Reviewer’s report

Title: Protocol for a feasibility randomised controlled trial of the use of Physical ACTivity monitors in an Exercise Referral Setting: The PACERS study.

Version: 0 Date: 06 Sep 2017

Reviewer: Elizabeth Gibbons

Reviewer's report:

This pilot is an important study. This article describes a protocol for a pilot randomised controlled trial with mixed-methods process evaluation and economic analyses. The intervention, an activity monitoring device and associated web platform is in addition to standard care to promote and sustain physical activity in an exercise referral population. The health benefits of increased activity and exercise are evident as outlined in the paper

The proposed study aims to evaluate the acceptability and feasibility of the intervention and of the process evaluation methodology. The results will inform the design of a full scale trial.

The intervention is an additional component to standard care which is based on an existing effective programme of exercise referral. This is described and referred to in the background. The intervention aims to promote autonomous motivation and this process is described clearly and is innovative and takes advantage of current technologies. The paper acknowledges that engagement with technologies may not be acceptable to some populations.

The objectives are outlined and refer to some of the principles of process evaluation objectives. Ethical approval was obtained in 2015 but it is not clear why there is a delay in submission

Patient recruitment is from patients referred to the NERS pathway opportunistically. Clear processes are described regarding invitation and consenting procedures

The intervention is described in detail in the text and illustrated further in box 2. Time-points for data collection are outlined and are clear as well as describing the components of the intervention, mechanisms of action are outlined which provides a theoretical basis for the intervention. The logic model further illustrates components and intended outcomes of the intervention

The criteria have been agreed by the trial steering committee and adopts a traffic light system of assessment are outlined in detail in table 2 which is useful and provides clarity. The trial makes use of current data collected as part of standard care and refers to additional measures for the pilot trial all of which are validated measures with supporting references

I cannot comment of the methods and approaches of the economic analyses
Sample size is adequately described and justified

Qualitative interviews will be conducted with sub-sample of patients in the intervention group and telephone interviews with a sample of HCPs both exploring acceptability and feasibility. However, no details are provided about how these participants from both groups will be selected and recruited.

Table 3 is extremely useful and provides more detailed explanation of the process evaluation methods. Statistical methods and qualitative methods of analysis are described.

Other aspects of trial design are outlined with reference to limited risk of adverse events and trial management.

A well written paper describing in detail the proposed study

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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:

Acceptable

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