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**A survey of English teens' sexual experience and  
preferences for school based sex education**

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**Abstract:**

The rates of sexually transmitted infections (STIs) and teenage pregnancy amongst the under 16s are causing increasing concern. There is limited evidence about the sexual behaviour and sex education preferences of this age group, especially of those from Black and Minority Ethnic (BME) groups. This study aimed to provide data on early heterosexual risk behaviour, and to examine preferences for the content and delivery of Sex and Relationships Education (SRE), across ethnicity, gender and school year to inform priority setting and sex education strategies. A cross-sectional study of 3334 13 to 17 year olds from ten English urban and suburban secondary schools was conducted. Multivariate analysis was performed to examine the independent effect of demographic variables on sexual experience and preferences for sex education. A number of important differences in the sexual experience and condom use of males and females across the ethnic groups were identified. Differences in preferences for the content and delivery of sex education were also identified, particularly between male and female pupils. The findings indicate the potential for quite wide variation in sexual experience and preferences within school classrooms. The challenge for educators is therefore to develop SRE curricula that are inclusive within the constraints of school teaching.

Word count = 202/200

## **Introduction**

Within the UK the rates of sexually transmitted infection (STI) and unwanted teenage pregnancy are causing increasing concern because of the long-term impact on fertility and health (Department for Children, Schools and Families (DCSF) 2010; Medical Foundation for Aids and Sexual Health (MedFASH) 2008). The latest government statistics show that young people under 16 years of age are becoming increasingly burdened by STIs. Over the past ten years for example, new episodes of uncomplicated chlamydia have increased by 100% and 134% respectively amongst under-16 year old girls and boys (Health Protection Agency 2009). Over the same period, whilst the rate of under-18 conceptions has fallen steadily, the rate of under-16s conceptions has remained fairly static, with provisional 2008 figures putting the figure at 7.6 per 1000 for England and Wales (Office for National Statistics, 2010).

Teenage pregnancy can adversely affect the health of both mother and child, and increases the likelihood that they will each live in long-term poverty (DCSF 2010). If left untreated, STIs can cause cervical cancer, pelvic inflammatory disease (PID), ectopic pregnancy, infertility and congenital complications (Simms and Stephenson 2000). The scale of these problems combined with the long-term health and social consequences led the last UK government to issue the National Teenage Pregnancy Strategy (Social Exclusion Unit [SEU] 1999) and The National Strategy for Sexual Health and HIV (Department of Health [DoH] 2001) both of which have targets to reduce incidence.

There is compelling evidence linking teenage pregnancy and a higher prevalence of STIs amongst young men and women, with experience of sexual intercourse before the age of 16 years (Tripp and Viner 2005; Wellings et al. 2001). Despite this, there is limited evidence about the sexual behaviour of under-16s. Large-scale behavioural surveys examining the prevalence of sexual behaviour have focussed predominantly on adult populations (e.g. Johnson et al. 2001; Fenton et al. 2005), or have used retrospective data (e.g. Wellings et al. 2001) and therefore subject

to the biases of mid- to long-term recall (Abramson 1992). Lack of evidence on the sexual behaviour of under-16 year olds in particular is likely due to the ethical and pragmatic challenges of collecting data on what is perceived to be a sensitive subject. Notable exceptions include UK studies by Wight and Abraham (2000) and Henderson et al. (2002) both of which included a sample of 13 to 14 year olds. Further large-scale studies of the sexual behaviour are needed for this age group in order to better define and understand the scale and characteristics of the problem.

Evidence suggests that Black and Minority Ethnic (BME) groups are disproportionately burdened by sexual ill-health (Fenton and Hughes 2003; Tripp and Viner 2005; Berthold 2001; Fenton et al. 2005; Sinha et al. 2005). Despite wide acknowledgement that there are too few studies examining ethnic variations in sexual behaviour (e.g. Fenton et al. 2005; Sinha et al. 2005; Bradby and Williams 1999; Santelli et al. 2000), the evidence base remains limited and consists largely of studies among adult BME populations (Fenton et al. 2005; Elam et al. 1999; Patel et al. 1999; Sadler et al. 2005). Even less evidence is available on the sexual behaviour of under-16s from BME groups. A recent large-scale UK cross-sectional study examining the sexual risk behaviour of an ethnically diverse sample of 15 to 18 year olds by gender (Coleman and Testa 2007a) goes some way to address this. This study found that Black males and White females were significantly more likely, and Asian females significantly less likely, to have had sexual intercourse prior to age 16 compared to their gender equivalents from other ethnic groups. Females were more likely than males to report ever having had sex without a condom but there was no effect of ethnicity on this measure. Although this data is an important contribution to the evidence base, the sample is restricted to participants living in one UK city.

In addition to evidence of diversity in adolescent sexual risk behaviour, studies have indicated differential preference amongst young people for the content and delivery of sex education across gender and ethnic groups. Forrest et al. (2004) in their UK survey of more than 4000 13 to 14 year olds for example, reported that girls had a significantly greater desire for more

information across almost all listed sex education topics than boys. Coleman and Testa (2007b) in their UK survey of over 3000 15 to 18 year olds, found gender and ethnic differences not only in terms of young people's preferred topics of information, but also in terms of preferred sources of delivery. Black students for example had a greater desire than other groups for information about biological and cultural issues in relation to sexual health, whereas Asian pupils had a greater desire for information about STIs and contraception. Furthermore, Asian pupils were less likely than both Black and White pupils to report the family as a preferred source of information about sex and sexual health. These large-scale studies provide useful information about the variation in sex education preferences amongst secondary school pupils. In using univariate analysis however, they do not examine the independent effects of demographic variables. The sample is also restricted to those with a minimum age of 15 years.

The recently updated Teenage Pregnancy Strategy (DCSF 2010) and The National Strategy for Sexual Health and HIV (DoH 2001) both recognize the need to improve sex education in order to raise levels of sexual health. Responding to young people's preferences for sex education is one way to do this (Lawrence et al. 2000; Measor et al. 2000; Strange et al. 2003). They also acknowledge the importance of targeting groups known to be most at risk, such as those from BME groups, in achieving their aims. This study aimed to provide data on early heterosexual risk behaviour, and to examine preferences for the content and delivery of Sex and Relationships Education (SRE), across an ethnically diverse sample of 13 to 17 year old secondary school pupils. Sexual behaviour and SRE preferences were examined across ethnicity, gender and school year to inform priority setting and sex education strategies.

