Longitudinal Urban Cohort Ageing Study

Multi-component health **PRO**motion and primary preventive intervention programmes and **LONG**-term evaluation in **HEALTH**y community-dwelling senior citizens **(PROLONG HEALTH)**

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Introduction:

Primary prevention in ageing populations is a major challenge for public-health policy, welfare systems, healthcare providers and payers.
The overall aim of PROLONG-HEALTH (2014-2016 BMBF 01EL1407) is to examine sustainable health promotion (HP) and primary prevention (PP) in an ageing population. Positive one-year effects of interventions in small group sessions or preventive home visits were seen in a randomised controlled trial (PRO-AGE 2000-2002) in community-dwelling senior citizens 60+ years without need of help in daily activities [1]. This RCT was embedded in the Longitudinal Urban Cohort Ageing Study (LUCAS) [2] to evaluate long-term effects (**Figure 1**).

Figure 1: Figure time line flow RCT of health promotion and primary prevention at wave 1 of the Longitudinal Urban Cohort Ageing Study

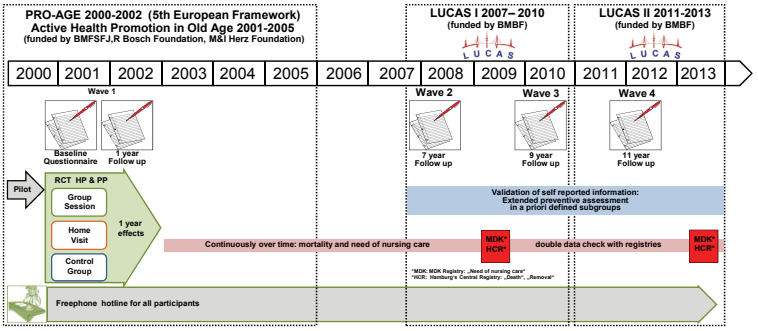
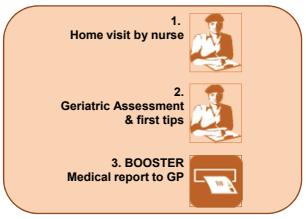


Figure 2: Embedded RCT LUCAS wave 1: „Active health promotion"

Dynamic small group sessions [3] :
Get to a place to receive intervention
Public-health based approach by investing in generally healthy people, and strengthen them to prevent the onset of disease and functional decline (innovative didactic concept to strengthen empowerment and decision making).

Participants' choice



Preventive home visits [4] :
Intervention delivery to somebody's home
Certified registered nurse with additional degree conducted a home visit in those individuals who opted for this intervention and performed a comprehensive geriatric Assessment. Nurse prepared problem list. Nurse, social worker, and GP cooperated in finding solutions for special needs.

Research question and expected results to improve health promotion (HP) and primary prevention (PP) in old age:

The principal research question is whether the HP&PP programme of (a) small group sessions or (b) home visits with successful results in the RCT 1 year follow-up also had long-term effects as to maintain functional competence and to postpone disability, and to reduce service utilisation in initially independent persons aged 60 years and older (**Figure 2**).

Therefore, long-term evaluations are planned using an interdisciplinary and multidimensional approach on the basis of the LUCAS data set:

(1) to obtain a quantitative description of the course of functional ageing, its dynamics and discontinuous changes over time without HP&PP interventions compared to the ageing course with HP&PP intervention, using repeated waves in the longitudinal LUCAS cohort for a period of 12 years after the HP&PP intervention (RCT);

(2) to evaluate long-term effects of the HP&PP intervention (RCT) as to maintain health and functional competence and to prevent/postpone the development of disability;

(3) to study potential effects of the HP&PP intervention on costs and efforts occurred through the use of long-term care as measured by the date of the beginning of nursing care (ambulant nursing care or entry into institution), and the level of care required (Pflegestufe);

(4) to investigate reasons and motivation for participating and non-participating as well as socio-demographic, psychological, biographical and health status characteristics at baseline;

(5) to investigate components also to younger segments of the ageing population (i.e., baby boomers) such as the transfer of age-independent or life-style related effects, as identified.

Methods:

The LUCAS Data Management Tool contains primary data on 400 variables tracked for each of the 3,326 participants (baseline) through repetitive questionnaires (4 waves). Data capture covers 12 years of observation, resulting in 30,000 person years.
Primary endpoints are (a) health behaviour, (b) preventive care use, (c) functional competence, (d) need of nursing care, (e) mortality.
An interdisciplinary team will determine appropriate methods for complex analyses: visualisation by Kaplan-Meier curves; competing risk analysis; multistate models; mixed models for functional measures to describe transitions over time; Rasch models to study variables not directly measurable.

Conclusions:

Established preventive regional and European networks will be used for translation of the results for sustainable behavioural and structural HP&PP interventions such as definition of target groups and health responders or suitable settings (get to a place/receive home visit).

References:
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Funded by the Federal Ministry of Education and Research / Gefördert vom Bundesministerium für Bildung und Forschung (BMBF)
BMBF FKZ: 01ET0708 – 01ET0712; ET1002A - 01ET1002D; 01EL1407