

The Longitudinal Aging Study Amsterdam: An Overview

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The Longitudinal Aging Study Amsterdam (LASA) is a longitudinal research project on predictors and consequences of changes in physical, cognitive, emotional, and social functioning in older persons. Concepts and design are extensively discussed in Deeg, Knipscheer and Van Tilburg (1993).

Motivation

Changes in body functions and in various aspects of life are important characteristics of aging. Many such changes will affect the autonomy and well-being of older persons. To date, in the Netherlands almost all research among older persons has been cross-sectional. This precludes the possibility to study the effects of changing circumstances on the autonomy and well-being of older persons, and the consequences of changes in autonomy and well-being. Moreover, processes of change in older persons are essentially multifactorial. To obtain proper insight into processes of change in older persons, multi- or preferably interdisciplinary research is a prerequisite. In the Netherlands, there is no tradition of such research.

Objectives

LASA is designed to be an interdisciplinary, longitudinal study across a period of at least 10 years. Although basically scientific in nature, the study should provide a basis for developing and evaluating (central and

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local government) policy in the field of aging. The global objective of current policy in the field of aging can be formulated as enhancing the autonomy and quality of life of older persons. It is expected that by using longitudinal data, policy relevant aspects of aging can be identified and new policy aims can be developed. Moreover, assumptions from which policy measures are developed can be tested, and effects of policy changes on the older population can be assessed prospectively.

LASA is primarily an observational study; the database will allow testing of various specific hypotheses. Intervention studies will not be a part of LASA.

Central questions

LASA's main topics of concern are autonomy and quality of life of older persons. Autonomy is operationally defined as functioning, *i.e.* observable behavior; quality of life is defined as the evaluation by older persons of their functioning. Four components of functioning have been distinguished: physical, cognitive, emotional and social. The four components will have different contributions to autonomy and quality of life. This distinction, however, does not intend to deny any interrelation between these components.

The study focuses primarily on predictors of change in these components of functioning, on trajectories of functioning, and on consequences of change in functioning. The following central questions have been formulated:

1. Among older persons, what changes over time take place in the physical, cognitive, emotional and social components of functioning?
2. What are the predictors of change for each of the four components of functioning?
3. How are changes in the four components of functioning interrelated?
4. What are the consequences of changes in functioning in terms of older persons' contributions to society, their adjustment and their need for care?

More detailed research questions are being formulated, some of which will use additional data collected in specific subsamples. One such substudy concerns the course of depression.

Elaboration

Changes in functioning (the dependent variable) will be established during the study period, based on successive study cycles. In addition to interview questions, objective measurements should provide indicators sensitive to change.

Physical functioning is measured by functional limitations from self-reports, and by objective measures of mobility, coordination, balance, strength, and vision. Cognitive functioning is measured by a brief screening test of dementia, and by tests of intelligence, learning capacity, memory, and psychomotor speed. Emotional functioning is measured by widely used depression and anxiety screening scales, and in a subsample by a diagnostic interview. Finally, social functioning is measured by composition of the social network, frequency of contacts, exchange of support, and by various forms of social participation.

In addition to the behavioral aspect of functioning, the respondent's evaluation of their functioning is recorded. In the LASA model, the former underlies autonomy, the latter underlies quality of life and well-being. Interactions between the various changes in components of functioning and their timing will be studied.

Characteristics that are expected to predict changes in one or more of the components of functioning (the independent variables) are expected to be related both to the environment and to the individual: chronic conditions, use of medications, objective clinical assessments, subjective health perceptions, use of services, life style, personality, personal biography, housing and living arrangements, and socio-economic status. Furthermore, changes in functioning are expected to be related to 'life events' prior to and during the study period, which are defined as changes in independent variables such as health, living arrangements, or social network, and their perceived impact on the respondents.

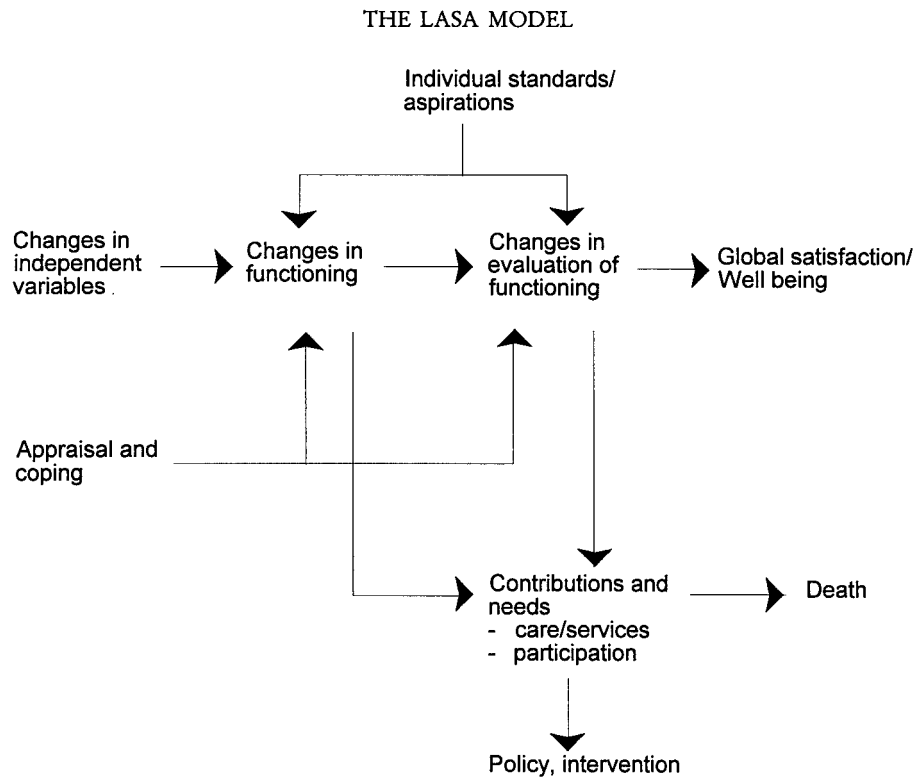
Appraisal and coping, and personal standards and aspiration levels are assumed to influence trajectories as mediating variables, in addition to the independent variables mentioned above.