## **The Study**

***Design:*** This study used a cross-sectional survey design.

**Participants:** Participants were drawn from years 9, 10 and 11 at ten English urban and suburban secondary schools situated within six Local Education Authorities (LEAs). All were mixed comprehensive community schools. No faith-based schools were included. The schools were purposively selected to reflect a range of socio-economic and ethnic profiles. Half were located in wards identified by the 2001 census as having populations living within the third Carstairs deprivation quintile but none were located in either the most or the least of the deprived wards. This distribution is less wide than in England and Wales as a whole, where approximately one fifth of the population live within each of the Carstairs deprivation quintiles (Office for National Statistics 2006). Ethnic minorities were more greatly represented in this sample (18.4%) than in the English population (9.1%) (Office for National Statistics 2005). All schools had sex education policies and age-specific, graduated programmes of Sex and Relationships Education (SRE).

**Sample:** The total sample was 3334 participants aged 13-17 years old. Demographic data is presented in table 1 below.

*Table 1 about here*

Following data collection in the first school, a single question regarding pupils' preference for single or mixed-gender education was added. For analyses relating to this question only, the sample was therefore reduced from 3334 to 2890 participants.

**Measure:** The questionnaire was based on a measure previously developed and piloted by the research team to examine sexual behaviour and attitudes. Specific questions relating to preferences for school sex education were developed using four focus groups consisting of a total of 19

participants aged 13 to 16 years (one mixed gender, one all boys and two all girls) and through consultation with local experts and year heads from the participating schools. This process generated 28 fixed-response items.

***Procedure:*** The study had multiple site research ethics committee approval. Consent for pupils' involvement was obtained via the schools by writing to all parents of the target years to explain about the study and to indicate that children could be withdrawn with the parents' prior consent. None were withdrawn. The questionnaires were distributed to participants within tutor group periods and the process supervised by two researchers. Seating was arranged to provide individual privacy. Participants were read a participant information sheet to inform them that the questionnaires were anonymous and that they could leave out any questions that they did not wish to answer or choose not to complete the questionnaire at all. Written informed consent was then obtained. Participants were provided with a list of defined terms used in the questionnaire. Completion of the questionnaires took approximately 40 minutes. A written quiz was provided for those that did not wish to take part or who finished early. Approximately 2% of pupils chose not to complete the questionnaire.

***Analysis:***

Analysis was performed in PASW Statistics 17. Frequencies were generated to provide a sample description. Chi-squared analyses were performed to compare the frequency of sexual experience across the demographic characteristics of gender, ethnicity and school year. Binary logistic regression using the enter method was performed to examine the independent effect of gender, ethnicity and school year on sexual experience and condom use. Further binary and multinomial logistic regression analyses were performed to examine the independent effect of demographic



variables and sexual experience on preferences for sex education. Survival analysis was performed to calculate a first quartile estimate of age of first sex by gender and ethnic group.

## **Results**

### ***Sexual experience***

Of those who provided data on sexual experience (n=3140), 779 (24.8%, 95% CI 23.3-26.3) reported being sexually experienced (defined as ever having had vaginal sex 'penis in vagina'). Table 2 displays the percentage of sexually experienced pupils by demographic characteristics.

*Table 2 about here*

Logistic regression was performed to investigate which factors were independently associated with sexual experience. The results are presented in Table 3.

*Table 3 about here*

Ethnicity and school year were both associated with sexual experience when other variables were controlled for, but gender was not. For significant associations, the odds of being sexually experienced for the specified category in comparison to the reference category, was examined. In comparison to White pupils, the odds of sexual experience were reduced by approximately 60% for Asian pupils and increased by approximately 50% for Black pupils. Unsurprisingly sexual experience increased across the school years with the odds of sexual experience in comparison to year nine being 2.5 times higher in year ten and 4.6 times higher in year eleven.

A multi-way frequency table was produced to identify potential interactions of interest in sexual experience (see Table 4)

*Table 4 about here*

This indicated that the effect of gender may differ across the ethnic groups. A further logistic regression analysis including the gender by ethnicity interaction term was performed to further investigate this (see Table 5).

*Table 5 about here*

Amongst White pupils, females were 20% more likely to be sexually experienced than males. Amongst Asian pupils however, the opposite was observed with females being 80% less likely to be sexually experienced than males respectively. Black females were 50% less likely to be sexually experienced than males.

### ***Age of first sexual intercourse***

Data on age of first sexual intercourse was available for 540 of the 779 sexually experienced pupils. Age of first intercourse ranged from 5 years 11 months to 16 years 2 months (SD=18.3 months). Three percent of respondents reported an age of first sexual intercourse below 10 years of age. The median age of first sex was 14 years 0 months. It is important to note that this figure is only a descriptive for sexually experienced pupils and as such does not reflect the 'true' value for this population. In other words, it provides an estimate based on the average age of first intercourse for the sub-sample of respondents who had initiated sex at the time of the study. This approach

however leads to downwardly biased estimates, ignoring respondents who delay sex beyond this point.

An alternative method for providing an estimate of age of first sex is to use survival analysis. This better reflects the sample whole and also allows confidence intervals to be generated for the estimates. Accordingly, Kaplan-Meier survival curves and log-rank tests were used to further explore differences in age of first intercourse by ethnic group and gender. An estimate of median age to first sex could not be determined for any group as only about 25% of the sample reported being sexually active, however it was possible to calculate first quartile estimates for Black and White ethnic groups. For Asian pupils, too few were sexually active to make a similar determination. Results are reported separately by gender as preliminary analyses suggested that hazards were not proportional at all times for this factor.

There was a significant difference between the likelihood of the females in each of the ethnic groups becoming sexually active ( $\chi^2_{(2)}=26.01$   $p<.001$ ), see Figure 1. At all ages, Asian females were more likely to remain sexually inexperienced with increasing age than Black or White females ( $p<.001$ ). There was no difference in risk of becoming sexually active at each age for White and Black females ( $p=.82$ ). It was estimated that 25% of White females would be sexually active by 14 years 11 months (95% CI 14:8 – 15:2) and 25% of Black females would also be sexually active by 14 years 11 months (95% CI 14:5 - 15:5).

Ethnic group differences were less pronounced for male students although still significant ( $\chi^2_{(2)}=6.46$   $p=.039$ ), see Figure 2. There was no significant difference between Black and White male students or Asian and White male students. The risk of becoming sexually active was significantly greater for Black male students than Asian male students ( $p=.02$ ). It was estimated that 25% of White male students would have reported being sexually active by age 15 years 4 months (95% CI 15:0 - 15:8) and 25% Black male students by 15 years 5 months (95% CI 13:11 –

16:11). Apparent inconsistency in these estimates is due to low numbers of Black male students within the analysis.

