**The short-term and long-term cost-effectiveness of an augmented exercise referral scheme: A within-trial analysis and beyond-trial modelling**

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Improving physical activity is a widely-stated policy aim from national to international level. It is therefore important to establish which approaches are effective and efficient at encouraging inactive individuals to become active. This would inform public health policy and practice. However, there is paucity of evidence on economic evaluation of physical activity interventions particularly in low and middle income countries. Building on the methods of a cost-effectiveness analysis of an augmented exercise referral scheme (ERS), the presentation provides recommendations for the health economics research agenda in Africa.

A short and long term cost-effectiveness analysis of an augmented exercise referral scheme alongside a trial was undertaken using health care provider, personal social services, and patient perspective. A multicentre parallel two group randomised controlled trial with 1:1 individual allocation to usual ERS alone (control) or augmented exercise referral scheme with web-based behavioural support based on the LifeGuide platform. Participants were inactive people with obesity, diabetes, hypertension, osteoarthritis or history of depression, referred to an ERS from primary care in UK.

The analyses were two-fold – short term (within-trial) cost-effectiveness analysis (from baseline to 12 months post randomisation) and long term cost-effectiveness analysis (beyond-trial modelling of long term expectations for cost-effectiveness), for augmented exercise referral scheme using web-based behavioural support against standard exercise referral scheme. Deterministic and probabilistic sensitivity analyses evaluate uncertainty.

The main outcome of the economic analysis is an incremental cost per Quality-Adjusted Life-Year (QALY - based on EQ5D5L). The short term cost-effectiveness analysis uses resource use data for development of training for LifeGuide coach, and technician; web and exercise support (e.g. duration and frequency) provided by technician; LifeGuide coach and health professionals respectively; provision and running of the exercise sessions at leisure centres; and health and personal social service use. The long-term cost effectiveness is based on an existing policy relevant decision analytical model (has informed 3 public health guidelines in UK). The analysis account for the impact of physical activity on lifetime risk of developing coronary heart disease, stroke, and type II diabetes. The discussion highlights the considerations for adapting the economic model to analyse the value for money of physical activity programmes in Africa.