Can the variation in smoking prevalence between sexual identity groups be explained by individual characteristics?

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INTRODUCTION

Smoking is a modifiable risk factor and effective tobacco control measures can reduce the prevalence of smoking in the population. Research studies have investigated the prevalence of smoking among lesbian, gay and bisexual (LGB) people, generally finding rates among LGB individuals to be higher than those in the general population[1,2,3].

This is supported by the latest data from the Annual Population Survey (APS)[4,5] which shows in 2017 in England smoking prevalence in heterosexual respondents was 15.6%, compared with 22.4% for gay/lesbian respondents and 24.0% for bisexual respondents (see Figure 1).

However, little is known whether elevated prevalence of smoking among LGB individuals in England should be targeted via traditional prevention programmes or whether separate LGB specific prevention programmes are needed.

The Annual Population Survey (APS) is a large continuous household survey run by the Office for National Statistics, questioning around 320,000 people (160,000 in England) per year. The range of questions in the survey allows us to examine if the observed differences in smoking prevalence can be attributed to the personal characteristics of those in each group, or if sexual identity remains a strong predictor of smoking prevalence.

In this research we aimed to investigate the prevalence of smoking among LGB people in England and whether the elevated risk can be explained by traditional correlates of smoking (age, sex, ethnicity, occupation and housing status).
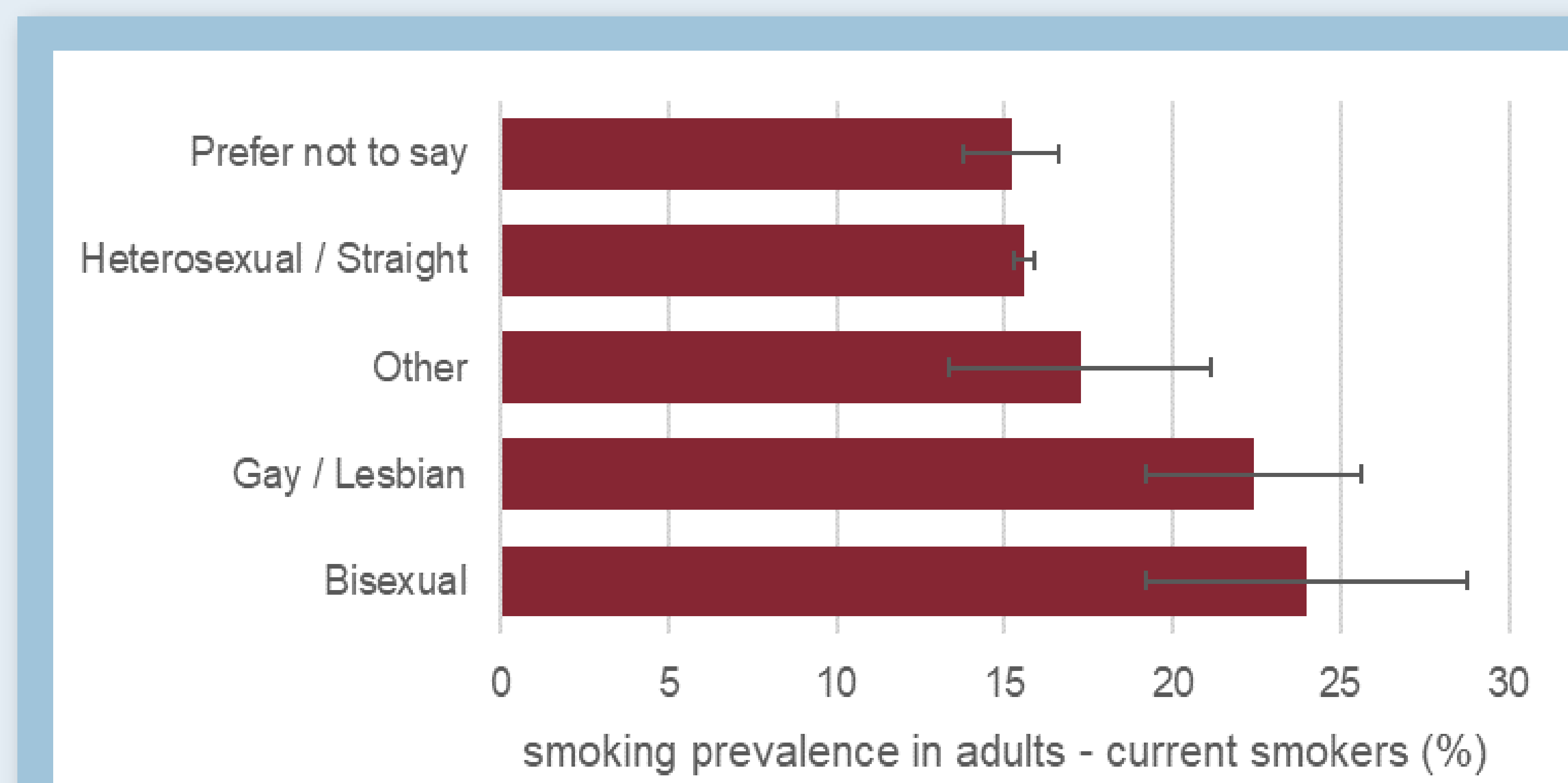