### *Condom use*

Of sexually experienced pupils (n=779), 46.5% reported that they did not use a condom at every sexual intercourse. Amongst this subgroup however, 23.8% reported always using a method of contraceptive, indicating that other methods such as the pill were used instead. Table 6 displays the percentage of pupils who reported consistent condom use by demographic characteristics, defined as using a condom at every sexual intercourse.

*Table 6 about here*

Logistic regression was performed to examine the independent association of demographic variables with condom use comparing those who used condoms at every sexual intercourse (consistent use) with those who did not. Due to low and zero counts in a number of cells in the frequency matrix, school year was not entered into the model. The results are presented in Table 7.

*Table 7 about here*

The data shows that ethnicity and gender are both associated with consistent condom use. In comparison to males, female pupils were about 25% less likely to have used condoms at every sexual intercourse. There was no difference in the likelihood that White and Asian pupils had used condoms at every sexual experience but Black pupils were twice as likely as White pupils to report consistent use.

A multi-way frequency table was produced to identify potential interactions of interest (see Table 8)

*Table 8 about here*

This indicated that the effect of gender may differ across the ethnic groups. A further logistic regression analysis including the gender by ethnicity interaction term was performed to further investigate this (see Table 9).

*Table 9 about here*

Amongst Black and Asian pupils, male and female pupils were equally likely to have used condoms at every sexual experience. However amongst White pupils, females were 33% less likely to be consistent condom users.

### ***Desirable sources of information on sex***

Pupils were asked to indicate sources of information on sex that they had previously received information from and also would like to receive information from. Figure 3 displays the results.

*Figure 3 about here*

Logistic regression was performed to examine the independent association of demographic variables and sexual experience with the three most popular sources of information (see Table 10).

*Table 10 about here*

This analysis showed that almost all pupils, irrespective of demographic characteristics or sexual experience, were equally likely to want information on sex from school. The only exception was that Black pupils were 30% less likely than White pupils to want information from this source. For the remaining sources, there were a few significant independent associations with predictor variables, although none with school year. Girls were about 90% more likely than boys to want information on sex from their parents. Asian pupils were 33% less likely than White pupils to want information on sex from their parents. Sexually experienced pupils were approximately 25% more likely than inexperienced pupils to want information from their parents. Girls were about 70% more likely to want information on sex from friends than were boys, and sexually experienced pupils were 60% more likely than sexually inexperienced pupils to report this also. Asian pupils were also about 70% less likely to want information on sex from friends in comparison to White pupils.

### ***Preferred structure of Sex and Relationships Education (SRE)***

Figure 4 displays the frequency with which pupils indicated that they would like various methods used to deliver sex education.

*Figure 4 about here*

Logistic regression was performed to examine the independent association of demographic variables and sexual experience with the three most popular methods (see Table 11).

*Table 11 about here*

All methods were equally popular between ethnic groups. Girls were 60% more likely than boys to want group discussion used to deliver sex education, and 70% more likely to want small group work. Girls were however more than 60% less likely to want videos used than boys. Sexually experienced pupils were over 70% more likely than sexually inexperienced pupils to report a desire for education delivered using videos but about 20% less likely to want delivery via small group work. Pupils in years 10 and 11 were both about 30% more likely to want group discussion as part of sex education than those in year 9.

Pupils were asked to indicate whether they would prefer sex education to be delivered in single-gender groups or mixed-gender groups, or to indicate if they had no preference. Of all pupils, 20.8% reported that they would prefer single-gender groups, 30.4% reported that they would prefer mixed-gender groups and 48.8% reported no preference. In order to further examine preference for gender mix within sex education lessons, multinomial logistic regression was performed entering demographic and sexual experience variables as the predictors (see Table 12).

*Table 12 about here*

With 'no preference' used as the reference category, girls were over 40% less likely than boys to express a preference for mixed-gender groups and 2.4 times more likely to prefer single-gender groups. Across the school years, pupils were as equally likely to indicate a preference for mixed-gender groups as indicate no preference. However, those in years 10 and 11 were both less likely (approximately 25% and 30% respectively) than those in year 9 to indicate a preference for single-gender education. Black and White pupils were equally likely to indicate a preference for single-gender education but Asian pupils were nearly 50% more likely than White pupils to report a preference for this. Asian pupils were as likely as White pupils to indicate a preference for mixed-gender education over no preference but Black pupils were 75% more likely to report a preference

for this. Sexually experienced pupils were over 50% more likely to report a preference for mixed-gender education, and about 30% less likely to report a preference for single-gender education, than sexually inexperienced pupils.

### ***Content of Sex and Relationships Education (SRE)***

Pupils were asked to endorse which out of a number of topics they would like more information about. The most frequently endorsed topics were sexually transmitted infections (45.7%), relationships (38.5%), contraception (34.2%), sex and the law (33.6%), and sexual abuse (31.6%). Logistic regression was used to examine the independent association of demographic variables and sexual experience with the five most popular topics (see Table 13).

*Table 13 about here*

Table 13 shows that pupils, regardless of ethnicity or sexual experience, were equally likely to express preference for information across these topics. With the exception of sex and the law where there was no association with gender, female pupils consistently expressed a greater preference than males for information across all of the topics. In comparison to male pupils, the odds of females wanting more information on STIs, relationships, contraception, and sexual abuse were increased by 1.65, 1.76, 1.74 and 2.69 respectively. The topics for which there was an association with year group were STIs, relationships and sexual abuse. For STIs, year 11 pupils were 30% more likely than year 9 pupils to want information. For relationships, year 10 pupils were 25% less likely, and year 11 pupils 30% less likely, to want information than those in year 9. Those in years 10 and 11 were both about 20% less likely to want information on sexual abuse than those in year 9.

### **Discussion**



This study aimed to examine early heterosexual risk behaviour and preferences for the content and delivery of SRE amongst secondary school pupils. Of specific interest was the relationship between these outcome variables and pupils' demographic characteristics.

