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The following articles study in health care of the elderly was published in the journal of the World Health Organization, 1985.

any part of the data collected was used in the follow-up of the study. The results of the study are published in the journal of the World Health Organization, 1985.

PROGRESS REPORT ON THE FOLLOW-UP OF THE INTERNATIONAL COMPARATIVE EPIDEMIOLOGICAL STUDY ON HEALTH CARE OF THE ELDERLY ELEVEN COUNTRIES STUDY (Part A)

REPORT ON THE FIRST MEETING OF THE STEERING GROUP FOR THE FOLLOW-UP OF THE ELEVEN COUNTRIES STUDY ON HEALTH CARE OF THE ELDERLY (Part B)

by
Professor E. Heikkinen
Department of Health Sciences
University of Jyväskylä
Jyväskylä, Finland



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the data. New computer printouts were thereafter run on the results included in the first publication. Only very small differences (plus or minus one percent) were observed between the original and the collected data.

Because the level of measurement in this interview study was relatively low in most cases (ordinal scale or even dichotomous variables), conventional methods which require a normal distribution of variables, and at least interval scales, could not be applied. Therefore, polychoric and polyserial correlation coefficients (Jöreskog, K.S. & Sörbom, D. Analysis of linear structural relationships by maximum likelihood and least squares methods. University of Uppsala, Department of Statistics, Research report 81-82, 1981), were used instead of the product-moment (Pearson) correlation coefficients.

The interactions between several discrete variables were analysed by log-linear models using computer-program GLIM (Payne, K. The log-linear models for contingency tables in the analysis of survey data. O'Muircheartaigh, C.A. & Payne, C. ed. London, John Wiley and Sons, 1977, pp. 105-144. Everitt, B.S. The analysis of contingency tables. London, Chapman & Hall, 1977).

Differences of means in different groups of variables were tested by one-way analysis of variance and, in addition, by a multiple comparison test (least significant difference method) for localizing the differences (Koopmans, L.H. An introduction to contemporary statistics. Boston, Duxbury Press, 1980).

Data analysis in the four identified areas. The data analysis was limited to five or six study populations only, in order to facilitate comparisons between the areas, and to reduce the amount of information. In the selection of the populations, various factors were taken into consideration (number of persons interviewed, response rates, cultural differences). Despite lifestyles the analyses were done only on urban populations.

The results of the statistical analyses were examined at the first meeting of the steering group, where suggestions and decisions were made for additional data analyses and drafting of reports. The results of the data analyses have been sent to the Regional Office.

National progress and longitudinal studies. On the basis of the survey carried out among the participating centres, it can be concluded that most investigators have been able to publish several papers on their study data (see Part B, Annex 2). There are, however, great differences in this respect between the centres due to differences in resources available. The results of the surveys were in most cases used for planning national policies for the care of the elderly, e.g. in connection with the World Assembly on Aging, Vienna, 1982.

In a few centres the cross-sectional study has already been developed into a longitudinal follow-up of the original cohorts (Bialystok, Brussels, Upper Normandy), and in certain other centres there are plans for starting a longitudinal study (Belgrade, Berlin (West), Kiev and Tampere). In addition to repeating the interviews there are also plans for incorporating clinical examinations and certain new items, e.g. dementia, disability, into the follow-up studies.

Proposals on the follow-up of this activity

In order to make full use of the existing epidemiological data it was agreed at the first meeting of the steering group for the follow-up of the Eleven Countries Study that centralized data analysis is necessary. The centre in Jyväskylä together with the steering group should have the responsibility for coordinating the data analysis and of releasing the data in the interim period before publication.

The development of the cross-sectional surveys into the longitudinal research designs would also require coordination between the centres in order to ensure comparability in the contents and the methods of the studies. Furthermore, coordination of activities is also needed in the publishing of the results of the deeper statistical analyses of existing data.

It has also been noted that the already existing data base and information to be collected in the longitudinal studies have a direct relation to regional targets and indicators in the HFA2000 programme, e.g. targets 2, 3, 14.

With regard to the above-mentioned points, it is felt that the question of further WHO co-sponsorship in following up this study which has served as a model for global activities in the epidemiology of aging and which could provide an important contribution to the regional strategy for HFA2000 by the identified targets/indicators, should be considered as an important resource in present activities of the Regional Office.