The consequences of improvements and declines in functioning and the resulting (in)dependence will be quantified in terms of contributions to society and the need for health and social services. Ultimately, time, circumstances and causes of death will be studied in connection with type of functional decline in the last phase of life. The conceptual model described is summarized in the figure 'The LASA Model' (p. 4).

Special comparison will be made of predictors, trajectories and consequences of change in functioning between males and females, and between

healthy individuals and individuals suffering from one or more chronic conditions. The first comparison allows evaluation of sex differences in adjustment to *e.g.* chronic disease; the second comparison allows evaluation of predictors of inception of decline in functioning, and of improvement in functioning as well as of deterioration below a critical level. International comparison will be sought, to investigate the differential effects of socio-cultural circumstances and of care systems on autonomy and quality of life.

To be able to distinguish age, cohort and period effects, in the future a new cohort will be sampled from the same sampling frame as the original cohort.



Sample

A stratified random sample of a total of over 3000 persons, weighted according to expected mortality at mid-term (= after 5 years) in each age

group (ages 55-59, 60-64, 65-69, 70-74, 75-79, and 80-85 years) should provide sufficient opportunity for multivariate research and for obtaining adequate subsamples for special studies. In addition, it will leave sufficient participants to be examined after a period of 10 years.

Municipal registries provide the sampling frame. The sample is constructed so as to reflect the national distribution of urbanization and population density. The sample is based in three culturally distinct geographical areas in the West, East, and South of the Netherlands. Each area consists of one middle- to large-size city and two or more rural municipalities which border on the city. The municipalities included in the sample are: Amsterdam - Wormerland - Waterland (West), Zwolle - Ommen - Genemuiden - Zwartsluis - Hasselt (North-East), and Oss - Uden - Boekel (South).

The organization of LASA is linked to that of the NESTOR-program 'Living arrangements and social networks of older adults' (Knipscheer *et al.*, forthcoming). This is essentially a cross-sectional study, with follow-up of specific smaller subsamples. While LASA is designed as an interdisciplinary project with potentially policy relevant outcomes, the main purpose of NESTOR-LSN is the development of theory and methods for the study of social networks in older age. NESTOR-LSN and LASA use the same sample. The content and organization of the field work is coordinated, while the particular purposes of each study are preserved.

Time schedule

The baseline study for NESTOR-LSN took place during January-December 1992, and part of the baseline data is considered as baseline material for LASA. The major LASA baseline study was carried out separately from September 1992 - September 1993. Through the year 2000, similar study cycles will take place every three years. In a limited number of side studies of specific subsamples, topics will be studied for which extra data collection is needed.

Approach of respondents

The respondents are visited at home by trained interviewers who use lap top computers for data entry. Interview and tests take one and a half hours approximately. To obtain additional data, respondents are asked to

fill out a written questionnaire separately. After having obtained the consent of the respondent, a separate visit is made by a nurse interviewer to draw blood and to take clinical measurements.

Organization

LASA is facilitated by the Department of Policies for the Ageing, Ministry of Health, Welfare, and Sports, through a long-term grant to the Vrije Universiteit, Amsterdam. The study is carried out primarily in the Departments of Psychiatry (Faculty of Medicine) and of Sociology and Social Gerontology (Faculty of Social and Cultural Sciences). Also taking part are members of the Departments of General Practice and Nursing Home Medicine (Faculty of Medicine) and of Educational Sciences (Faculty of Human Movement Sciences). There are several external collaborative agreements: with the Northern Research Center for Health Issues (University of Groningen), the Institute of Medical Technology Assessment (Erasmus University Rotterdam), the Institute of Social Medicine (University of Amsterdam), the Department of Human Nutrition (Agricultural University of Wageningen), the Netherlands Central Bureau of Statistics, and the 'Weezenlanden' hospital (Zwolle).

Progress of the study is monitored by an international Advisory Board and, more frequently, by a smaller, Dutch board. In both boards, the Ministry of Health, Welfare, and Sports is represented. Ethical aspects of the study procedures have been approved in 1992 by the committee on Ethics of Research in Humans, Faculty of Medicine, Vrije Universiteit.

References

- Deeg DJH, Knipscheer CPM, Tilburg W van (eds.) (1993) *Autonomy and Well-being in the Aging Population: Concepts and Design of the Longitudinal Aging Study Amsterdam*, NIG Trendstudies No. 7, Bunnik: Netherlands Institute of Gerontology.
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