### *Sexual experience and condom use*

One quarter of participants were sexually experienced with levels increasing steadily across the year groups. Approximately half of sexually experienced pupils reported inconsistent condom use, although one quarter of this subgroup reported always using an alternative form of contraception. Asian pupils were the least likely to be sexually experienced and reported levels of consistent condom use which bordered on being significantly higher than their reference group, White pupils. Asian girls were considerably less likely than Asian boys to be sexually experienced but both were equally likely to report consistent condom use. Black pupils were more likely to be sexually experienced than White pupils but were twice as likely to report using condoms consistently. Amongst Black pupils, females were less likely to be sexually experienced than males but males and females were equally likely to report consistent condom use. Amongst White pupils, females were both more likely to be sexually experienced and less likely to use condoms than their male counterparts.

The overall frequency of sexual experience and condom use observed in this study support the findings of other large-scale studies of under-16s conducted by Wight and Abraham (2000) and Henderson et al. (2002) when appropriate age comparisons are made. The findings add to and extend existing evidence in relation to sexual behaviour by gender and ethnic differences. Findings indicate that Asian pupils are at the lowest risk of under-16 teenage pregnancy and STIs due to their low levels of sexual experience combined with reasonably high consistent condom use. This is a reasonably well established finding with studies such as that by Coleman and Testa (2007a) for example, reporting the least experience of under-16 sexual experience amongst Asian males and females compared to other ethnic groups in the UK. This is also borne out in data on adult STI

incidence, with the British National Survey of Sexual Attitudes and lifestyles (NATSAL) study (Fenton et al. 2005) reporting significantly fewer Pakistani and Indian respondents having been previously diagnosed with an STI or having attended a Genito-Urinary Medicine (GUM) clinic.

Coleman and Testa (2007a) reported that under-16 sexual experience was more frequent amongst Black males and White females in their sample. This is consistent with our study which found that Black males were more likely to be sexually experienced than Black females and White females more likely to be sexually experienced than White males. Our findings also suggest that White females are at a greater risk of teenage pregnancy and STIs overall because not only are they most likely to be sexually experienced, they are also least likely to use condoms consistently.

#### *Sources of information*

Across the entire sample, school was by far the most popular source of information on sex and this popularity was largely irrespective of pupils' demography. Other popular sources were friends and parents. Females were more likely than males to report wanting information from friends, and the same was true for sexually experienced compared to inexperienced pupils. Information from this source was less popular again amongst Asian than White pupils. Parents were a much more popular source of information on sex amongst girls than boys, and also amongst sexually experienced than inexperienced, but less popular amongst Asian than White pupils. These findings support existing evidence that young people want to receive information on sex from school (Coleman and Testa 2007b, Selwyn and Powell 2007), and that friends make an important contribution to young people's knowledge base (Coleman and Testa 2007b; Powell 2008) although to a lesser extent for some groups than others. The finding that there is less desire for information from parents amongst boys and young Asians has been documented elsewhere (Coleman and Testa 2007b). Overall they highlight the importance of school as a source of information. Not only do young people want information from this source but in the absence of information from parents, it may be the only reliable and consistent form of accurate information they receive. Although

friends have value in providing opportunities for young people to discuss their thoughts and feelings in an environment in which they feel safe and comfortable, they are most likely to foster misperceptions about sex. Given the popularity of friends as a source of information, schools and parents serve an important function in challenging these.

#### *Preferred structure of sex and relationships education*

Videos, small group work, and group discussion were the most popular methods for the delivery of sex education among this sample of pupils. The methods were equally popular across all ethnic groups. Girls were more likely than boys to want group discussion and small group work. Boys were more likely than girls to express a desire for the use of videos. Preferences in mode of delivery by gender suggest that boys may prefer non-personal methods of delivery. This pattern of findings was also evidenced in preferred sources of information and has been documented elsewhere (Measor 2005). This may be because boys in particular feel threatened by methods that have the potential to expose sexual ignorance or inexperience and suggests that creating a safe environment using ground rules may be particularly important for this group.

Single-gender education was more popular with girls than boys and conversely, boys had a greater preference for mixed-gender education work. Sexually experienced pupils were more likely to indicate a preference for mixed-gender education, and accordingly less likely to indicate a preference for single-gender education, than inexperienced pupils. Black pupils were more likely to indicate a preference for mixed-gender education in comparison to White pupils. Asian pupils on the other hand, were more likely to indicate a preference for single-gender education than White pupils. Single-gender education was less popular with pupils in years ten and eleven than those in year nine. The reasons for these preferences are unknown but may reflect girls finding boys disruptive during sex education classes (Measor et al. 2000), a desire amongst some groups to better understand the perspectives of the opposite sex, and a greater comfort with sexual health topics, or lack of confidence in discussing sex and relationship issues with the opposite sex. The

latter may well be true of year nine pupils who also reported less preference for group discussion as a mode of delivery.

### *Content of sex and relationships education*

The most popular sex education topics were STIs, relationships, contraception, sex and the law, and sexual abuse. The popularity of these topics was not associated with ethnicity or sexual experience. This does not support the finding of differential preference across topics by ethnic group reported by Coleman and Testa (2007b). Like in the study by Forest et al. (2004), female pupils expressed a greater desire for information across almost all of the topics, the exception being sex and the law where there was no difference. This may be a reflection of sexual health issues traditionally being seen as the responsibility of women (UNAIDS 1997). School year was associated with some topic choices. Year ten and year eleven pupils were for example less likely than year nine pupils to want information on relationships, and year eleven pupils were more likely than year nine pupils to want information on STIs. This may reflect the increased likelihood that younger pupils are becoming interested in developing first relationships but that older pupils are further ahead in their thinking and wish to explore aspects of sexual health.

A strength of this study is its large sample allowing for the association of demographic variables with sexual experience, condom use and sex education preferences to be examined. This has made it possible to examine for example, the relationship between ethnicity and sexual experience which is often not possible due to low numbers. The sample was drawn from ten secondary schools across the UK purposively selected to provide a mix of pupils from urban and suburban locations and to reflect a range of socio-economic and ethnic profiles. Unlike the majority of studies examining teenage sexual behaviour, this study used a sample of under-16s avoiding the bias of mid to long-term recall. For this reason we can be confident that our findings on median age of first sex for example, are reasonably accurate. A further strength is that the data

has been subjected to multivariate analysis to enable identification of the independent effects of variables and the potential for interactions between them.