Financial support would be required both for data analysis and for the activities of the steering group. The Academy of Finland is expected to cover the costs of data analysis. The coordinating activities and the costs caused by other activities (preparation of reports for WHO on specified problem areas of the Eleven Countries Study) might be financed on the basis of a new agreement between WHO and the Department of Health Sciences.

Annex 1

BIBLIOGRAPHY OF NATIONAL PUBLICATIONS BASED ON DATA OF THE
ELEVEN COUNTRIES STUDY

Belgrade

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B)

REPORT ON THE FIRST MEETING OF THE STEERING GROUP FOR FOLLOW-UP OF THE
ELEVEN COUNTRIES STUDY ON THE HEALTH CARE OF THE ELDERLY

Introduction

The first meeting of the steering group for follow-up of the Eleven Countries Study on the Health Care of the Elderly was held in Peurunka, (Jyväskylä), Finland from 19 to 21 November 1984. A list of participants is given in Annex 3.

Professor E. Heikkinen described the development of the Study since 1982, when the editorial board for the report on the Eleven Countries Study was held in Jyväskylä, Finland. At that meeting, a steering group for the coordination of further work was established, consisting of Professor Heikkinen, Chairman, Professor Dj. Kozarevic and Dr K. van Calster. The steering group reported that it wished to coopt Dr W.E. Waters and a representative from the WHO Regional Office for Europe.

Collaborating centres at Kiev, Leuven, Belgrade and Jyväskylä were nominated to coordinate the analysis on risk factors and risk groups (Dr Nina N. Sachuk), services (Dr van Calster), health and functional ability (Professor Kozarevic) and lifestyles (Professor Heikkinen).

The first meeting of the steering group was organized following the recommendations of the above-mentioned meeting of the editorial board. The first major report of the study, "The Elderly in Eleven Countries: a social medical survey", was published in 1983.

A deeper analysis of the existing data was made at the Department of Health Sciences, University of Jyväskylä, on the four specified areas mentioned above. The statistical methods used in the data analysis are presented in Annex 1. This analysis was used by the coordinators for planning further work which aimed at publishing reports about the main results in the global problem areas.

The data analysis was limited in most cases to five or six study populations only, in order to facilitate comparison between the areas, and to reduce the amount of information. In the selection of the populations, various factors were taken into consideration.

The participating centres were also asked to prepare reports on national progress in publishing the results and their use, and on the follow-up of the cohorts in countries in which longitudinal studies have been developed.

The aims of the present meeting were to study the results obtained in the four above-mentioned areas; to give recommendations for any additional analysis required for drafting reports and for publishing the results; and to discuss and make recommendations concerning further activities within the framework of the Eleven Countries Study.

Dr Hana M. Hermanova gave a brief outline of the activities of the WHO Regional Office for Europe in the field of health care of the elderly and described the targets and indicators for the HFA2000 programme, particularly in relation to the data base of the study, which could be further explored and utilized.

Professor Heikkinen was elected Chairman of the meeting. Rapporteurs were elected for various parts of the meeting:

Introduction	Professor Heikkinen
Health and functional ability	Professor Kozarevic
Services	Dr van Calster/Ms Riitta-Liisa Arajärvi
Risk factors/risk groups	Dr Sachuk
Lifestyles	Professor Heikkinen
Concluding discussion	Dr Hermanova

Results and recommendations for additional data analysis

The results and statistical data on the four problem areas were discussed on the basis of the reports prepared by the coordinators and the Department of Health Sciences. The summaries of the discussions and recommendations for additional data analysis are presented in Annex 2. The reduction of the study areas to five or six areas only was felt adequate and the statistical

approaches and methods used were regarded as appropriate in relation to the quality of the data. It also appeared that the overwhelming majority of the required data analysis was already available and therefore it was felt possible to produce the reports within a few months.

Concluding discussion

It has been noted that studies based on the Eleven Countries Study have been initiated on other continents.

Several investigators expressed a wish to develop a longitudinal study based on the results of the Eleven Countries Study, e.g. Belgium, Finland, France, Federal Republic of Germany, Poland, USSR and Yugoslavia.

It has also been noted that the information (data base) has a direct relation to regional targets and indicators, e.g. Target 2: "Adding life to years" and Target 3: "Better opportunities for the disabled".

