PROJECT TITLE: The development, implementation and testing of a feasible and scalable intervention to promote vigorous intermittent lifestyle physical activity in physically inactive middle-aged and older adults

FIELD OF RESEARCH CODE: 1117

PROJECT SYNOPSIS:

The aim of this PhD project will be to develop and test a feasible and scalable intervention designed to increase vigorous intermittent lifestyle physical activity (VILPA) in physically inactive adults aged 40-75.

The proposed project will form a distinct part of a larger program of work for which two of the supervisors (Profs Thøgersen-Ntoumani and Stamatakis) have received NHMRC Ideas grant funding. The proposed PhD project will add substantive value to the existing grant through the iterative development and preliminary testing of an intervention designed to increase vigorous intermittent lifestyle physical activity (VILPA) in adults aged 40-75 years old. The existing grant does NOT develop or test an intervention, but examines the best ways of measuring and
conceptualising this type of physical activity and explore messages that can be used to promote it to this age group (including the development of a mobile app).

Using a Behaviour Change Wheel approach to intervention development (Michie et al., 2014), a series of 3 studies will be conducted.

1) Systematic scoping review: to assess the psycho-social modifiable determinants of short bouts of vigorous intermittent lifestyle physical activity and similar activities in middle-aged and older adults. The goal will be to determine the core components in effective vigorous intensity lifestyle physical activity interventions and what should be considered for a future intervention. Arksey and O’Malley’s (2005) approach will be used to perform the scoping review. The analyses of the data will involve descriptive mapping, a quality assessment of the methodology employed (using the Evidence in Policy and Practice (EPPI) Centre’s Weight of Evidence framework; Gough, 2007), and a narrative synthesis approach.

2) Based on the results of study 1 and NHMRC ideas grant data, a formative co-design approach utilising the Behaviour Change Wheel and its APEASE criteria (Michie et al., 2014) will be adopted with key stakeholders (N =10-30). This will include actors across the social determinants that influence the implementation of this type of activity. A series of workshops presenting iterations of the intervention will occur to design the intervention. The result will be specification of the core and adaptive components of the intervention content and its delivery. The Standards for Reporting Qualitative Research (O’Brien et al., 2014) will be used.

3) Implementation and testing of a 12-week complex randomised controlled feasibility/pilot trial hybrid design, testing both the intervention and developed implementation strategies (e.g., the use of the mobile app developed as part of NHMRC Ideas Grant). Approximately 60 female and male (age and gender matched) physically inactive adults aged 40-75 will be randomised to the intervention or an active control (TBD) group. The Medical Research Council (UK) framework for the development of complex intervention (Craig et al., 2008) will be employed. Further, the pilot/feasibility extension to Consolidated Standards of Reporting Trials (Eldridge et al., 2016) will be adopted in the conduct and reporting of the trial. A mixed method concurrent research design, consisting of quantitative (use of activPAL activity monitors and surveys) and qualitative (interviews) methods, will be employed. The outcomes will include feasibility of the recruitment methods, recruitment rates, drop-out, acceptability of the intervention to participants, preliminary changes in VILPA, health and well-being outcomes, and the estimation of effect sizes which will inform the calculation of the sample size for a future definitive RCT. Most outcomes will be re-assessed at a 3-month follow-up. Factors impacting intervention uptake and implementation will be explored qualitatively at the end of the intervention via semi-structured interviews with a purposive selection of participants (N=20-30). The data will be analysed using a combination of descriptive statistics, mixed linear modelling (quantitative), and framework (qualitative) analysis.

*The recruited student will be a Domestic student new to Curtin, who will meet the RTP2021 Scholarship application criteria, and will start the PhD by 1 August 2020.

References


FEASIBILITY AND RESOURCING – DESCRIPTION OF THE SUPPORT THIS PROJECT WILL RECEIVE:

While the PhD will be distinct from the current NHMRC funded Ideas Grant, it will be an important component of a larger program of work that is supported by NHMRC funding. The student will benefit from the novel VILPA assessment method developed and tested as part of the NHMRC Ideas grant. Prof Thøgersen-Ntoumani already has access to 55 activPAL devices in her lab which will be sufficient for the project. A mobile application designed to promote VILPA developed and tested as part of the NHMRC grant can be used for free as part of the proposed intervention.

THE SIGNIFICANCE OF THE PROJECT/ PROGRAM FOR THE ENROLLING SCHOOL OR INSTITUTION:

The PhD will provide added value to the existing NHMRC Ideas grant, which can generate further Category 1 income. Specifically, the PhD results will provide important pilot work for a future NHMRC CTCS grant. Additionally, the project will help consolidate collaboration with world-class institutions and researchers. Demand-driven research funding opportunities will be explored with organisations with an interest in scaling up the project (e.g., HBF, Cancer Council WA, Heart Foundation). Finally, the results of the PhD have potential to make a meaningful difference to the health and well-being of many middle-aged and older adults when implemented at a wider scale.

Students must express interest in this scholarship opportunity by emailing the Project Lead listed below. Please provide a copy of your current curriculum vitae and detail your suitability to be involved in this strategic project.

PROJECT LEAD CONTACT:

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