There are three main limitations to this study. First, the ethnic group categorisations assume homogeneity across various religious, cultural and social subgroups. The concept of ethnicity is complex, reflecting not only a tradition of common descent but also of shared culture and history which is dynamic rather than fixed. The measurement of ethnicity is however problematic and for practical purposes there is little alternative to using a selection of categories and labels. This study used the best available categorisation as developed by the Office of National Statistics and used in the decennial UK censuses. It is acknowledged that the use of ethnic categorisation, and the practice of combining categories to allow for analysis, although standard, obscures diversities contained within communities and when applied to sensitive data such as this, has the potential to reinforce negative or unhelpful stereotypes. For these reasons, care should be taken in applying these results to various subgroups within the community. A further limitation of this study is that because it is a cross-sectional study, we do not have complete information about the sexual experience of the whole sample. Only by following participants over time would it be possible to obtain data on the age of first sex for all pupils and as such calculate a 'true' median value for this. We attempted to overcome this by using survival analysis but the proportion of sexually experienced pupils in the sample reduced its potential usefulness. Finally, although examination of associations between demographic variables and both sexual behaviour and sex education preferences provides both useful and interesting findings, it does not imply causation. Whilst interpreting the results it is important to be mindful about the potential for confounding variables which have not been accounted for. It may be for example that ethnicity is acting as a proxy measure for socio-economic factors which may better account for the relationship with sexual behaviour.

## *Conclusion*

A recent review of SRE by the former government's independent steering group (DCSF 2008) reported that a key strategy in improving quality of SRE was the involvement of young people in its design. Consultation with young people helps to improve the relevance, appeal and overall acceptability of programme content and materials, as well as empowering the target group. Through this work, a large group of school pupils have voiced their preferences for the content and delivery of SRE. Their responses, combined with data on sexual experience and condom use, indicates that within a typical SRE class there is the potential for quite a wide range of preferences and sexual experience. The challenge for educators therefore is to design an SRE curriculum that can best meet the mix of needs and preferences without splitting teaching groups, which is neither practical nor ethical. It is suggested that given that it is not possible to cater for everyone all the time, the approach should be to aim for SRE that instead does not *exclude* anyone. This can be achieved through an acceptance of diversity, and the development of content and delivery that rather than adopting a blanket approach, considers the potential for difference. Inclusive SRE means incorporating a variety of teaching methods, recognizing and articulating the potential for different points of view and levels of experience, and ensuring that pupils are signposted to additional sources of information to meet differing levels of need. Inclusivity also dictates that materials and messages are culturally competent.

The findings presented and discussed in this paper may be of interest to those with a remit for developing SRE. With this in mind it is important to point out that pupils' preference for SRE do not necessarily equate with need. There are for example instances where preference is potentially linked to negative or unhelpful attitudes or beliefs that would benefit from being challenged such as boys showing less preference than girls across almost all SRE topics. Furthermore, although the individual findings may be of interest, and could be used to steer content and delivery on the basis of a school's or other group's particular demography, they should

not be used to dictate it. The intention of this paper is more to encourage educators to step back and consider the potential for diversity and to strive to best accommodate this. Areas of shared preference for content and delivery, and the most popular topics and methods, have also been highlighted which may help those wishing to develop more engaging programmes. It is encouraging that school was reported as the most popular source of information on sex and serves to add weight to growing pressure to grant SRE statutory status in UK. It is hoped that the findings reported in this paper are valuable in informing the design of sex education curricula, which although may not appeal to everyone all of the time, are as inclusive as possible within the constraints of school teaching.

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Figures 1 Kaplan-Meier survival curve indicating the probability of sexual experience with increasing age for females by ethnicity

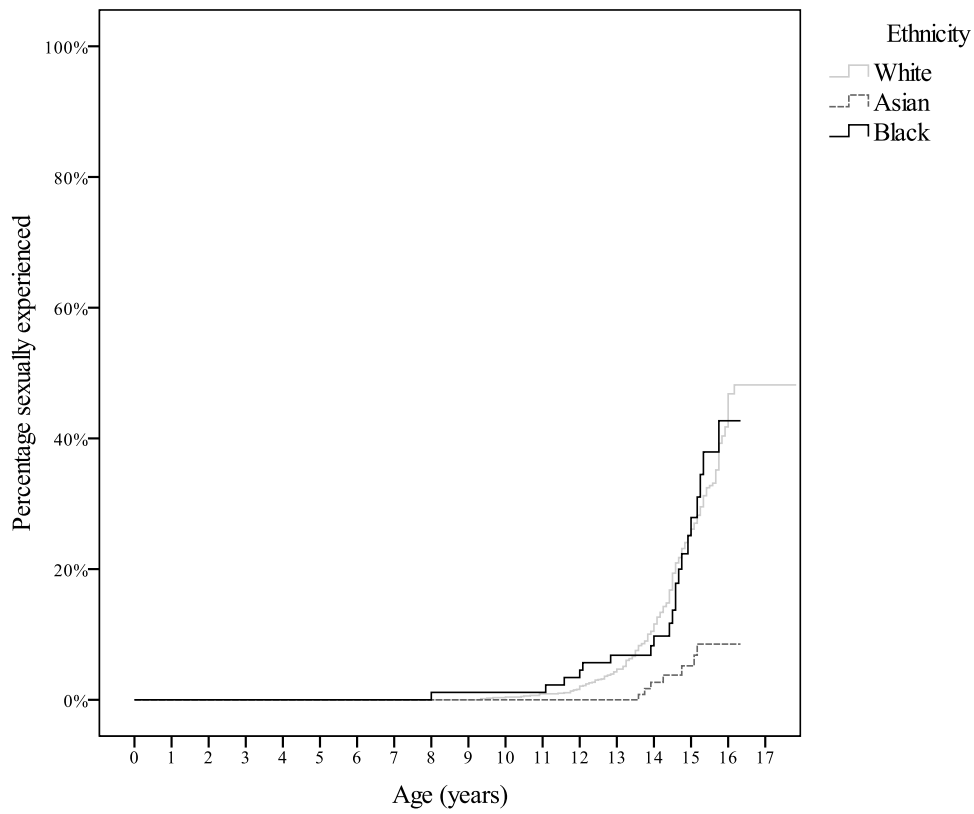


Figure 2 Kaplan-Meier survival curve indicating the probability of sexual experience with increasing age for males by ethnicity

