Reviewer’s report

Title: Feasibility, safety, acceptability and functional outcomes of playing Nintendo Wii Fit PlusTM for frail elderly: Study protocol for a feasibility trial

Version: 0 Date: 18 May 2017

Reviewer: Sarah Dean

Reviewer's report:

Thank you for asking me to review this work which contains the investigation of an interesting intervention for the frail elderly - playing Nintendo Wii Fit Plus TM. The report is primarily focused on the protocol for the pilot study involving five participants (which is called Phase 1), yet it goes on to also include some information about the definitive randomised controlled trial (RCT)(which I am guessing is what they mean by Phase 2, but this is not clear) even though the sample size for this larger study has not been given. It is also possible that I am muddled in my understanding of their pilot trial. The authors state there are few studies evaluating the use of virtual reality in this population, citing three studies, but they do not really offer much by way of a synthesis of the evidence from these three studies and what the limitations or gaps in the evidence might be. It is this sort of information that would really help provide the platform for saying why your study is needed so I would urge you to provide this in your background section. Various details of the study protocol are given (participants, assessments, phase one details, phase 2 details etc) however in many places there is a lack of clarity for example: the patient population is a mix of pre-frail and frail (so how is this assessed? how many of each were in the pilot? will you stratify in the main trial to account for these clinical differences?); how will you assess for no neurological or orthopaedic diseases? (is it realistic to expect frail elderly to have no orthopaedic problems - I presume this is part of the feasibility work although as this only involved 5 participants it might be hard to obtain meaningful estimates of orthopaedic disease prevalence). Furthermore there seems to be (page 6 line 34 onwards) details about what I would call 'acceptability' (of the intervention) rather than feasibility, so this needs clarifying. Checking for the incidence of falls up to 30 days later seems a very short time for a follow-up as your sample may not fall very often anyway, so seeing a reduction in falls after only 30 days seems very optimistic. Finally the discussion section seems to repeat much of what has already been covered. Unfortunately there are numerous problems throughout the manuscript with regards to the clarity of the writing and the choice of key words and terminology, e.g. incorrect use of the term physiotherapy / physical therapy. The authors do provide a SPIRIT check list and it appears complete but cross checking some of the checklist items with the manuscript shows that a number of elements are missing from the manuscript e.g. governance arrangements, data management etc. I apologise for not having the time to give more thorough and comprehensive details of the problems with this manuscript; I would urge the authors to seek further support in translating their work into English as this could make a substantial difference and may help clarify some of the concerns I have raised. Please do keep your line of research going, it is based on a good idea and I am sure you will learn a lot about conducting clinical trials by running this feasibility study.

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