CORE
Metadata, citation and similar papers at core.ac.uk
Provided by IUPUIScholarWorks

Study of sexual partner accrual patterns among adolescent women via Generalized Additive Mixed Models

Jaroslaw Harezlak, Fei He, J. Dennis Fortenberry
Indiana University School of Medicine, Indianapolis, IN USA
Indiana University Fairbanks School of Public Health, Indianapolis, IN USA

The number of lifetime partners is a consistently identified epidemiological risk factor for sexually transmitted infections (STIs). Higher rate of partner accrual during adolescence has been associated with increased STI rates among adolescent women. To study sexual partner accrual pattern among adolescent females, we applied generalized additive mixed models (GAMM) to the data obtained from a longitudinal STI study. GAMM regression components included a bivariate function enabling separation of cohort ("age at study entry") and longitudinal ("follow-up years") effects on partner accrual while the correlation was accounted for by the subject-specific random components. Longitudinal effect partial derivative was used to estimate within-subject rates of partner accrual and their standard errors. The results show that slowing of partner accrual depends more on the prior sexual experience and less on the females' chronological age. Our modeling approach combining the GAMM flexibility and the time covariates' of interest definition enabled clear differentiation between the cohort (chronological age) and longitudinal (follow-up time) effects, thus providing the estimates of both between-subject differences and within-subject trajectories of partner accrual.