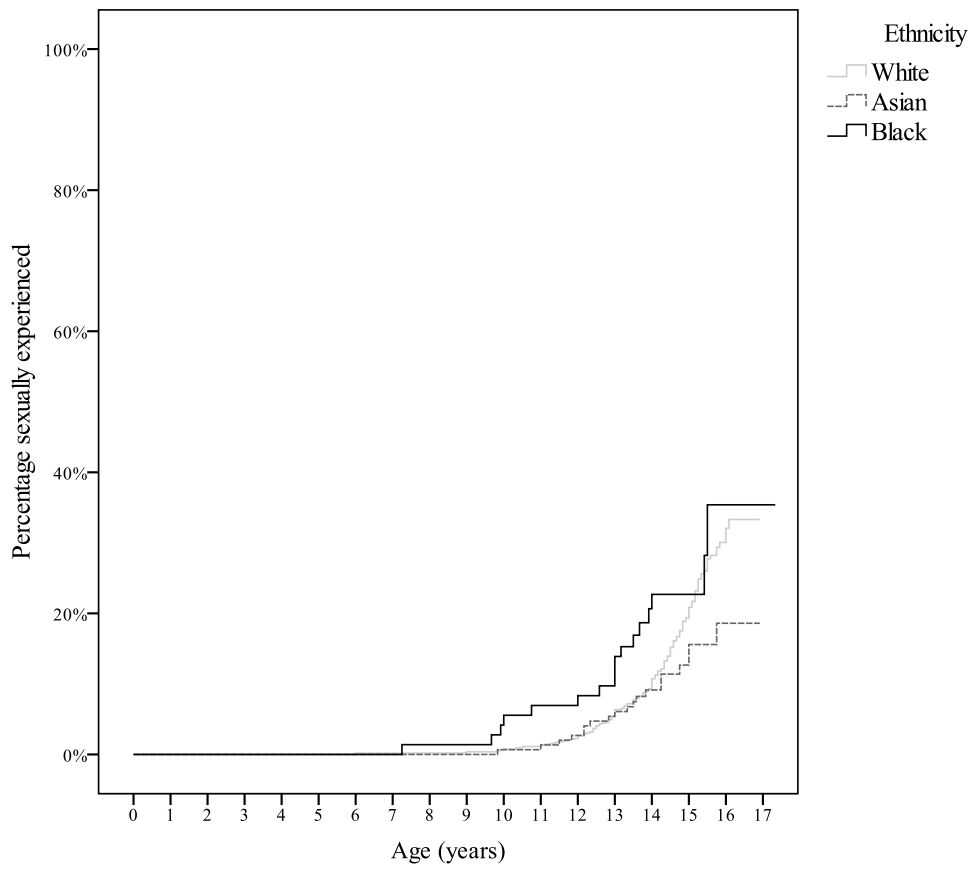


Figure 3 Bar chart to display the frequency of pupils who reported that they have received and would like information on sex from each of the sources

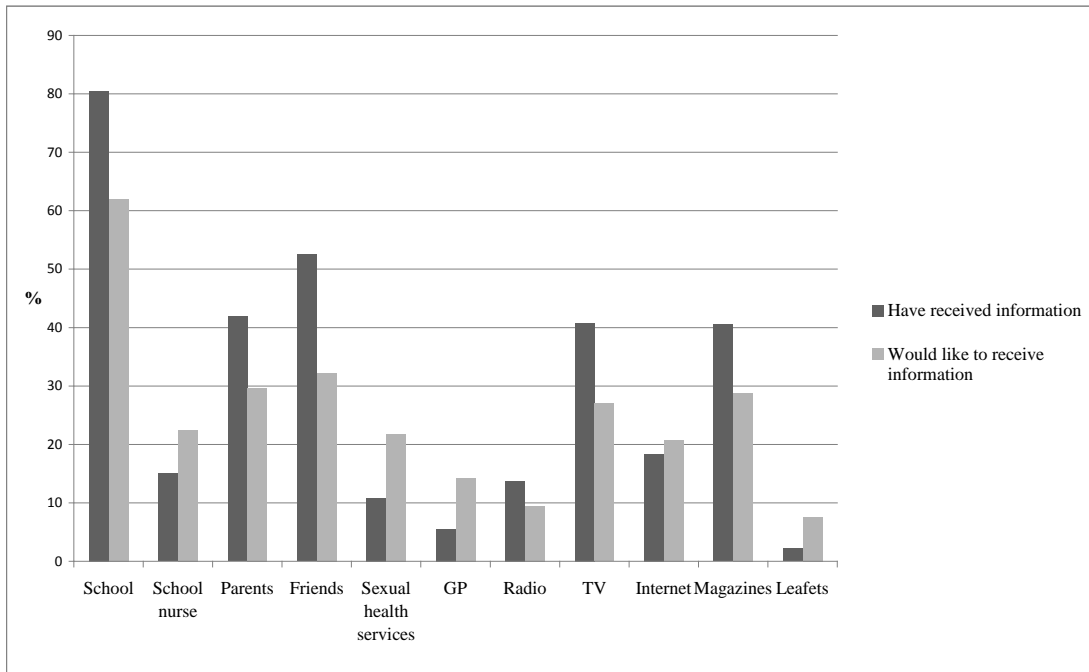
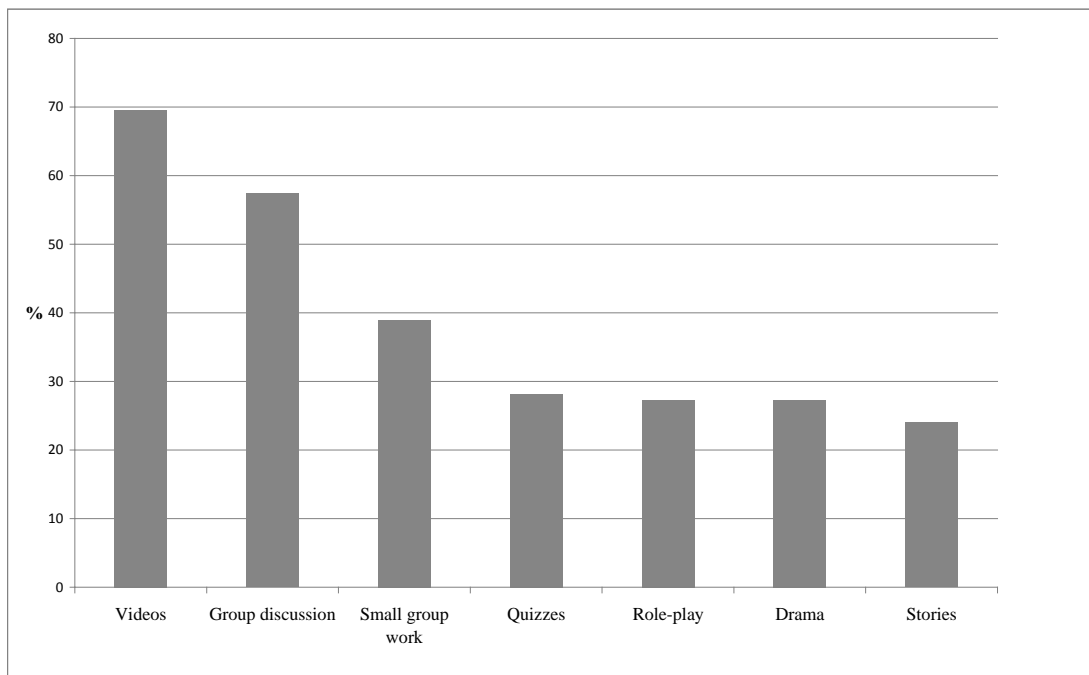


