

DESCRIPTION OF THE RESEARCH PROJECT „HEALTH AND DEMOGRAPHIC STUDY OF PREGNANT WOMEN AND INFANTS”

K. Joubert, Rózsa Ágfalvi and Éva Gárdos

Demographic Research Institute of the Central Statistical Office, Budapest, Hungary;
National Institute of Infants' and Children's Health, Budapest, Hungary;
Department of Population Statistics, Central Statistical Office, Budapest, Hungary

Abstract: The authors report on the effectuation of comprehensive longitudinal survey. In the first stage of the survey, by means of regularly visiting the sample of a 2 per cent national representative of pregnant women, information was collected on the exogenous and endogenous factors which may affect the condition of the pregnant women and the outcome of pregnancy. In the second stage, the longitudinal survey concerning the growth of the live-born children of the observed pregnant women took into consideration the children's health condition, social circumstances as well as the factors exerting an influence during pregnancy and the conditions of confinement.

Key words: Prenatal care, Health, Socio-economic factors, Affecting the course, Outcome of pregnancy, Longitudinal survey of children, Diseases influencing the growth, Nutrition.

Introduction

The first scholarly study of growth connected with the name of Stöller, J. A. was published in 1729 and the first study of bodily development containing the first data on body measurements by Jambert, Ch. F. appeared in 1754 (Tanner 1985). Thus, it is more than two hundred years that man has been trying to acquire a more profound knowledge of the dimensional changes of human ontogenesis and its relationships with physiological and environmental factors.

The significance of the study to be described now may be highlighted by its two important features:

- the study is being carried out on a 2 percent representative national sample;
- the longitudinal study begins not at the newborn-age but at the earliest possible time of the pregnancy with the continuous monitoring of the pregnant woman.

The Preliminaries of the Study

Following the idea of the study formulated by J. Nemeskéri, in 1970 the group of the cooperating institutions which even now work jointly in order to realize the research project was outlined in 1971. These institutions are as follows: the Demographic Research Institute of the Central Statistical Office, the Department of Population Statistics of the Central Statistical Office, the National Institute of Infants' and Children's Health and the Section of maternal, child and youth welfare of the Ministry of Health.

The measuring instruments necessary for the countrywide study – and meeting also international standards – were prepared on the basis of the experiences obtained from the pilot study that had been carried out in 1975.

The first stage of the study began in November 1979 by including pregnant women into the sample and then, in June 1980, the second phase of the study, the study of the development of infants and children was started with the examination of the first live-born babies of those pregnant women who had been included into the sample. The duration of the inclusion of the pregnant women was 3 years.

The Aim of the Research Program „Health and Demographic Study of Pregnant Women and Infants”

The aim of the research program, because of its interdisciplinary character, is manifold. According to its structure the aim of the study can be formulated in three sets of relationships:

Questions related to the preliminaries, course and outcome of the pregnancy

– The relationship between the disease medication, x-ray examination and other radiation burden on the woman examined during the preconception and periconception period, the number and outcome of her previous pregnancies, the time which has elapsed since the previous obstetrical event, the quantity of alcohol consumed, smoking, the diseases of the husband, the quality of the relationship between the spouses, etc. on the one hand and the course and outcome of the pregnancy on the other.

– The investigation into the relationship between exogenous influences on the pregnant women during the various periods of the pregnancy (physical and nervous burdens at the place work, at home, and during commuting, etc.), endogenous causes and impacts (the effect of possible genetic damage, diseases, medicaments, chemicals, radiation, immune reactions, etc.), the degree of smoking and alcohol consumption, changes in the relationship with the human and physical environment on the one hand and the course and outcome of the pregnancy (perinatal complications, live births, foetal deaths, low birth weight and/or premature birth, etc.) on the other.

The investigation results obtained from the many-sided analysis of the above relationships are expected primarily to provide a more reliable basis to specify these ones of certain diseases, environmental and social factors, harmful effects which make it probable, by themselves alone or jointly, that pregnancies do not end in live births, and to outline the degree of the respective probabilities. It is important to discover during which prenatal periods the appearance of the above harmful effects is the most dangerous.

The investigation into infant and child development and into the diseases, environmental etc. circumstances having an impact on it

The body development and growth of liveborn children of observed women are studied from the birth onwards with a longitudinal method.

Our aim is to work out and publish standards worthy of being used as references on the basis of the investigated data of body measurements for a better and more accurate evaluation of the rate and extent of growth characteristics of the various ages.

For establishing of standards to be used in practice, only the data of those children are used who were born with a weight of 2 500 to 4 500 g, and who are not suffering from diseases with a duration of more than 60 days (e.g. from acute diseases having become chronic) or from diseases having an impact on the rate and extent of the growth and development.