Figure. 1: smoking prevalence in adults (18+) - current smokers (%) in England, by sexual identity – Annual Population Survey 2017

METHODS

We analysed responses to the question 'Do you smoke cigarettes at all nowadays?' from the Annual Population Survey 2017 for England residents aged 18-64 years, with a response of 'yes' classified as a current smoker and 'no' as a non-smoker.

We grouped the respondents by their self-reported sexual identity and applied the sexual identity weighting to the data (sidwt17). Respondents were excluded if there was no valid response for either smoking status (cigsmk16) or sexual identity (sidv). After exclusions 73,775 respondents were included in the analysis.

We used simple logistic regression to explore the extent of the differences between LGB groups using the largest group (heterosexual) as the reference (odds ratio = 1.00).

Each respondent's age (age), ethnicity (ethukeul), socio-economic group (NSECMJ10) and housing status (ten1) were also extracted from the dataset. For the purposes of our analysis we used 10-year age bands (18-24, 25-34…55-64), broad ethnic groups (White, Mixed, Asian, Black, Chinese, Other), the four main socio-economic groups (managerial and professional, intermediate, routine and manual, long-term unemployed/never worked) and classified people's housing status as renting or owning their own home.

We then used multiple logistic regression to explore if these characteristics of the people in different LGB groups account for any of the difference in smoking rates between them.

RESULTS

Compared with the heterosexual/straight group, both gay/lesbian and bisexual groups had higher odds of being a smoker (OR 1.39 95%CI 1.15-1.67, and OR 1.59 95%CI 1.21-2.08 respectively).

Differences were seen between men and women, with lesbian women having higher odds of being a smoker compared with heterosexual women (Figure 3; unadjusted OR 1.75 95%CI 1.34-2.29) whereas gay men had no significant difference in the odds of being a smoker compared to heterosexual men (Figure 2; unadjusted OR 1.18 95%CI 0.91-1.52).

Bisexual men and women had higher odds of smoking than heterosexual men and women (OR 1.74 95%CI 1.09-2.80 for men and OR 1.54 95%CI 1.12-2.13).

When controlling for the demographic characteristics included in the model, the gap in smoking prevalence between heterosexual/straight and gay/lesbian people remained the same (OR 1.38 95%CI 1.13-1.67). The results also showed that the differences between men and women remained when comparing gay/lesbian respondents with their heterosexual counterparts (OR 1.21 95%CI 0.93-1.58 for men and OR 1.69 95%CI 1.27-2.25 for women).

