

Active and Healthy Ageing

Prospective associations between physical activity, sleep and health outcomes in older adults

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Background

Expected world's population (≥ 60 years) → 2 billion (WHO, 2018)

'Healthy ageing' → "The process of developing and maintaining the functional ability that enables wellbeing in older age" (WHO, 2015)

Ageing: sedentary behaviour ↑, physical activity ↓ and sleep ↓

Physical activity and sleep → important health indicators for successful 'Healthy ageing'

↑ physical activity and ↑ sleep & ↓ sedentary behaviour → ↑ health

Age related changes in sleep → ↓ general functioning, activities of daily life, quality of life, cognitive performance, capacity to exercise and may contribute to insomnia

Pharmaceutical treatment options for sleep problems → side effects, costs

Physical activity and exercising → promising non-pharmacological treatment for sleep problems

Aim of this research

Literature review : systematically review the associations of physical activity and exercise on quality and quantity of sleep outcomes in older adults

Intervention study : to examine (1) prospective associations between physical activity, sleep and health outcomes (quality of life, well-being and daily functioning) and (2) the mediating role of sleep in the relation between physical activity and health outcomes among older adults

Qualitative study : to explore experiences and beliefs that underlie the associations between physical activity, sedentary behaviour, sleep and health from older adults' perspectives

Literature review

Search PICO(M)

Population : generally healthy adults, (≥60 years)

Intervention key terms : physical activity, exercise and sports

Comparison : control groups, baseline measurement

Outcome : quality and quantity of sleep

Methodology : intervention studies, (non-)randomised trials, prospective and retrospective observational studies (e.g. case-control, cohort studies), case studies and qualitative studies

Results

- 8.402 potential studies, 15 studies included
- Reasons for exclusion : wrong population, setting, or study design, poor qualitative methodology
- observational studies (n=8), RCT (n=6) and qualitative study (n=1)
- Sample and study characteristics : most studies in females and community dwelling older adults
- mean ages : 64-76 years
- Sleep measures: self-reported surveys (n=13), polysomnography (n=2) and accelerometry (n=1)

Conclusions : Physical activity and exercise in older adults :

- ↑ overall sleep quality and habitual sleep efficiency
- ↑ slow wave sleep, NREM sleep and wake time after sleep
- ↓ sleep latency and sleep disturbances



Intervention study: Lekker actief (OKRA)

12 week community-based multicomponent health program

1. Individual (progressive) walking program : group and individual walking
2. Strength training : group sessions and home exercising
3. Healthy nutrition

Quasi-experimental study design

2 x 2 between-within subjects (Condition x Time of Measurement) design

Intervention groups (Lekker Actief) and control groups

Pretest (Baseline) : Week 0 - Posttest (Week 12)

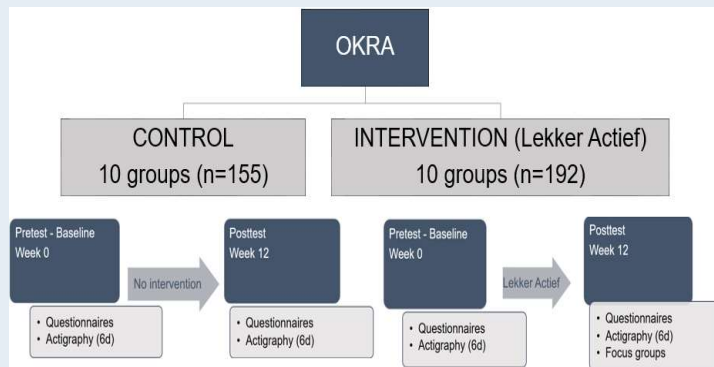


Primary outcomes

Quantity & Quality of sleep (accelerometer Actigraph™ wGT3X-BT, PSQI)

Secondary outcomes

Health Related Quality of Life (SF12) Well-being (WEMWBS) Functional ability (self-reported)



Start wave I : September 2018

completed, data currently being analysed

Start wave II : March 2019

will provide additional study participants

Current conclusions : Physical activity and exercise in older adults → ↑ sleep and health outcomes

- Only few studies examined these effects in a generally healthy population
- Only few studies used both subjective and objective (accelerometers) measures

