Author’s response to reviews

Title: The ReSiT Study (Reducing Sitting Time): Rationale and protocol for an exploratory pilot study of an intervention to reduce sitting time among office workers

Authors:

Benjamin Gardner (benjamin.gardner@kcl.ac.uk)
Stephen Dewitt (stephen.dewitt@kcl.ac.uk)
Lee Smith (lee.smith@anglia.ac.uk)
John Buckley (j.buckley@chester.ac.uk)
Stuart Biddle (Stuart.Biddle@usq.edu.au)
Louise Mansfield (louise.mansfield@brunel.ac.uk)

Version: 2 Date: 22 Sep 2017

Author’s response to reviews:

We thank the Editor and Reviewer 1 for their positive comments and helpful suggestions on our manuscript. We have addressed these comments as follows:

Associate Editor:

COMMENT 1: Please provide more details regarding the sampling of participants. It was mentioned that demographic information would be used to inform the sample selection process, would you please elaborate on this procedure.

OUR RESPONSE TO COMMENT 1:

This comment made us realise that we previously omitted important information about our screening procedure; we will only screen participants if there is more potential interest in the study than there are spaces available. We have added a paragraph clarifying what the proposed screening process would involve, if we had sufficient interest in the study. (The study is ongoing, and we have not yet invoked the screening procedure.)
The demographic questionnaire will allow us to not only record the demographic profile of our sample, but also, *if more than 30 eligible potential participants express interest,* to screen and select participants to ensure a diversity of age and occupational seniority.

Due to limited staffing resources, recruitment will be staggered such that no more than one participant enters the study on any one day. Participant screening would thus be responsive; the research team would compare the demographics of those expressing interest against those of participants already enrolled into the study. Otherwise eligible participants from demographic categories judged by the research team to be potentially over-represented in the sample – for example, early-career post-doctoral academic research workers – will be placed on a reserve list, and only consented if fewer than 30 participants can be identified.” (Lines 286-292)

COMMENT 2: Some additional descriptions in the statistical methods section would be helpful regarding what results will be presented from the mixed model, and how the outcome data will be summarised/ aggregated? Will means and confidence intervals at each time point? Will you be investigating factors associated with change for baseline? How will missing data be treated?

OUR RESPONSE TO COMMENT 2:

We have expanded our description of the treatment of the quantitative data in the Analysis Section. This now sets out which outcomes we will focus on, how these will be derived from the data, how missing data will be handled, and at which levels data will be summarised. We also clarify that we will present group-level means and confidence intervals, and changes between these, from the mixed model.

“Analysis. Quantitative data (accelerometry) will be extracted using specialist software designed for use with the activPAL (activPALTM Professional v7.2.32; PAL Technologies Ltd, Glasgow, UK). Daily data will be entered into analysis only where devices have been worn for 24 hours (00:00 to 23:59). All data will be visually inspected, to identify any unusual episodes (e.g. few steps recorded, indicating the device may have malfunctioned or not have been worn), and days containing such episodes will be excluded from analyses.

“Time-stamped data will be summarised in 15 second intervals and analysed in hourly intervals. Accelerometry outcomes of interest, which include daily times spent sitting, standing and stepping, frequency of sit-stand transitions, and step counts, will be calculated for participants
with available data on at least three weekdays and at least one weekend day. ActivPAL data distributions from a previous large observational study suggest office workers are most likely to be awake between 0700 and 2300 [12]. Daily sitting will thus be categorised as sedentary time accumulated between 0700 and 2300. Data from each 7-day observation period will be summarised for each participant, and aggregated across all participants, using descriptive statistics (means, confidence intervals). Changes in group-level aggregated accelerometry outcomes over time will be assessed using mixed effects ANOVA, to allow for multiple measures from each participant at each of four timepoints.” (lines 418-432)

We will not investigate factors associated with change. This analysis is not intended to be a definitive assessment of the intervention, but rather a means of exploring patterns of sedentary behaviour before and after the intervention is administered. Thus, the statistical analysis is of secondary importance for our present purposes than is the acceptability analysis. We do not have the statistical power to focus too heavily on these data, nor was it our intention to do so when we designed the study. Thus, we will not analyse patterns within these data beyond inspection and comparison of means over time. We have not stated this in the manuscript, because it would seem odd to include a statement of what we are *not* going to do with the data.