For both bisexual men and women the difference in the odds of smoking compared to the heterosexual/straight group was somewhat explained by the other characteristics and became not significant once these were accounted for (OR 1.55 95%CI 0.97-2.48 for men and OR 1.39 95%CI 0.98-1.97).
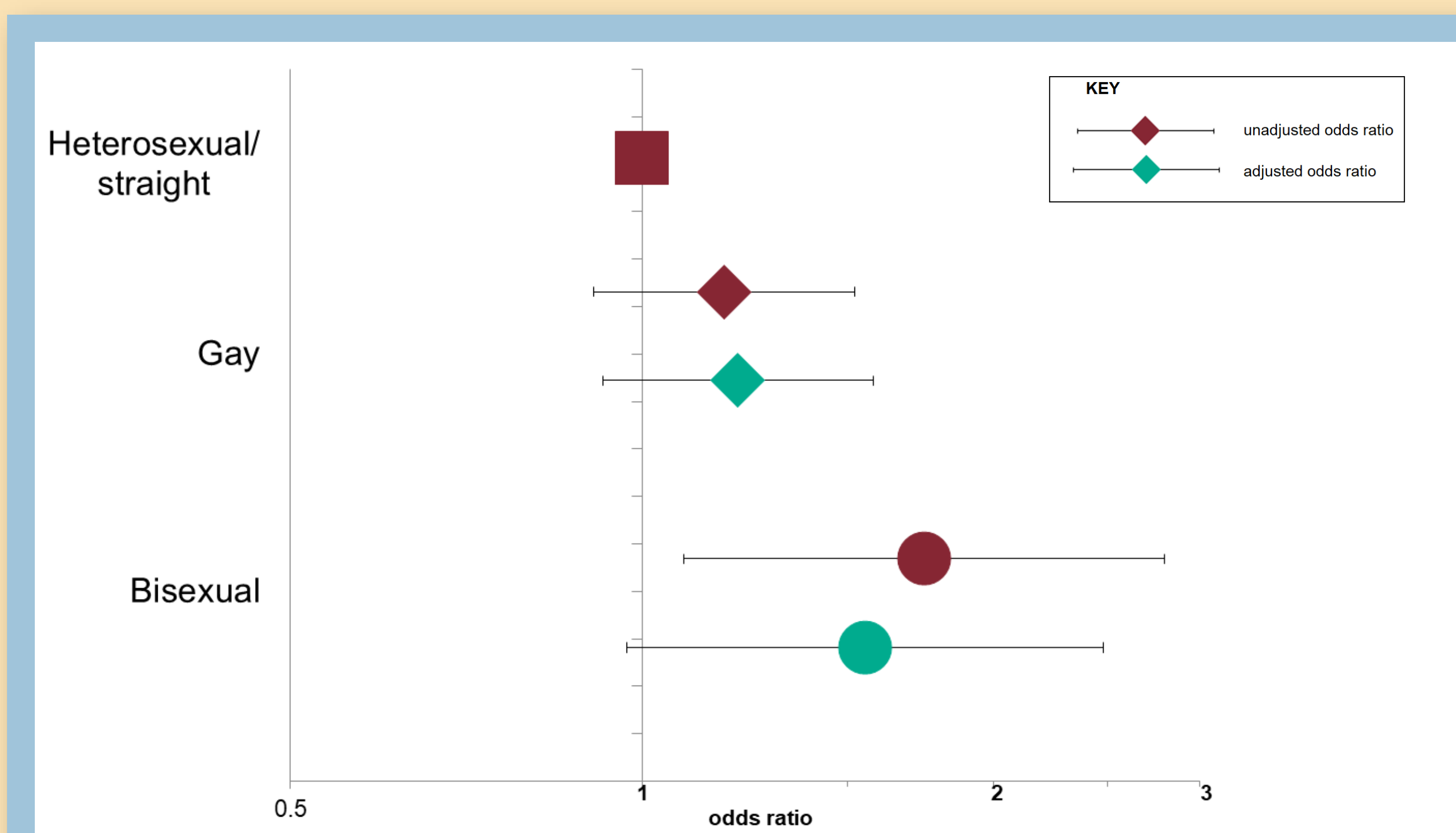