With regard to the above-mentioned points, it is felt that the question of further WHO co-sponsorship in following up this study, which has served as a model for global activities in the epidemiology of aging and which could provide an important contribution to the regional strategy for HFA2000 via the targets/indicators identified, should be considered as an important resource in the current activities of the Regional Office.

Recommendations

1. (a) to explore possibilities for publication of four identified sections of the follow-up in a WHO publication. Action: Dr Hermanova.

(b) to explore the possibility of a publication outside the Regional Office on a detailed analysis of data in respect of four identified areas. Action: Professor Heikkinen and Dr Hermanova.
2. To assign the following chapters to the following authors:
 - Health and functional abilities: Professor Kozarevic
 - Risk groups, risk factors: Dr Sachuk
 - Lifestyles: Professor Heikkinen
 - Services: Dr van Calster and Ms Arajärvitogether with co-authors. Action: Professor Heikkinen.
3. To designate the Jyväskylä Centre as a national centre recognized by WHO for the detailed analyses, execution and completion of the statistics and for preparing the draft manuscripts.

To hold a meeting of the editorial board (steering group) in 1985. Action: Dr Hermanova.
4. The steering group to coordinate the data analyses and be responsible for any release of data in the interim period before publication.

Annex 1

STATISTICAL METHODS USED FOR DATA ANALYSIS

In the first report "The Elderly in Eleven Countries", frequency and percentage data on either the original or derived variables were presented. In further statistical analysis the associations between the selected variables were investigated by using a variety of multivariate methods. As mentioned in Part A, page 2: "Because the level of measurement was relatively low in most cases (ordinal scale or even dichotomous variables), conventional methods which require a normal distribution of variables, and at least interval scales, could not be applied. Therefore, polychoric and polyserial correlation coefficients (Jöreskog, K.S. & Sörbom, D. Analysis of linear structural relationships by maximum likelihood and least squares methods. University of Uppsala, Department of Statistics, Research report 81-82, 1981), were used instead of the product-moment (Pearson) correlation coefficients.

The interactions between several discrete variables were analysed by log-linear models using computer-program GLIM (Payne, K. The log-linear models for contingency tables in the analysis of survey data. O'Muircheartaigh, C.A. & Payne, C., ed. London, John Wiley and Sons, 1977, pp. 105-144. Everitt, B.S. The analysis of contingency tables. London, Chapman & Hall, 1977).

Differences of means in different groups of variables were tested by one-way analysis of variance and, furthermore, by using a multiple comparison test (least significant difference method) for localizing the differences (Koopmans, L.H. An introduction to contemporary statistics. Boston, Duxbury Press, 1980)."

Risk groups and risk factors of dependency by Dr Nina N. Sachuk

Problems, goals and definitions

The elderly are particularly vulnerable to breakdown and loss of autonomy. Some of them, due to illness, loneliness, or a decrease in life resources, are in increased danger of becoming dependent.

In this context, "risk of becoming dependent" is considered in connection with health status, in particular with functional ability.

This is why the problem is closely related to other sections of the analysis of the existing data (health conditions, lifestyle and attitudes, living conditions, lack of education, use of services).

Evaluation of "risk groups of high dependence" deals with the potential usefulness of an approach to health care in old age.

Proposed actions

To estimate the level of association between family structure and frequency of loss of functional ability of the elderly in fulfilling activities of daily living, which lead to dependency upon other people's help and social services.

To pick out groups of the elderly which are in a "high risk" situation of physical dependency, combined with several other risk factors such as living alone and having no relatives, poor housing conditions, unhealthy behaviour and little education.

Statistical analyses on risk groups and risk factors, thanks to the Finnish Centre activities, consist of three separate aspects of the material:

- cross-tabulations between functional ability and familial categories;
- cross-tabulations between functional abilities and familial categories when the level of risk factors is controlled;
- frequency analysis by log-linear models.

On the basis of the above-mentioned data analyses a number of conclusions can be made.

1. There are no strong regularities in the findings dealing with the association between disabilities and living alone. The previous hypothesis that the frequency of poor ability in the group "living with the family (others)" is higher than the group "living alone", is confirmed only in some study areas and some sub-groups. For example, in Leuven, Tampere (74-89), Medi-Pyrenees, Upper Normandy, West Amiata (74-89), Florence, Kiev (60-74) and Belgrade.

