Reviewer's report

Title: A novel behavioural INTErvention to REduce Sitting Time in older adults undergoing orthopaedic surgery (INTEREST): protocol for a randomised controlled feasibility study

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Reviewer: Lois Finch

Reviewer's report:


TITLE: Intervention to reduce sitting time in older adults undergoing orthopaedic surgery (INTEREST): study protocol for a feasibility study.

The manuscript describes the protocol for a feasibility study to reduce the sedentary life of pre-surgical persons awaiting hip or knee arthroplasty. The intervention of behavioural modification techniques based on self-determination theory is compared to usual care. The expected outcomes are protocol process outcomes and an exploration of more person orientated outcomes. Subjects are randomized in a 2:1 ratio, intervention to usual care. The results will inform a full RCT.

General comments: The manuscript is well written and easy to read. The proposed study is an important one. The manuscript is lacking in certain areas. Although the intervention is well described, there is little information on the usual care group ingredients, little psychometric data on the proposed exploratory outcomes and no mention of explanatory data collection.

TITLE: The title is appropriate but could be more informative. A Behavioural Intervention versus usual care to reduce sitting time in adults older than 65 undergoing elective hip or knee arthroplasty (INTEREST): study protocol for a feasibility study. I realize that the title is mean to reflect the acronym but it could still be used. RCT is also not mentioned

Key words: these are interesting. Sitting and Sedentary behavior and sedentariness might be considered synonyms and the major intervention is not listed. Is behavior modification not a key word in the approved list, it should be. Some of the other key words could be redundant.

Background:The background is well written. A number of good references are cited to support the need for the study and for the behavioral change intervention. Literature on prehabilitation has not been covered. A mention or two of the impact of prehabilitation in other surgical samples would be helpful (Int J Surg 2017, 39:156-162, Surgery 2016, 160:189-1201) especially as this intervention is stated to be a prehabilitation one.

The question to be addressed is well formulated, but there is no mention of a control group or usual care. The aim is to examine the feasibility of reducing sedentary time with a novel approach compared to usual care. It maybe usual care is more acceptable, I doubt it but it should be mentioned.
Page 5 Line 106: the word elective could be added for precision before hip and knee.

Line 110 what are trial statistics? Are they different from ordinary statistical analyses? Do you mean intention to treat, on or off protocol analysis?

Line: 112 efficacy measures is a vague term, especially after you have listed all the primary outcomes. A list of a few of the most relevant ones would be helpful.

METHODS:

The methods are well described with a few exceptions. The inclusion of persons capable of consent is from the chart review, it might be more efficacious to actually test their competency; e.g. the Folstein mini-mental test.

Page 6 lines 134-136 need to be rewritten there are typos here.

Sample size: as it is a feasibility study retention rate seems appropriate to base the power calculation on.

Randomization: Why can the participants not be blinded? The researcher does not need to tell the participants which group they are in. You could add a small attention intervention of a telephone call, as in the intervention group, to ask a few simple not probative questions about their care to control for attention and outside influences. Such as when is your surgery, have you seen a doctor in the last week, have you seen a health care worker in the last week etc. Allocation can also be done electronically. There are a number of sites that will do this while you keep the records of the allocation confidential. It is a great weakness of the study not having a blinded data collector. The study is open to a great deal of bias.

Interventions: Behavioural group: Behavioural change is well described and seems comprehensive. This section contains elements that might be better in the background. Although the elements are in the booklets in the additional information files, a SHORT description might help the reader clarify the elements without reading the entire additional section. The main components in the intervention are very well described. The language level in some areas of the subject information and booklet needs to be checked for education level.

Page 9 line 183 RCT not BCT

Page9, LINES 203-211. The number of goals set out initially is a little confusing. Do the subjects list 6 to start and cover them one by one per week or do they make one goal and add to it once a week for 6 weeks?

Page9 Line218 where is the pedometer recorded in the booklet. It was not obvious to this reviewer. How long to they wear it, when the same can be said of the accelerometer how long for Control group: there is no information on what constitutes usual care. How is the attention given to the behaviour group controlled for in the usual care group?
For the interview and goal setting have the authors thought to use Goal Attainment Scaling (GAS) (Rockwood K. J. Clin. Epi 1993:46; 113-118). Seems similar to what you are doing. GAS has a numeric rating for achieving or not achieving goals.

Data Collection: Should be by a blind evaluator. The reviewer presumes that both groups data will be collected on relevant feasibility outcomes (lines 264, 266, 269, 270, 271, 272, 273, 277) to help with both sides of the study and contrasts.

Secondary outcomes: The feasibility and exploratory outcomes should be listed in the body of the manuscript with short statement of their psychometric properties and use in the orthopaedic sample studied. I.E. all measures are psychometrically sound and are used routinely in the assessment of subjects post arthroplasty (references).

Do the authors have some apriori idea of what would make a good functional outcome from all those they have suggested?

The feasibility questionnaire should be worded neutrally and not contain the word control or intervention and should contain questions about the invasiveness of the study i.e. blood collection and length of time the study took to complete. The method of blood collection and storage should be stated. The study lasts for at the longest 18 weeks. This time period may be insufficient to assess the quality of life of persons post-surgery.

There is no list of explanatory variables to be collected. It may be obvious but they still need to be stated e.g. age, sex, differential time taken for recovery in hip versus knee replacement, interventions outside the given intervention, readmission, infection, visit by home care or therapists etc.

Analysis: GAS will help with the goals. Have the authors thought of just counting the number of goals each person achieved out of the total number set per person, the percentage achieved? If 95% Confidence intervals are reported the reader can make their own between and within comparisons.

Committees: Safety: despite the low risk assessment of this study a fall during the study would be classed a major adverse event. A list of possible adverse events or the definition of low and high risk events would help along with the statement that only high risks would be reported to the subject's physician or surgeon.

REFERENCES: fine
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Please indicate how interesting you found the manuscript:

An article of importance in its field

**Quality of written English**
Please indicate the quality of language in the manuscript:

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No