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Incidence of First Abortions: Integration of Administrative and Survey Data within a Joint Cohort Life Table Model

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Introduction

Integration of administrative and survey data to address sources of error is a fast-growing area of research. This paper examines the case of abortion, where survey data are susceptible to self-report bias, while administrative data provide crude but comprehensive and relatively unbiased information.

Objectives and Approach

Although abortion is a common and legal procedure, information is lacking on the proportion of women having one or more abortions during their lifetime. A Bayesian joint cohort life table model estimates age-specific rates of incidence of a first abortion for cohorts of women born between 1936 and 2003 an residing in England and Wales. The model is fitted using (1) waves II and III of the British National Surveys of Sexual Attitudes and Lifestyles (NATSAL) and (2) administrative counts of first ever abortions published by the UK's Office for National Statistics and Department of Health.

Results

Model parameters controlling for underreporting indicate that survey reports are plausible for abortions occurring before the age of 20 years. Beyond that age, the model shows a fast increasing propensity to underreport abortions depending on the age at which they occurred. Underreporting also appears to be higher in NATSAL III. The study produces corrected estimates of the overall lifetime prevalence of an abortion in England and Wales, which is higher than previously thought.

Conclusion/Implications

Joint modelling of survey and administrative data can provide robust statistics, while reducing the need for record linkage where it is not feasible or acceptable. This approach is relevant in other contexts to correct the bias of particular population datasets, when audit data exist (e.g. underascertained diagnoses/causes of death).

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