

## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Adolescents' physical activity trends over the years. A three-cohort study based on the Health Behaviour in School-aged Children (HBSC) Portuguese survey
<b>AUTHORS</b>	Marques, Adilson; Gaspar de Matos, Margarida

### VERSION 1 - REVIEW

<b>REVIEWER</b>	Hugo Sarmento Polytechnic Institute of Viseu, Centre for the Study of Education, Technologies and Health (Portugal)
<b>REVIEW RETURNED</b>	18-Jul-2014

<b>GENERAL COMMENTS</b>	<p>The manuscript represents an attempt to investigate the prevalence of PA among Portuguese adolescents and understand how it has changed between 2002 and 2010, using three-cohort of representative samples of Portuguese adolescents. This article revealed that the prevalence of Physical activity has decreased over the years for the same age groups. As strong points, I highlight the fact of being the first study among Portuguese adolescents to explore the PA practices of different cohorts, collecting data from a representative sample through the same standard protocol, in a longitudinal perspective. This manuscript has a potential to make a positive contribution to this field of research. However, the clarity and flow in some parts (see specific comments below with concrete suggestions) still need improvement. Hence, I've recommended minor revision to improve further text clarity before I can consider recommending it for publishing.</p> <p>Specific Comments</p> <p>Pag 2, Line 14 – “Participants were 8483 adolescents (4067 boys, 4416 girls)...”. In the method section (pag. 5, Line 5), you refer that there are 8485 participants. Clarify this mistake.</p> <p>Pag 5, Line 7 – Consider to clarify specific details from this questionnaire (Who was that developed and validated the questionnaire).</p> <p>Pág. 9, line 2 – Consider writing “3.9+1.9”instead of “3.9+.1.9”</p>
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	<p>Pág. 6, Table 1 – The result of n_total_boys+n_total_girls is 8483 and not 8485 as you refer in page 4, line 16.</p> <p>Pág. 6, Table 1,– The result of n_2002_girls+n_2006_girls+n_2010_girls is 4419 and not 4416 as you refer in line.</p> <p>Pág. 6, Table 1 – The result of n_total_11-13+n_total_15-17 is 8486. This is different from the sum of n_total_boys+n_total_girls? Clarify this mistake.</p>
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<b>REVIEWER</b>	Maria Paula Santos CIAFEL, Faculty of Sport, University of Porto
<b>REVIEW RETURNED</b>	25-Jul-2014

<b>GENERAL COMMENTS</b>	<p>Adolescents' physical activity trends over the years. A three-cohort study based on the Health Behaviour in School-aged Children (HBSC) Portuguese survey.</p> <p>This is an interesting paper aiming to describe PA prevalence among Portuguese adolescents and explore sports participation changes between 2002 and 2010. Using data from a very well known international study, the manuscript could inform better intervention for PA promotion from a public health perspective. Nonetheless, some points need to be considered to improve quality of the manuscript.</p> <ol style="list-style-type: none"> <li>1. Authors should make a better case for their aims, there seems to be some interchangeable use of the expression PA and sports participation. It was not possible, due to study design, to clearly understand how PA changed. The study aims should be more specific: prevalence of overall PA and sport participation.</li> <li>2. In general, the manuscript will benefit if those two concepts are better discussed. Reasons for decline in habitual PA may be not the same for sports participation, and those are not explored enough.</li> <li>3. Results: tables are fine, but text needs to be clearly. Please use parallel construction.</li> </ol> <p>Please, revise manuscript to improve style and rhythm.</p>
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### VERSION 1 – AUTHOR RESPONSE

Reviewer 1

Comment 1: Pag 2, Line 14 – “Participants were 8483 adolescents (4067 boys, 4416 girls)...”. In the method section (pag. 5, Line 5), you refer that there are 8485 participants. Clarify this mistake.

Response: Thank you for the observation. It was a mistake that was corrected. The sample was 8483 adolescents (4067 boys, 4416 girls).

Comment 2: Consider to clarify specific details from this questionnaire (Who was that developed and validated the questionnaire).

Response: In the methods section it was added a sentence that mentioned two references with specific details from the questionnaire.

Comment 3: Pág. 9, line 2 – Consider writing “3.9±1.9”instead of “3.9+.1.9”

Response: The text was changed (“to 3.9±.1.9 between 2002”)

Comment 4: Pág. 6, Table 1 – The result of n\_total\_boys+n\_total\_girls is 8483 and not 8485 as you

refer in page 4, line 16.

Response: Thank you for the comment. We have already changed the total number of participants (n=8483).

Comment 5: Pág. 6, Table 1, – The result of n\_2002\_girls+n\_2006\_girls+n\_2010\_girls is 4419 and not 4416 as you refer in line.

Response: The total number was corrected. There a mistake in the number of girls participants in 2010. The number was corrected (girls in 2010 were 1561)

Comment 6: Pág. 6, Table 1 – The result of n\_total\_11-13+n\_total\_15-17 is 8486. This is different from the sum of n\_total\_boys+n\_total\_girls? Clarify this mistake.

Response: The mistake was clarified in the table. We checked and corrected all the number reported in table 1.

#### Reviewer 2

Comment 1. Authors should make a better case for their aims, there seems to be some interchangeable use of the expression PA and sports participation. It was not possible, due to study design, to clearly understand how PA changed. The study aims should be more specific: prevalence of overall PA and sport participation.

Response: The introduction was revised and the study aim was clarified. The focus of the study was on adolescents' PA and sport participation at the same time.

Comment 2. In general, the manuscript will benefit if those two concepts are better discussed. Reasons for decline in habitual PA may be not the same for sports participation, and those are not explored enough.

Response: Thank you for the comment. The two concepts were clarified. In fact the discussion was not explored enough because our data did not allow us to do it. However, we presented there some possible explanations.

Comment 3. Results: tables are fine, but text needs to be clearly. Please use parallel construction. Please, revise manuscript to improve style and rhythm.

Response: In results section we tried to use parallel construction. First it was reported the prevalence of PA and sports participation for the boys and then for the girls. We are willing to revise the manuscript if it is not clear for the readers.

#### VERSION 2 – REVIEW

<b>REVIEWER</b>	Maria Paula Santos Research Centre in Physical Activity, Health and Leisure - University of Porto, Portugal
<b>REVIEW RETURNED</b>	20-Aug-2014

<b>GENERAL COMMENTS</b>	Authors addressed all comments. The manuscript is acceptable for publication and is likely to be of great interest among readers of this Journal.
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