Figure 4 Bar chart to display the frequency of pupils who reported that they would like each method used to deliver sex education





Tables

Table 1 Demographic Characteristics of Participants

	Median	Range
Age	14 years 8 months	56 months

	Frequency	Percentage
Gender		
Male	1674	50.4
Female	1646	49.6
Total	3320	100.0
<i>Missing</i>	<i>14 (0.4%)</i>	-
Ethnicity		
White	2675	81.6
Asian	312	9.5
Black	173	5.3
Other	117	3.6
Total	3277	100.0
<i>Missing</i>	<i>57(1.7%)</i>	-
School Year		
Nine	1310	39.9
Ten	1099	33.4
Eleven	879	26.7
Total	3288	100.0
<i>Missing</i>	<i>46 (1.4%)</i>	-

Table 2 Frequencies by demographic characteristics for reporting of sexual experience

	% of sexually experienced (95% CI)	Chi-squared (p)
Gender		0.5 (0.509),
Male	24.3 (22.2-26.4)	n=3136
Female	25.3 (23.2-27.4)	
Ethnicity		29.2 (<0.001),
Asian	11.4 (7.9-14.9)	n=3108
Black	35.8 (28.4-43.2)	
White	25.6 (23.9-27.3)	
School year		194.0 (<0.001),
Nine	12.7 (10.8-14.6)	n=3067
Ten	27.2 (25.1-29.9)	
Eleven	39.5 (36.2-42.8)	

Table 3 Logistic regression analyses to predict sexual experience

	Odds ratio	95% confidence interval	p value	Model
				$X^2=232.52$
				n=3034
				df=5, p<0.001
				Nagelkerke R <sup>2</sup> =0.11
Gender				
Male	1.00			
Female	1.07	0.90-1.27	0.46	
Ethnicity				
White	1.00			
Asian	0.43	0.31-0.60	<0.001	
Black	1.51	1.09-2.09	0.01	
School year				
Nine	1.00			
Ten	2.54	2.04-3.17	<0.001	
Eleven	4.60	3.69-5.73	<0.001	

Table 4 Multi-way frequency table for sexual experience by demographic variables

Ethnicity	Gender	School year	n sexually experienced	% sexually experienced
White	Male	9	58	11.9
		10	105	25.2
		11	121	38.9
	Female	9	71	13.9
		10	131	28.9
		11	156	46.6
Asian	Male	9	8	12.1
		10	16	32.0
		11	13	21.0
	Female	9	1	1.9
		10	4	8.9
		11	4	8.3
Black	Male	9	10	24.4
		10	12	44.4
		11	17	54.8
	Female	9	7	16.7
		10	7	31.8
		11	13	40.6

Table 5 Logistic regression model to predict sexual experience including ethnicity by gender interaction term

		Odds ratio	95% confidence interval	p value	Model
White	Male	1.00			Model: $X^2=53.90$ n=3064 df=5, p<0.001 Nagelkerke $R^2=0.03$
	Female	1.24	1.03-1.48	0.02	
Asian	Male	1.00			
	Female	0.20	0.09-0.45	<0.001	
Black	Male	1.00			
	Female	0.50	0.27-0.93	0.03	

Table 6 Frequencies by demographic characteristics for reporting of consistent condom use

	% reporting consistent condom use (95% CI)	Chi-square (p)
Gender		4.77 (<0.05),
Male	57.7 (54.2-61.2)	n=732
Female	49.6 (46.1-53.1)	
Ethnicity		10.86 (<0.01),
Asian	69.0 (65.8-72.3)	n=715
Black	68.3 (65.0-71.6)	
White	51.1 (47.6-54.6)	
School year		8.23 (<0.05),
Nine	64.3 (60.9-67.7)	n=725
Ten	52.4 (48.9-55.9)	
Eleven	50.0 (46.5-53.5)	

Table 7 Logistic regression analyses to predict consistent condom use

	Odds ratio	95% confidence interval	p value	Model
Gender				$X^2=14.83$
Male	1.00			n=715
Female	0.74	0.55-1.01	0.06	df=3, p<0.01
Ethnicity				Nagelkerke $R^2=0.03$
White	1.00			
Asian	1.93	0.98-3.82	0.06	
Black	1.99	1.12-3.51	0.02	

Table 8 Multi-way frequency table for consistent condom use by gender and ethnicity

Ethnicity	Gender	n used condoms consistently	% used condoms consistently
White	Male	151	56.8
	Female	162	46.7
Asian	Male	22	66.7
	Female	7	77.8
Black	Male	22	62.9
	Female	19	76.0



Table 9 Logistic regression model to predict consistent condom use including ethnicity by gender interaction term

		Odds ratio	95% confidence interval	p value	Model
White	Male	1.00			Model: $X^2=18.90$ n=715 df=5, p<0.01 Nagelkerke $R^2=0.03$
	Female	0.67	0.48-0.92	0.01	
Asian	Male	1.00			
	Female	2.62	0.45-15.25	0.28	
Black	Male	1.00			
	Female	2.81	0.85-9.22	0.09	

Table 10 Logistic regression models to predict preference for source of information on sex by demographic variables and sexual experience

