



Migraine in Adolescents: Association With Socioeconomic Status and Family History

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BACKGROUND

In adults, migraine prevalence varies inversely with household income and education. The reasons for this inverse relationship have been the subject of much debate; with two major alternative explanations. According to the social causation hypothesis, factors associated with low socioeconomic status act to increase disease prevalence. The social selection hypothesis implies that migraine interferes with educational and occupational functioning, leading to low income.

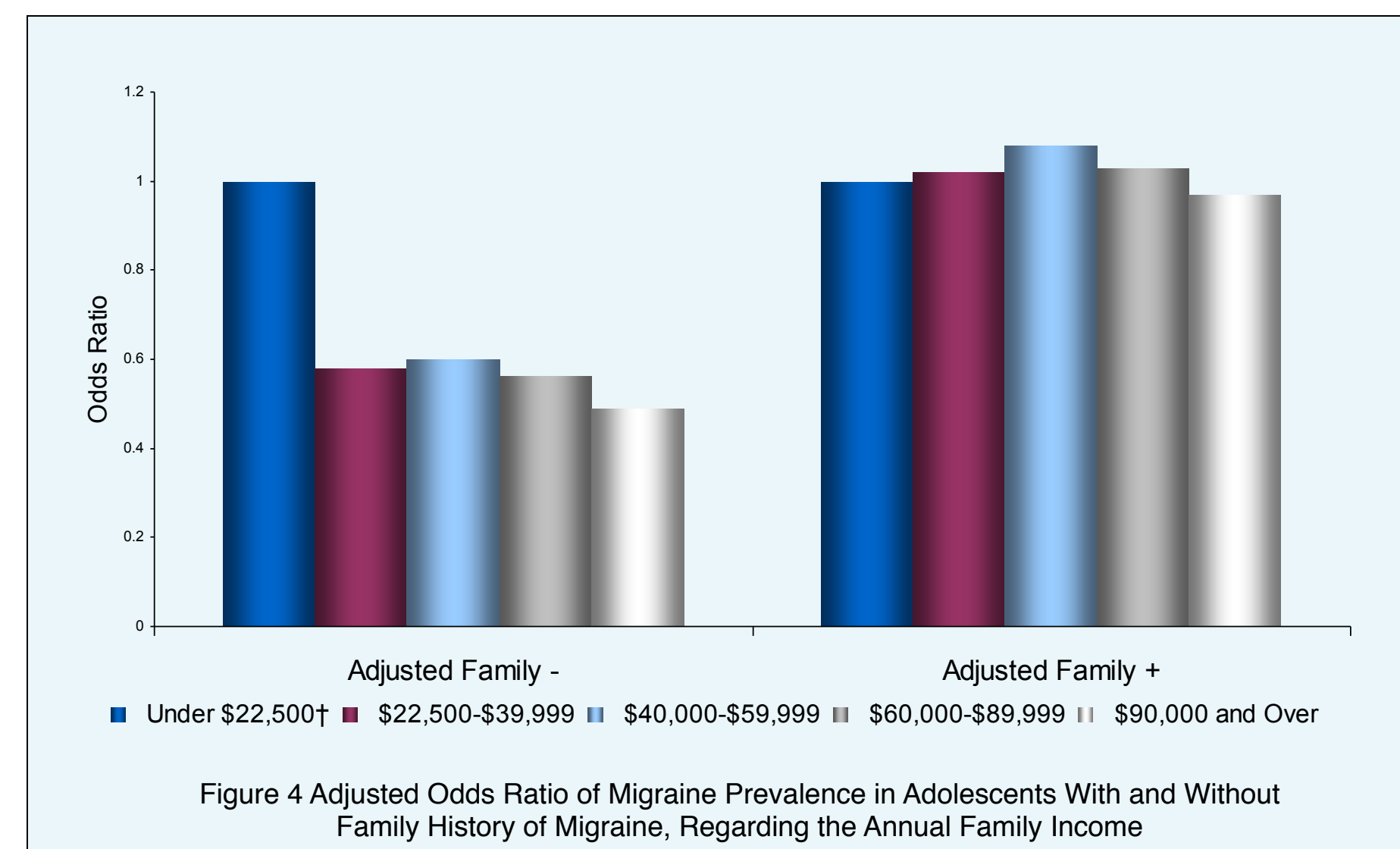
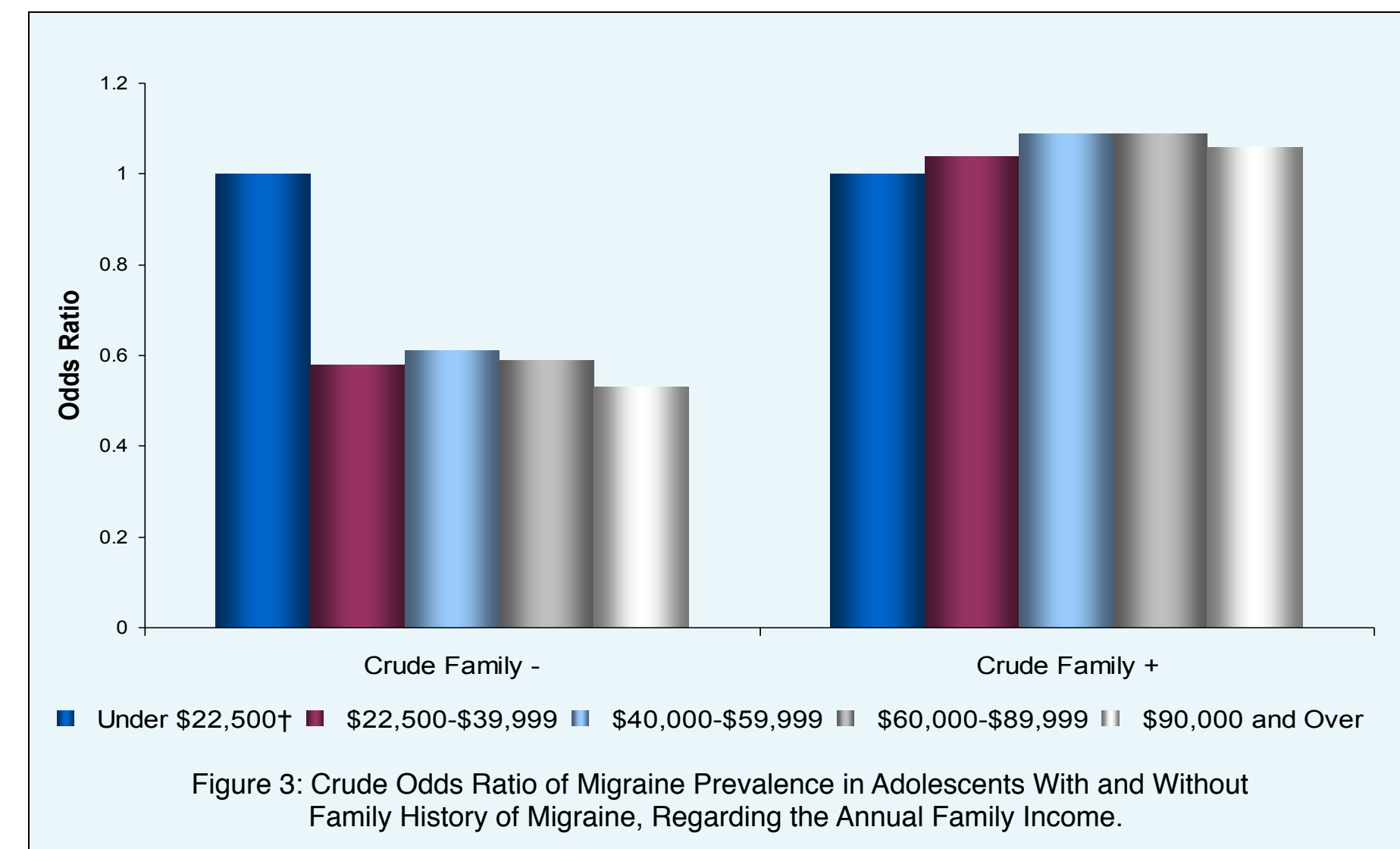
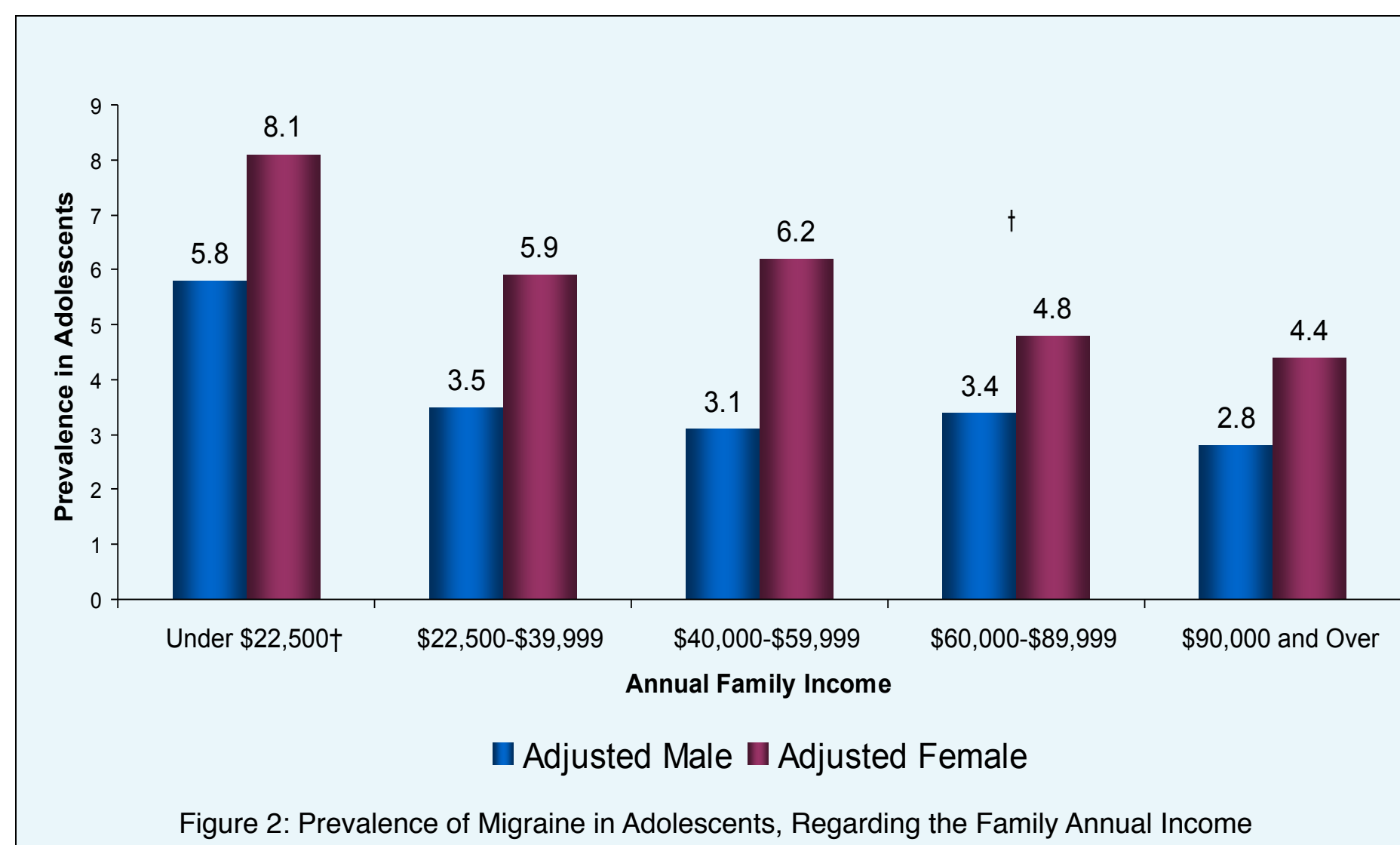
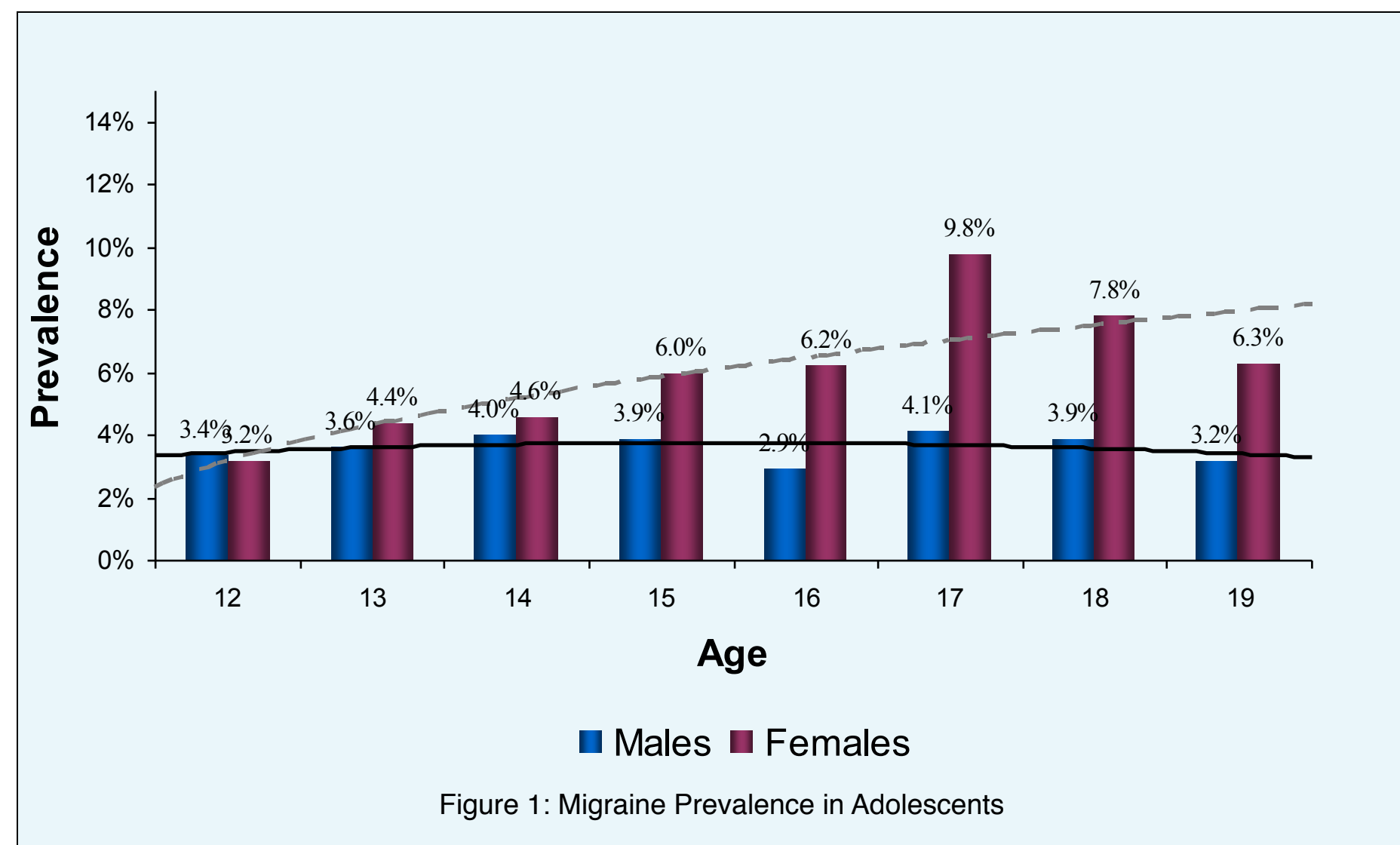
OBJECTIVE