In the case of groups excluded from the above standard we investigate the retardation in development, as compared to the development of the so-called physiological, due to low birth weight or disease or to the joint impact of these two factors.

We investigate the problem of what joint or individual impact more frequent diseases or groups of diseases, what family and social environmental factors have on the rate and extent of the growth and development.

Our aim is also to investigate the relationship between nourishment, and primarily feeding with and without the mother's milk on the one hand, and the extent of development and growth as well as the incidence of diseases on the other.

The relationship between the course and outcome of the pregnancy and the delivery process on the one hand and the newborn condition of the child and its development at the infant age on the other

In this set of relationships we essentially study which factors among those mentioned under item 1 have an effect on the development and growth of the child at the newborn age and then at the infant age, and to what extent. Further, we investigate the conditions and the duration among and, respectively, during which harmful influences appearing during the foetal period or at birth have an impact on the rate and extent of the development.

Do the above-mentioned harmful influences effect they way the infant is being fed (feeding with and without mother's milk) on the evolution of its general health condition?

The System of the Repeated Data Collection

One of the preconditions of the realization of longitudinal studies is the collection – repeated by specific periods – of data and information related to the same individual.

At the stage of the collection of data on pregnancy the first data collection was performed simultaneously with the inclusion of the pregnant woman into the care-provision, during about the 9th week of the pregnancy.

The dates set for the repeated data collections: during the 20th, the 27th and 34th week of the pregnancy (as of the first day of the last menses) as well as subsequent to the end of the pregnancy.

The repeated examinations of the stage of the study of infant and child development follow one another according to the following: Examination at the newborn age: at the age of 24 to 48 hours. After that: at the age of 30, 60, 90, 120, 150, 180, 240, 300 and 365 days, respectively. Between the ages of 1 to 2 years: at the age of 15, 18, 21 and 24 months, respectively. From the age of three years, once a year on the child's birthday.

Questionnaires and Data Sheets of the Study

The questionnaires of the data survey (data sheets) must be constructed in a way that as far as it is possible all the information could be obtained which presumably contribute to the realization of the set aim.

The questionnaire „Data sheet on pregnancy” breaks down into six chapters. Chapters I includes basic data, the questions regarding the state of health and conditions of the pregnant woman and possible damaging influences; chapters II to V include the repeated questions. Chapter VI gives information on the outcome of the pregnancy.

The questionnaires and data sheets regarding the child are as follows: „Data sheet on the infant „A I” and „A/2” contain the data regarding the state of health of the newborn after birth and the anthropometrical data.

The „Data sheet on the infant” „B” and „C” include general data on the infant as well as the anthropometrical data measured at the repeated examinations, the diseases diagnosed, medicaments taken and the data on nourishment, etc.

The data sheet on the infant signed „D” has the title „Demographical and environmental data and the state of health of the parents and of the child between the age 1 to 2 years”.

The title of the data sheet „E”: „The examination of the child's development and state of health at its age of 3, 4, 5 and 6 years, respectively”.

As to their contents the data sheets „D” and „E” are essentially identical with the data sheets „B” and „C” except for the chapter on nourishment which is lacking in the first.

The Present State of Research

The stage of data collection dealing with the study of pregnant women ended in August 1983. Then the preparation of the data for processing by computers began, which followed by the fixation of data, and at present computer table designs are under preparation for a comprehensive paper. In 1982 a preliminary paper was issued on the basis of part figures (Gárdos 1982).

Of the 8800 completed pregnancies included in the sample 8333 ended with live births. With the study of the liveborn children at the age of newborn the second stage of the project began: the study of the growth of the children which has been in process since that time.

The data of the growth study is processed by phases. We first intend to prepare the growth standards of infancy. It will be published presumably in 1986.

References

- GÁRDOS, É. (1982): A terhesség alakulását befolyásoló néhány tényező elemzése – a KSH Népesedésszisztiikai főosztályának kiadványa.
- TANNER, J. M. (1985): Pages from the Writings of Rosen's Contemporaries: on the First Textbook and the First Table Human Growth. – Acta Paediatr. Scand. 74; 5–16.

Mailing addresses: Dr. Kálmán Joubert

KSH Népeségtudományi Kutató Intézet
Veres Pálné u. 10. H–1053 Budapest, Hungary

Dr. Rózsa Ágfalvi
Országos Csecsemő- és Gyermek egészségügyi Intézet
Tűzoltó u. 7–9. H–1094 Budapest, Hungary

Mrs. Éva Gárdos
Központi Statisztikai Hivatal
Keleti Károly u. 5–7. H–1525 Budapest, Hungary