth or kid or teenage) in Title Abstract Keyword - (Word variations have been searched)

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ERIC	ab(game* or 'game based learning' or 'GBL' or video gam* or mobile gam* or exergam* or 'AVG' or active video gam* or gamifi* or gamification or 'serious games' or 'applied games' or app gam*) AND ab('physical activity' or walk or steps or 'physical fitness' or 'leisure activity' or 'motor activity' or exercise or training or sport) AND ab(school or kindergar* or 'high school' or 'nursery school') AND ab(intervention* or program* or school-based ) AND ab(preschool* or child* or adolescen* or young* or youth or kid or teenage)
PsycINFO	ab(game* or 'game based learning' or 'GBL' or video gam* or mobile gam* or exergam* or 'AVG' or active video gam* or gamifi* or gamification or 'serious games' or 'applied games' or app gam*) AND ab('physical activity' or walk or steps or 'physical fitness' or 'leisure activity' or 'motor activity' or exercise or training or sport) AND ab(school or kindergar* or 'high school' or 'nursery school') AND ab(intervention* or program* or school-based ) AND ab(preschool* or child* or adolescen* or young* or youth or kid or teenage)

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