

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Scaling up a school-based intervention to increase physical activity and reduce sedentary behaviour in children: protocol for the TransformUs hybrid effectiveness-implementation trial
AUTHORS	Koorts, Harriet; Timperio, Anna; Lonsdale, Chris; Ridgers, Nicola D.; Lubans, David; Della Gatta, Jacqui; Bauman, Adrian; Telford, Amanda; Barnett, Lisa; Lamb, Karen; Lander, Natalie; Lai, Samuel K.; Sanders, Taren; Arundell, Lauren; Brown, Helen; Wilhite, Katrina; Salmon, Jo

VERSION 1 – REVIEW

REVIEWER	Dobell, Alexandra University of Birmingham, Applied Health Research
REVIEW RETURNED	27-Aug-2023

GENERAL COMMENTS	<p>I would like to thank the authors and editor for the invitation to review an exciting and thoroughly needed trial protocol. At this stage I do not have any comments to improve this work, but provide some thoughts below.</p> <p>Introduction: A clearly written introduction, introducing the intervention and previous RCT supporting the expansion of the intervention at scale.</p> <p>Methods: Each section is written with sufficient information and citation while being concise. The complexity of this project cannot be understated but the authors have ensured that the protocol is well understood by its readers.</p> <p>Within the implementation and scale up strategies table (supplementary file 2) there is a high level of detail which constantly refers to the SEM levels required for success. This helps to continue to guide the reader.</p> <p>Both the effectiveness trial and implementation trial have been given extended and in depth thought and detail with clear planning that relates to real world implementation of intervention programs, at a level that is rarely seen with physical activity intervention globally. The authors have also addressed the effects of COVID-19 on this trial.</p>
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REVIEWER	Daly-Smith, Andy University of Bradford, Faculty of Health Studies
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	I have previously published with the senior author of the article. I do not foresee that this has impacted by ability to deliver a fair and transparent review of the article.
REVIEW RETURNED	11-Sep-2023

GENERAL COMMENTS	<p>I would like to applaud the project and author team for developing a substantial intervention and evaluation of the scale up and wider role out of the TransformUS programme. The work undertaken to disseminate the programme more widely across Victoria is comprehensive and well detailed throughout the manuscript. I have very few recommendations for alterations below. Please do not take this as a sign of skim reading the paper, far from it. I have read through the manuscript with a fine tooth comb and it is so well written that I have very few recommendations. In itself the paper provides a very strong contribution to the field as one of the first projects to demonstrate how to undertake a type II implementation-effectiveness trial in schools. The learning within the paper will support future whole-schools programmes in undertaking similar work.</p> <p>I have some small suggestions which are only recommendations, not requirements prior to publication. I am happy to leave the decision with the author team as to whether to include these or not.</p> <p>Review the use of acronyms within the paper. For example, DoE and PD are not common. I would suggest writing these in full to improve readability, especially for international audiences. Lines 105-108. Sentence commencing with “Comprehensive school PA programs”. I would suggest linking this to the WHO Gappa report. Line 123-131. The review of results from the initial TransformUS RCT. I feel these could be presented in a clearer fashion as I had to read the section a number of times to understand where effects were and were not found. Perhaps shed some light also on why the PA-based interventions didn’t increase PA at 18 months but the sedentary interventions did. A slightly clear review of how the SD interventions tracked reductions in SD behaviour to 30 months but the improvements in PA did not track. Lines 367 to 370. Section on Implementation trial: Partners (state level). In other sections you state the expected number of participants. It would be useful to add this detail to this section as well. Also add in the number of partner organisations if you have this information. Line 413. Section on Effectiveness trial: Children and parents. You have used grades 3 and 4 for the evaluation component. Please can you add the justification as to why you have used these age groups. It may be a pragmatic one, which is fine, it would just be useful for the reader to understand why you have used these year groups. Lines 449 to 453. You make a valid point about trial effects diminishing at scale. Perhaps citing the following paper might reinforce the point: Nettlefold (2021) Scaling up Action Schools! BC: How Does Voltage Drop at Scale Affect Student Level Outcomes? A Cluster Randomized Controlled Trial. IJERPH. Table 1- you may wish to add some timings (specifically against the effectiveness) and individual level maintenance measures) to provide clarity for the reader. I did consider suggesting to add these to other components but think the table would become too busy.</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1 Dr. Alexandra Dobell, University of Birmingham

No requested changes

We appreciate the positive comments from the Reviewer and the time they have taken to review our paper.

