

A systematic review of the mental health impacts of sport and physical activity programmes for adolescents in post-conflict settings

Appendices

Appendix 1: PRISMA Checklist

#	Section/topic	Checklist item	Reported on page
TITLE			
1	Title	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
2	Structured summary	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	1
INTRODUCTION			
3	Rationale	Describe the rationale for the review in the context of what is already known.	3
4	Objectives	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	3
METHODS			
5	Protocol and registration	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	4
6	Eligibility criteria	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	4
7	Information sources	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	5
8	Search	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	23
9	Study selection	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	5
10	Data collection process	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	5
11	Data items	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	5
12	Risk of bias in individual studies	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	5
13	Summary measures	State the principal summary measures (e.g., risk ratio, difference in means).	N/A
14	Synthesis of results	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I ²) for each meta-analysis.	N/A
15	Risk of bias across studies	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	N/A

Appendix 1: PRISMA Checklist *continued*

14	Synthesis of results	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I ²) for each meta-analysis.	N/A
15	Risk of bias across studies	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	N/A
16	Additional analysis	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	N/A
RESULTS			
17	Study selection	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	6
18	Study characteristics	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	8
19	Risk of bias within studies	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	9
20	Risk of bias within individual studies	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	10
21	Synthesis of results	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	12
22	Risk of bias across studies	Present results of any assessment of risk of bias across studies (see Item 15).	N/A
23	Additional analysis	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	N/A
DISCUSSION			
24	Summary of evidence	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers)	14
25	Limitations	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	15
26	Conclusions	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	14-16
FUNDING			
27		Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	1

Appendix 2: Database search terms

Database Search

The following databases were searched: “Ovid”, “EBSCOHost”, “Dissertation Abstracts”, “Applied Social Sciences Index and Abstracts” (ASSIA), “Cochrane Controlled Trial Register”, “Education Resources Information Centre” (ERIC), “Institute of Development Studies” (accessed via OpenDocs), “International Bibliography of the Social Sciences”, “Latin American and Caribbean Health Sciences Literature” (LILACS), “Medicins Sans Frontieres Field Research”, “Web of Science”.

Manual searches

“African Journal of Physical, Health Education, Recreation and Dance”, “European Journal of Sport and Society”, “International Journal of Sport and Society”, “International Review of the Sociology of Sport”, “Journal of Sport for Development”, “Journal of Sport and Health Research”, “Journal of Sport and Social Issues”, “South African Journal for Research in Sport, Physical Education and Recreation”, “Sport, Education and Society”, “Sport in Society: culture, comment, media and politics”, “Intervention”, “Journal of Health and Sports Science and Child and Adolescent Mental Health”.

List of Humanitarian and Grey Literature websites searched

- <http://www.cadth.ca/en/resources/finding-evidence-is/grey-matters>
- <http://www.opengrey.eu/> (SIGLE)
- www.opendoar.org
- <http://ssrn.com/>
- Web Of Science Conference Proceedings Search
- National Registry of Evidence based programmes and practices
- PROSPERO
- WHO ICTR
- Forced Migration Online
- WHO
- UNICEF
- [UNHCR]
- International Platform of Sport for Development and Peace
- ReliefWeb
- United Nations Development Program (UNDP)
- United Nations Office on Sport for Development and Peace (UNOSDP)
- Right to Play
- Swiss Academy For Development

Appendix 3: Systematic review search terms

POP	[ADOLESCENT]	adolescen*, teen*, youth*, young people, boy, child*, college*, girl*, juvenile*, kid, kids, pube*, school*, student*, young male*, young female*, young person, young men, young people, youngster*, young women
	[CONTEXT – POST CONFLICT]	conflict* OR post-conflict OR peace OR post-war OR conflict affected OR conflict induced OR internally displaced OR displaced persons
INT	[SPORT FOR PEACE]	sport* OR football OR hockey OR tennis OR cricket OR athletics OR rugby OR tag rugby OR swimming OR volleyball OR netball OR basketball OR dodgeball OR boxing OR martial arts OR dance OR baseball OR softball OR rounders OR physical activity OR physical exercise OR recreation OR play OR run OR running
COMP	Any comparator	No search terms included
OUT	Any mental health outcome	No search terms included