Figure. 2 Odds of smoking in **men** by sexual identity – unadjusted and adjusted for age, ethnicity, socio-economic group and housing status, England 2017
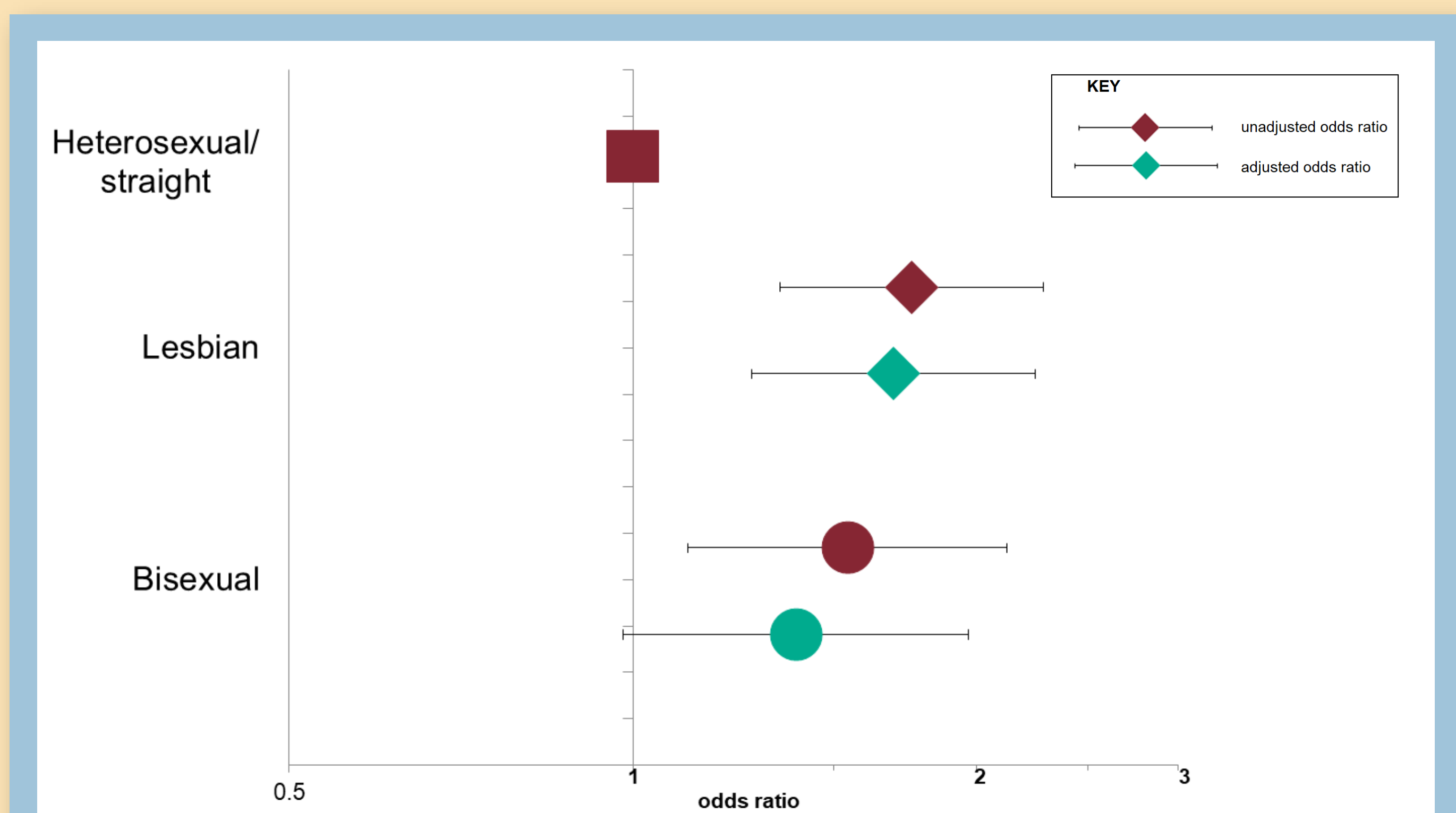

Figure. 3 Odds of smoking in **women** by sexual identity – unadjusted and adjusted for age, ethnicity, socio-economic group and housing status, England 2017

DISCUSSION

Smoking is the biggest single cause of preventable death and ill-health within England[6], accounting for 1 in 6 of all deaths in England, and around 5.5% of the NHS budget.

The tobacco control plan for England (2017)[7] focuses on "eliminating health inequalities through targeting those populations where smoking rates remain high" and includes the LGB community in this list of populations.

While some of the difference between the rates of current smokers across LGB groups can be explained by the personal characteristics of the respondents in each group, some variation remains after accounting for them, highlighting an important health inequity in England.

Further analysis could include other characteristics known to show variation in smoking prevalence and interactions between variables (for example age and sex or ethnicity and sex) in order to explore the variation further.

CONCLUSIONS

- Individual characteristics can somewhat explain the differences in smoking prevalence between sexual identity groups

- There are differences seen in results for men and women with greater difference between LGB groups in women

- Gay men do not have significantly higher odds of smoking than heterosexual men

- The higher odds of lesbian women being smokers is not accounted for by the other factors we explored

- Factors such as age, ethnicity, socioeconomic group and housing status account for the differences between bisexual and heterosexual respondents in both men and women

- The results suggest that we may not naturally reduce prevalence in these groups by targeting people with specific socio-economic characteristics and therefore some targeted interventions may be necessary to reduce smoking prevalence in LGB people

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