Reviewer #1:

COMMENT 1: It is acknowledged in the limitations that the intervention being tested is resource intensive and the findings will be used to inform a refinement of the intervention, e.g. using a computer-based intervention. This appears to be the main potential issue identified with this pilot study. While the menu of behaviour change techniques delivered as part of the intensive intervention component may be perceived by participants to be acceptable, it is possible that the delivery of these in a self-administered format will be perceived differently. Is there a plan to conduct a feasibility assessment of this modified intervention format in the next phase of the intervention development?

OUR RESPONSE TO COMMENT 1:

We have added a sentence to the Discussion to address this concern:
“As a precursor to further intervention development work, an additional limitation of the present study is that participants’ views will necessarily be based on experiences of one-to-one delivery of intervention components. While we will attempt to identify insights that would likely apply across delivery methods, we may need to conduct further work to determine whether amending the delivery format affects the acceptability of intervention components.” (Lines 501-506)

COMMENT 2: The interview schedule appears to focus on the acceptability of the behaviour change techniques. Please clarify whether the participants are also prompted to provide feedback about the acceptability of the sit-stand workstation.

OUR RESPONSE TO COMMENT 2:

We stated that the interviews will cover “the usefulness of the sitting-reduction techniques delivered to [participants]”, which we intended to incorporate views towards the sit-stand workstation (provision of which constitutes a sitting-reduction technique). We have now clarified this sentence:

“The three semi-structured interviews will cover … the usefulness of the sitting-reduction techniques delivered to them *including views towards the SSW*; [and] their *use of the SSW and* adherence to the techniques…” (line 392)

COMMENT 3: Introduction, paragraph beginning line 95 (also relevant - line #114): the authors may wish to consider citing the Stand Up Victoria study, which is another example of a study involving environmental and individual-focused components aimed at reducing workplace sitting. Two papers that may be of relevance for this paragraph:


OUR RESPONSE TO COMMENT 3:

We have added the Healy and Hadgraft papers in to this paragraph, as they support the point about the effectiveness of the Stand Up Victoria study (previously supported only by reference #30).

We refer to the final sentence of this paragraph to the Stand Up Australia study (i.e. Neuhaus et al’s 2014 intervention development paper), but we mistakenly cited Neuhaus et al’s 2014 systematic review rather than Neuhaus et al’s development paper. (See next comment.) This has been rectified.

COMMENT 4: References: There appear to be a couple of issues with referencing which the authors should review. For example, reference #31 has been cited on a few occasions in the text, but this doesn’t appear to be the correct reference (see line 105). In addition, within the group of references on line 169, refs 25 and 26 refer to websites selling sit-stand workstations. These references do not appear to fit for that statement.

OUR RESPONSE TO COMMENT 4:

Thank you for pointing out these errors. We intended to cite (previously reference #31; now reference #33) Neuhaus et al’s 2014 report of the development of the Stand Up Australia study, not Neuhaus’s 2014 systematic review. This has been rectified.

We also mistakenly included the two workstation websites in the group of references previously on line 169 (now line 168). We have removed these two references from this sentence (but not the paper, as they are cited earlier in the manuscript). All other references in this sentence are appropriate.

COMMENT 5: Line 374: "Participants will select..." - It was not immediately clear what was meant here. Could the authors please provide further detail to clarify.
OUR RESPONSE TO COMMENT 5:

This sentence, which refers to follow-up motivational booster emails, previously read ‘Participants will select the content and frequency of this information’. We have now clarified this:

“Participants will be asked, in Session 2, whether there are specific points that they wish to have reiterated in these emails, and how frequently they wish to receive them.” (Lines 381-382)

COMMENT 6: A couple of minor typos were identified. Line 226 - this should be "prolonged", line 237 - delete "to", or rephrase sentence. Line 448, delete "been".

OUR RESPONSE TO COMMENT 6:

All of these typos have now been rectified.