CORRECTING FOR NON-IGNORABLE MISSINGNESS IN HEALTH INDICATOR TRENDS

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Data missing not at random (MNAR) are a major challenge in survey sampling. We propose an approach based on registry data to deal with non-ignorable missingness in health examination surveys. Our approach relies on follow-up data available from administrative registers several years after the survey. For illustration, we use data on smoking prevalence in the Finnish FINRISK study. The data consist of survey information for the participants and including missingness indicators, register-based background information and register-based time-to-disease survival data for the full sample. The parameters of missingness mechanism are estimable with these data although the original survey data are MNAR. The underlying data generation process is modelled by a Bayesian model. Our results indicate that the estimated smoking prevalence rates in Finland may be significantly affected by missing data.