

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Cross-sectional associations between physical activity pattern, sports participation, screen time and mental health in Swedish adolescents
AUTHORS	Kjellenberg, Karin; Ekblom, Orjan; Ahlen, Johan; Helgadóttir, Björg; Nyberg, Gisela

VERSION 1 – REVIEW

REVIEWER	Elizabeth Holliday The University of Newcastle, Australia, Rm4107, Lvl4W
REVIEW RETURNED	22-Mar-2022

GENERAL COMMENTS	It is a rare pleasure to be able to recommend a manuscript for outright acceptance. I found this to be an excellent, clearly articulated and well-performed study, with clear conclusions and implications.
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REVIEWER	Krishna Prasad National Institute of Mental Health and Neuro Sciences, Psychiatry
REVIEW RETURNED	29-Apr-2022

GENERAL COMMENTS	<p>Thank you for the opportunity to review the manuscript. The study has investigated the association between physical activity, sports participation, screen time, and mental health in Swedish adolescents from 34 schools. The results of the study are interesting in the context of the increasing evidence elucidating the effects of screen time and physical activity on health in general, and mental health in particular. It provides gender-based differences that are interesting. In general, the manuscript is well-written and the methods are robust for the cross-sectional nature of the study. I have the following comments and suggestions that the authors may consider in the revision -</p> <ol style="list-style-type: none">1. The authors have chosen not to measure depression or self-esteem and have solely focused on anxiety, is there a justification?2. Whereas the authors chose an objective measure of physical activity and have reported this as an improvement over previous studies, they have not explained the choice of self-report for screen time. The context of screen time may be additionally important.3. In the context of schools, academic attainment and cognition may be important measures whereas lack of measurement of functioning (in general) alone is mentioned as a limitation. Are all the schools public-funded or private schools, are there differences amongst them? Are there residential schools included? Are these schools inclusive? Any adolescents with disabilities?4. MVPA should be expanded (abbreviation in brackets) on first use in the abstract.
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	<p>5. The following sentences need to be corrected for grammar:</p> <p>a. Strengths and limitations: Due to the cross-sectional design causation or the direction of these associations cannot be studies (studied; appropriate use of punctuation)</p> <p>b. A significant inverse association between time spent in MVPA during leisure time on weekdays and anxiety was seen in girls and boys there was a significant interaction of gender in this association (p 0.01), such that the association was stronger in girls compared to boys.</p> <p>6. What are the implications of the study? Does it convey anything for adolescents in other countries?</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Prof. Elizabeth Holliday, The University of Newcastle, Australia Comments to the Author:
 It is a rare pleasure to be able to recommend a manuscript for outright acceptance. I found this to be an excellent, clearly articulated, and well-performed study, with clear conclusions and implications. Thank you for taking your time to review our manuscript, we appreciate your positive comments!

Reviewer: 2

Dr. Krishna Prasad, National Institute of Mental Health and Neuro Sciences Comments to the Author:
 Thank you for the opportunity to review the manuscript. The study has investigated the association between physical activity, sports participation, screen time, and mental health in Swedish adolescents from 34 schools. The results of the study are interesting in the context of the increasing evidence elucidating the effects of screen time and physical activity on health in general, and mental health in particular. It provides gender-based differences that are interesting. In general, the manuscript is well-written and the methods are robust for the cross-sectional nature of the study. I have the following comments and suggestions that the authors may consider in the revision
 Thank you for your positive and valuable comments that we believe have improved the manuscript. We have responded to the comments below, the changes made in the manuscript are made using track changes and are highlighted.

1. The authors have chosen not to measure depression or self-esteem and have solely focused on anxiety, is there a justification?

Thank you for this comment, we have added the justification for choosing anxiety in the introduction section, see lines 144-147.

2. Whereas the authors chose an objective measure of physical activity and have reported this as an improvement over previous studies, they have not explained the choice of self-report for screen time. The context of screen time may be additionally important.

Thank you for your comments on this matter, we have expanded on this in the discussion, see lines 422-430.

3. In the context of schools, academic attainment and cognition may be important measures whereas lack of measurement of functioning (in general) alone is mentioned as a limitation. Are all the schools public-funded or private schools, are there differences amongst them? Are there residential schools included? Are these schools inclusive? Any adolescents with disabilities?

Thank you for this valuable comment, we have added the lack of measures of academic attainment and cognition as a limitation, see lines 448-450. Regarding the schools, we have added information about the Swedish school system and how many schools in the sample were independent and public (see lines 158-162 and 236-237). There was no significant difference in mean values of SCAS-S or Kidscreen-10 between students attending independent or public schools, and no interaction of school type in the models.

Thank you for your comment about disabilities, all students were invited to participate in the study. During recruitment, we informed the schools that adaptations in the measurements were available for students with disabilities. In total 86 students (6%) reported having a teaching assistant, which is common for students with neurodevelopmental impairments. However, we had no good measure of physical disabilities, and it is likely that we did not have a good representation of this group. This was included as a limitation in line 458-460 with regards to the generalization of the study.

4. MVPA should be expanded (abbreviation in brackets) on first use in the abstract.

Thank you for pointing this out, this has now been corrected, see line 68.

5. The following sentences need to be corrected for grammar:

a. Strengths and limitations: Due to the cross-sectional design causation or the direction of these associations cannot be studied (studied; appropriate use of punctuation)

b. A significant inverse association between time spent in MVPA during leisure time on weekdays and anxiety was seen in girls and boys there was a significant interaction of gender in this association (p 0.01), such that the association was stronger in girls compared to boys.

These grammatical issues have now been corrected (see lines 113-116 and 296), thank you for noticing and commenting on these issues.

6. What are the implications of the study? Does it convey anything for adolescents in other countries?

Thank you for this valuable comment, we have included more information about the implications and generalizability of the study in the discussion. Please refer to lines 362, 454-460, and 468-472.

VERSION 2 – REVIEW

REVIEWER	Krishna Prasad National Institute of Mental Health and Neuro Sciences, Psychiatry
REVIEW RETURNED	02-Jul-2022
GENERAL COMMENTS	All the comments of the reviewer have been addressed satisfactorily.