As adolescents make, at most, modest contributions to household income, herein we assessed the epidemiology of migraine in a large adolescent population. We use this sample to test the social causation and social selection hypotheses.

METHODS

A validated, self-administered headache questionnaire was mailed to 120,000 households representative of the U.S. population. Migraineurs were identified according to recommendations from the second edition of the International Classification of Headache Disorders. We calculated sex-specific prevalence estimates of migraine in adolescents derived by age, race, urban versus rural residence, household income, and region of the country. GLIM Poisson regression (log-linear models) was used to model sex- and age-specific prevalence by income and to derive adjusted prevalence ratios.

RESULTS



Among the 120,000 households we contacted, there were 32,015 household members ranging in age from 12-19 years. Surveys were returned from 18,714 of them (58.4% overall response rate). Figure 1 displays the prevalence of migraine, stratified by age and gender, and adjusted for race, household income, region of the country, regional population density, and household size. Figure 2 displays the overall prevalence of migraine in adolescents by family income.

There was a strong, consistent, statistically significant inverse relationship between migraine prevalence and household income in both males and females after adjusting for covariates (Figure 2); this result was predicted by the social causation hypothesis.

Because migraine runs in families, we were concerned that this inverse relationship might reflect parental migraine. Accordingly, we stratified for a positive parental history of migraine. When parental family history is positive the relationship between migraine prevalence and income is no longer significant. However, when parental history is negative, the inverse relationship between prevalence of migraine and family income remains significantly positive both in crude analysis (Figure 3) and after adjusting for demographics and use of acute and preventive medication (Figure 4).

CONCLUSION

In adolescents without a strong biological predisposition (without parental history of migraine), low household income is associated with increasing migraine prevalence supporting the social causation theory in this subgroup. In the presence of a positive family history, household income, and by inference those social factors associated with it, do not determine migraine prevalence.