Factors associated with consenting to health record linkage in the Scottish Health Surveys
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Background
Cross-sectional survey data can be enhanced by linking to routine administrative health data. This effectively creates a longitudinal cohort with no additional burden to survey respondents. In the Scottish Health Survey (SHeS), informed consent from respondents is a pre-requisite for subsequent record linkage to hospitalisation and mortality data. If consent levels vary by socio-demographic or health related factors this may be a source of selection bias. We investigate if associations exist between these factors and consent to linkage.

Methods
Data from 52,340 individuals aged 25–74 years recruited to the SHeS survey between 1995 and 2013 were analysed. Logistic regression models were used to estimate odds ratios (ORs) for consent to linkage. Various socio-demographic and health factors were modelled as explanatory variables to assess their association with consent.

Results
Overall, 89% (range: 86% in 2009 to 93% in 1995) of respondents consented to record linkage. The likelihood of consenting was significantly higher (p-values < 0.001) among those of younger ages, higher social class, non-single marital status, white ethnicity, non-smoking status and higher body mass index, after adjustment for socio-demographic factors. After adjusting for all health and socio-demographic variables, only ethnicity remained significantly associated with granting consent; OR for non-white (N = 838, consent = 78%) compared to white 0.49 (95% confidence interval 0.41-0.59).

Conclusions
There is minimal association between socio-demographic and health variables and granting consent to record linkage in these large national surveys. These findings provide reassurance that selection bias arising from non-consent is minimal and gives confidence in the validity of linked survey data study findings. The only exception is the lower consent levels among non-white ethnic minority groups; more effort must be made to gain trust and maximise consent levels amongst this sub-group.

Key messages
● Selection bias from non-consent to health record linkage is minimal in the Scottish Health Surveys
● More effort is needed to gain trust and maximise consent amongst non-white ethnic groups