Appendix 4: List of excluded studies

Author	Year	Title	Primary reason for exclusion
Adeniyi, A.F., Okafor, N. C. and Adeniyi, C.Y	2011	Depression and physical activity in a sample of Nigerian adolescents: Levels, relationships and predictors	No intervention
Ager, A., Akesson, B., Stark, L., Flouri, E., Okot, B., McCollister, F. and Boothby, N.	2011	The impact of the school-based Psychosocial Structured Activities (PSSA) program on conflict-affected children in Northern Uganda	Population too young
Betancourt, T. S., Meyers-Okhi, S. E., Charrow, A.P., and Tol, W. A.	2013	Interventions for children affected by war: An ecological perspective on psychosocial support and mental health care	Review paper
Betancourt, T. S., Newnham, E. A., Brennan, R. T. Verdeli, H., Borisova, I. Neugebauer, R., Bass, J., Bolton, P.	2012	Moderators of treatment effectiveness for war-affected youth with depression in northern Uganda	Duplicate study
de Jong, K., Prosser, S., Ford, N.	2005	Addressing psychosocial needs in the aftermath of the tsunami	No sport or PA reported
Dyck, C. B.	2011	Football and post-war reintegration: exploring the role of sport in DDR processes in Sierra Leone	No MH reported
Gupta, L., Zimmer, C.	2008	Psychosocial interventions for war-affected children in Sierra Leone	No sport reported
Harris, D.A	2007	Pathways to embodied empathy and reconciliation after atrocity: Former boy soldiers in a dance/movement therapy group in Sierra Leone	Duplicate study
Henley, R.	2005	Helping children overcome disaster trauma through post-emergency psychosocial sports programs: a working paper.	No outcomes reported.
Henley, R., Schweizer, I., de Gara, F., Vetter, S.	2007	How Psychosocial Sport and Play Programs Help Youth Manage Adversity: A Review.	No MH reported
Jordans, M. J. D., Tol, W. A., Komproe, I. H., De Jong J.V.T.M	2009	Systematic Review of the evidence and treatment approaches: psychosocial and mental health care for children in war.	Review paper
Kalksma-Van Lith, B	2007	Psychosocial interventions for children in war-affected areas: the state of the art.	Review paper
Kartakoullis, N. L., Karlis, G., Loizou, C., Lyras, A.	2009	Utilizing sport to build trust-The case of Cyprus.	No MH outcome reported
Kay, T., Dudfield, O.	2013	The Commonwealth guide to advancing development through sport.	No MH outcomes reported
Kunz, V.	2009	Sport as a post-disaster psychosocial intervention in Bam, Iran	Population too young

Appendix 4: List of excluded studies *continued*

Lawrence, S., De Silva, M., Henley, R.	2010	Sports and games for post-traumatic stress disorder (PTSD)	Not post-conflict context
Levy, F. J., Ranjbar, A., Dean, C. H.	2006	Dance Movement as a Way to Help Children Affected by War	Review, No MH outcomes reported
Ley, C., Rato-Barrio, M	2010	Movement, games and sport in psychosocial intervention: a critical discussion of its potential and limitations within cooperation for development	No MH outcomes reported
Loughry, M., Ager, A., Flouri, E., Khamis, V., Afana, A. H., Qouta, S.	2006	The impact of structured activities among Palestinian children in a time of conflict	Population too young
Lubans, D. R., Plotnikoff, R. C., Lubans, N. J.	2012	Review: A systematic review of the impact of physical activity programs on social and emotional well-being in at-risk youth	Not post-conflict context
Lyras, A	2007	Characteristics and psycho-social impacts of an inter-ethnic educational sport initiative on Greek and Turkish Cypriot youth	No MH outcomes reported
Biermann, M	2011	Claims and effects of sport-in-development project - A state of the art analysis	Review paper
Massao, B. P., Straume, S.	2011	Urban Youth and Sport for Development	No MH reported
Patel, V., Araya, R., Chatterjee, S., Chisholm, D., Cohen, A., De Silva, M., Hosman, C. McGuire, H., Rojas, G., van Ommeren, M.	2007	Treatment and prevention of mental disorders in low-income and middle-income countries	No sport or physical activity mentioned
Pink, M., Butcher, J. and Peters, C	2011	Psychological perspectives on development in and through community sport: The future in youth Soccer project, Bacau, East Timor	Supplement piece, no data reported
Purgato, M., Gross, Alden L., Jordans, M. J. D. De Jong, J., Barbui, C., Tol, W. A.	2014	Psychosocial interventions for children exposed to traumatic events in low- and middle-income countries: study protocol of an individual patient data meta-analysis	Proposed project, no outcome data reported
Richards, J.	2011	Evaluating the impact of a sport-for-development intervention on the physical and mental health of young adolescents in Gulu, Uganda-a post-conflict setting within a low-income country	Duplicate study
Sport for Development and Peace International Working Group	2008	Harnessing the Power of Sport for Development and Peace: Recommendations to Governments	No MH outcomes reported
Steyn, B.J.M., Roux, S	2009	Aggression and psychosocial well-being of adolescent taekwondo participants in comparison with hockey participants and a non-sport group	Cross sectional study

Appendix 4: List of excluded studies *continued*

Sugden, J	2010	Critical left-realism and sport interventions in divided societies	No MH outcomes reported
Van Hout, R.C.H., Young, M.E.M., Basset, S.H., Hooft, T	2013	Participation in sport and the perceptions of quality of life of high school learners in the Theewaterskloof Municipality, South Africa	Population too old
Zakus, D., Njelesani, D., Darnell, S	2007	The Use of Sport and Physical Activity to Achieve Health Objectives	No MH outcomes reported / Review paper