Reviewer: 2 Dr. Andy Daly-Smith, University of Bradford, Bradford Institute for Health Research, Bradford Royal Infirmary

I would like to applaud the project and author team for developing a substantial intervention and evaluation of the scale up and wider role out of the TransformUs program. The work undertaken to disseminate the program more widely across Victoria is comprehensive and well detailed throughout the manuscript. I have very few recommendations for alterations below. Please do not take this as a sign of skim reading the paper, far from it. I have read through the manuscript with a fine tooth comb and it is so well written that I have very few recommendations. In itself the paper provides a very strong contribution to the field as one of the first projects to demonstrate how to undertake a type II implementation-effectiveness trial in schools. The learning within the paper will support future whole-schools programs in undertaking similar work.

We appreciate the positive feedback from the Reviewer and the time they have taken to review our work.

7. Review the use of acronyms within the paper. For example, DoE and PD are not common. I would suggest writing these in full to improve readability, especially for international audiences.

We have replaced all incidences of 'PD' (n=13) with professional development and 'DoE' (n=24) with Department of Education, throughout the manuscript.

8. Lines 105-108. Sentence commencing with "Comprehensive school PA programs". I would suggest linking this to the WHO Gappa report.

We have included the following on Line 110: "Whole-of-school approaches are also recommended within the World Health Organization Global Action Plan for Physical Activity, as a way to promote enjoyment and participation in physical activity among youth."

9. Line 123-131. The review of results from the initial TransformUS RCT. I feel these could be presented in a clearer fashion as I had to read the section a number of times to understand where effects were and were not found. Perhaps shed some light also on why the PA-based interventions didn't increase PA at 18 months but the sedentary interventions did. A slightly clear review of how the SD interventions tracked reductions in SD behaviour to 30 months but the improvements in PA did not track.

We thank the reviewer for highlighting this and agree that the differences in these results are important. However, as the purpose of this manuscript is to describe the protocol for the scale up of TransformUs at a state level, and the outcomes for the RCT have been published elsewhere (please see Salmon et al. 2023 Transform-Us! cluster RCT: 18-month and 30-month effects on children's physical activity, sedentary time and cardiometabolic risk markers, BJSM), we have tried to make this clearer by adding the following text to Line 131: "The results of the RCT are described and interpreted in detail elsewhere.²⁶ However, in brief, at 18-months (n=348), compared to..."

And to Lines 134-138: “Compared to usual practice, children who received the sedentary behaviour intervention (SB-I and PA+SB I) spent more time in daily physical activity (5.5 mins/day) at 18-months, and at 30-months spent 33 mins less in daily sedentary time, and specifically, 63 mins less in sedentary time on weekdays, with no differences in physical activity at 30-months.²⁶”

10. Lines 367 to 370. Section on Implementation trial: Partners (state level). In other sections you state the expected number of participants. It would be useful to add this detail to this section as well. Also add in the number of partner organisations if you have this information.

We have added the following to Lines 379 - 386: “One representative from each of our partner organisations (six organisations were formal partners prior to the project being funded) who has experience in disseminating and/or supporting the TransformUs roll-out will be invited to participate in interviews to capture system-level impact (e.g., organisational-level maintenance, which relates to Aim 5 of the study). We expect to recruit one representative from each of our partner organisations. As depth of qualitative data is more important than sample size,⁵⁸ we aim to recruit a purposeful sample of representatives from our partner organisations. Recruited participants will be asked to provide signed consent prior to taking part.”

11. Line 413. Section on Effectiveness trial: Children and parents. You have used grades 3 and 4 for the evaluation component. Please can you add the justification as to why you have used these age groups. It may be a pragmatic one, which is fine, it would just be useful for the reader to understand why you have used these year groups.

Only children in Grades 3 and 4 were included in the effectiveness trial, firstly, to allow for the 24-month follow up, and secondly, as this is consistent with the original TransformUs RCT that only included this age group. This would enable a comparison of findings regarding program impact across trials.

For clarity, we have amended the sentence on Line 432 as follows: “...to enable a planned follow up at 12-months and 24-months, and is consistent with the target age group evaluated in the original TransformUs RCT.³²”

12. Lines 449 to 453. You make a valid point about trial effects diminishing at scale. Perhaps citing the following paper might reinforce the point: Nettlefold (2021) Scaling up Action Schools! BC: How Does Voltage Drop at Scale Affect Student Level Outcomes? A Cluster Randomized Controlled Trial. IJERPH.

We thank the reviewer for this suggestion. We have added the Nettlefold reference to Line 470 after the sentence: “...two-thirds of that observed in the efficacy trial as effects may diminish at scale)”

13. Table 1- you may wish to add some timings (specifically against the effectiveness) and individual level maintenance measures) to provide clarity for the reader. I did consider suggesting to add these to other components but think the table would become too busy.

We have now added the following to the Table 1 footnote on Line 683: “*Asterisk indicates Effectiveness trial only and data are collected at baseline, 12-months and 24-months follow up”