

3

Datasets

To demonstrate the latent class models in epidemiology, the next six chapters describe applications of several variations of latent class models using multiple datasets containing data from a variety of observational studies. The datasets differ in size, participant characteristics, and principal focus; this allows for the application of the models in a wide range of settings.

1. Amsterdam Growth and Health Longitudinal Study (AGAHLS)

The Amsterdam Growth and Health Longitudinal Study (www.aggo.nl) [8, 72] is an ongoing observational study containing data from approximately 600 secondary school pupils collected throughout the life course. Initial goals in 1976 were to examine the growth and health among teenagers. Throughout the years, the AGAHLS has aimed to answer research questions dealing with the relationships between the (natural) developments of a multidisciplinary range of variables measured from adolescence into adulthood. Specific interests concern anthropometrics, physical fitness, cardiovascular risk factors, lifestyle, musculoskeletal health, psychological health and well-being. Besides this, many methodological issues related to the analysis of longitudinal data were also explored within the framework of the AGAHLS.

2. Spokane Heart Study (SHS)

The Spokane Heart Study [9, 10] is an ongoing longitudinal observational study of approximately 1000 adults from the Spokane, Washington area. The main aim of the study is to investigate the development of preclinical atherosclerosis in order to assess the risk of coronary heart disease. A range of measurements, including sophisticated measures of coronary heart disease and atherosclerosis, are determined at two-year intervals. To test possible hypotheses concerning psychological health and coronary heart disease, the participants are also asked to fill out several psychological questionnaires including information on stress, anger and depression. Information on possible lifestyle covariates has also been collected via questionnaires.

The SHS is a unique dataset that contains valuable information that enables the study of lifestyle, psychological wellbeing and coronary heart disease.

3. Diabetes Care System West-Friesland

The Diabetes Care System West-Friesland [11] is a cohort with approximately 4,000 patients with type 2 diabetes who are treated and monitored in the Diabetes Care System West-Friesland in Hoorn, the Netherlands. Around 80%

of the total population of type 2 diabetes patients in that region is enrolled in the treatment system. Annually, the patients are seen by a diabetes nurse and a dietician and undertake a physical examination which includes the standard care for diabetes patients as well as additional care. Of particular interest are glucose control and disease complications, cardiovascular health and general health- and wellbeing. The study started in 1998 and the participants have been measured up to six times.

4. Netherlands Information Network of General Practice (LINH)

LINH (www.linh.nl) [12] holds longitudinal data on morbidity, mortality, prescriptions and referrals of about 330,000 patients of approximately 80 general practices spread throughout the Netherlands. The main aim of the study is to maintain a high-quality longitudinal database to study research questions within the fields of health services research and quality of care. Data are extracted from electronic medical records and diagnoses are coded using the International Classification of Primary Care. Patient characteristics such as age, gender and type of health care insurance (before 2006) are also recorded.