There seem to be two alternative situations that exist in different countries:

- disabled elderly persons who can no longer live alone and thus return to their family (or were taken in by the family); in this case the index of disability among those living alone would be lower than among those living in the family;
- disabled elderly persons who, in spite of their state of health, must continue to live alone because the family could/would not take them back.

2. In almost all study areas, when two or more of the above-mentioned risk factors exist, the disability is significantly higher than in groups of individuals with one or no risk factors.

This fact is very important in practice. The group of the elderly with several risk factors of physical dependency must be considered as a high risk group and need special attention from the authorities and practitioners dealing with medical and social services for the elderly.

When taking into consideration the specific category of the elderly living alone, one has to count them at the same time as a risk group and as a risk factor. A similar attitude must be taken to the group living with spouse only, in which the wife is 70 years or over.

Proposals for further analyses

Elaborations of the data should be made in order:

- to analyse associations between disability and some of the risk situations mentioned above;
- to synthesize the results of the different parts of the investigation dealing with risk factors and risk groups into one section;
- on the existing and additional data, to elaborate recommendations on preventive and rehabilitative measures relevant to risk factors and risk groups of high dependency.

Lifestyles by Professor E. Heikkinen

The first report on lifestyles in the context of the Eleven Countries Study on Health Care of the Elderly described the main features and trends in behaviour and life satisfaction among the populations investigated. Large differences between the sexes, the age groups and the study areas were observed in a number of the spheres of the individuals' lifestyles. These differences deserve more attention in attempts to prevent premature impairment of health and functional ability of the elderly.

A deeper analysis of the various components of lifestyle and their interactions with each other and with certain factors related to health and functional ability, socioeconomic status and use of services, was considered necessary in order to enable us to understand the complex content of lifestyle (characteristic to various groups) among the elderly.

The few population-based studies carried out among the elderly suggest that various forms of activity predict better health, happiness and longevity, compared to less successful aging among passive and isolated elderly persons. Therefore, the point of departure of the analysis in the present study was the division of lifestyle into active and passive styles. These components of lifestyle were cross-tabulated with life satisfaction. In this way, it was possible to characterize four groups of people:

- active and satisfied,
- active and unsatisfied,
- passive and satisfied,
- passive and unsatisfied.

The populations studied were those in Belgrade, Kuwait, Kiev, rural Greece and Tampere.

The aims and the problems of the study were to analyse the relationships between activity and life satisfaction in the populations investigated, and to characterize the above-mentioned four groups in relation to their health status, family structure and educational level.

The preliminary findings suggest that the active individuals are more satisfied than the passive ones in all populations investigated. Self-perceived health did not affect or change the relation between activity and life satisfaction among most groups investigated. It also appeared that those who were classified as active seemed to have more education than the others. The group classified as active and satisfied, seemed to have better functional ability compared to those classified as passive and satisfied. When the interaction of several variables was investigated by the log-linear models, significant differences were observed between the populations studied.

In further statistical analyses of the data, attention will be paid to:

- more detailed descriptions about the similarities and differences in the structures of lifestyles between the populations, and
- the relationships between the characteristics of lifestyle and socioeconomic and health variables.

It was also pointed out that several aspects of lifestyle are connected with the regional targets in the HFA2000 programme.

Lifestyles

It was noted that the data base available from the Eleven Countries Study could contribute to regional target 14: "Social support and social network" and optional regional indicator 14.3: "Proportion of the population without social contact" (or any other type of information on loneliness in ad hoc surveys). More research on the type of indicator will have to be promoted by WHO.

Annex 3

LIST OF PARTICIPANTS

BELGIUM

Dr K. van Calster
Heverlee

FINLAND

Ms Riitta-Liisa Arajärvi
Department of Public Health, University of Tampere

Professor E. Heikkinen
Department of Health Sciences, University of Jyväskylä

Mr J. Jokela
Department of Health Sciences, University of Jyväskylä

Dr Marja Jylhä
Department of Public Health, University of Tampere

USSR

Dr Nina Sachuk
Institute of Gerontology, Kiev

YUGOSLAVIA

Dr Dj. Kozarevic
Director, Institute of Chronic Diseases and Gerontology, Belgrade

WORLD HEALTH ORGANIZATION

Regional Office for Europe

Dr Hana Hermanova
Regional Officer for Care of the Aged