	<b>School</b>			<b>Parents</b>			<b>Friends</b>		
Total % who would like information from this source	62.0			29.7			32.2		
	OR	95% CI	p value	OR	95% CI	p value	OR	95% CI	p value
Male	1.00			1.00			1.00		
Female	1.15	0.99-1.34	0.07	1.91	1.62-2.25	<0.001	1.68	1.44-1.97	<0.001
White	1.00			1.00			1.00		
Asian	1.02	0.80-1.31	0.86	0.47	0.34-0.64	<0.001	0.67	0.51-0.88	<0.01
Black	0.70	0.52-0.95	0.02	0.99	0.71-1.38	0.98	0.78	0.56-1.09	0.14
Sexually inexperienced	1.00			1.00			1.00		
Sexually experienced	0.85	0.71-1.01	0.07	1.24	1.02-1.49	0.03	1.40	1.16-1.68	<0.001
Year 9	1.00			1.00			1.00		
Year 10	0.96	0.80-1.15	0.62	0.86	0.71-1.04	0.12	1.09	0.91-1.32	0.35
Year 11	0.85	0.70-1.03	0.11	0.93	0.76-1.14	0.49	1.01	0.82-1.24	0.95
Model	X <sup>2</sup> =17.24, n=2892 df=6, p<0.01 Nagelkerke R <sup>2</sup> =0.01			X <sup>2</sup> =99.40, n=2892 df=6, p<0.001 Nagelkerke R <sup>2</sup> =0.05			X <sup>2</sup> =71.32, n=2892 df=6, p<0.001 Nagelkerke R <sup>2</sup> =0.03		

Note. OR = Odds ratio; CI=confidence interval

Table 11 Logistic regression models to predict preference for methods of sex education delivery by demographic variables and sexual experience

	<b>Videos</b>			<b>Group discussion</b>			<b>Small group work</b>		
Total % who would like this method	69.6			57.4			39.0		
	OR	95%CI	p value	OR	95%CI	p value	OR	95%CI	p value
Male	1.00			1.00			1.00		
Female	0.42	0.35-0.49	<0.001	1.61	1.39-1.86	<0.001	1.70	1.46-1.97	<0.001
White	1.00			1.00			1.00		
Asian	0.78	0.61-1.01	0.06	0.85	0.67-1.08	0.17	0.77	0.60-0.99	0.04
Black	1.17	0.83-1.66	0.36	0.79	0.58-1.06	0.12	0.66	0.48-0.91	0.01
Sexually inexperienced	1.00			1.00			1.00		
Sexually experienced	1.73	1.41-2.13	<0.001	0.92	0.77-1.09	0.35	0.78	0.65-0.93	0.01
Year 9	1.00			1.00			1.00		
Year 10	0.92	0.76-1.11	0.37	1.32	1.11-1.57	<0.01	1.20	1.00-1.43	0.05
Year 11	0.98	0.80-1.21	0.84	1.33	1.10-1.61	<0.01	1.16	0.96-1.41	0.12
Model	X <sup>2</sup> =148.38, n=2982 df=6, p<0.001 Nagelkerke R <sup>2</sup> =0.07			X <sup>2</sup> =57.81, n=2982 df=6, p<0.001 Nagelkerke R <sup>2</sup> =0.03			X <sup>2</sup> =69.49, n=2982 df=6, p<0.001 Nagelkerke R <sup>2</sup> =0.03		

Note. OR = Odds ratio; CI=confidence interval

Table 12 Multinomial logistic regression model to predict preference for same or mixed sex groups compared to no preference for the delivery of sex education by demographic variables and sexual experience

	Mixed sex groups			Same sex groups		
	OR	95% CI	p value	OR	95% CI	p value
Male	1.00			1.00		
Female	0.57	0.48-0.69	<0.001	2.36	1.90-2.93	<0.001
White	1.00			1.00		
Asian	1.30	0.93-1.82	0.12	1.47	1.03-2.11	0.04
Black	1.75	1.23-2.49	0.02	1.33	0.87-2.03	0.19
Sexually inexperienced	1.00			1.00		
Sexually experienced	1.54	1.25-1.90	<0.001	0.72	0.55-0.93	0.01
Year 9	1.00			1.00		
Year 10	0.94	0.75-1.17	0.58	0.74	0.58-0.93	0.01
Year 11	1.11	0.89-1.40	0.35	0.69	0.53-0.90	0.01
Model	$X^2=219.14$ , n=2606, df=12, p<0.001, Nagelkerke $R^2=0.09$					

Note. OR = Odds ratio; CI=confidence interval

Table 13 Logistic regression models to predict preference for topic of information on sex by demographic variables and sexual experience

	STIs			Relationships			Contraception			Sex and the law			Sexual abuse		
	OR	95%CI	p value	OR	95%CI	p value	OR	95%CI	p value	OR	95%CI	p value	OR	95%CI	p value
Male	1.00			1.00			1.00			1.00			1.00		
Female	1.65	1.42-1.92	<0.001	1.76	1.51-2.06	<0.001	1.74	1.49-2.04	<0.001	0.88	0.75-1.03		2.69**	2.27-3.18	<0.001
White	1.00			1.00			1.00			1.00			1.00		
Asian	0.84	0.66-1.08	0.17	1.21	0.94-1.54	0.14	0.96	0.74-1.24	0.74	1.29	1.01-1.65		1.07	0.82-1.39	0.63
Black	0.95	0.70-1.30	0.76	0.78	0.57-1.09	0.14	1.23	0.90-1.69	0.20	1.15	0.83-1.57		0.86	0.61-1.21	0.39
Sexually inexperienced	1.00			1.00			1.00			1.00			1.00		
Sexually experienced	1.03	0.87-1.24	0.71	0.89	0.74-1.07	0.20	1.06	0.88-1.27	0.58	1.09	0.90-1.31		1.10	0.90-1.33	0.36
Year 9	1.00			1.00			1.00			1.00			1.00		
Year 10	1.19	0.10-1.42	0.06	0.75	0.63-0.90	<0.01	1.07	0.89-1.29	0.46	0.91	0.76-1.10		0.82	0.68-0.99	0.04
Year 11	1.30	1.07-1.57	0.01	0.70	0.57-0.85	<0.001	1.01	0.82-1.23	0.95	0.93	0.76-1.14		0.79	0.64-0.98	0.03
Model	X <sup>2</sup> =55.95, n=2837 df=6, p<0.001 Nagelkerke R <sup>2</sup> =0.03			X <sup>2</sup> =76.42, n=2837 df=6, p<0.001 Nagelkerke R <sup>2</sup> =0.04			X <sup>2</sup> =52.16, n=2837 df=6, p<0.001 Nagelkerke R <sup>2</sup> =0.03			X <sup>2</sup> =8.79 df=6, p=0.185 Nagelkerke R <sup>2</sup> =0.004			X <sup>2</sup> =147.80, n=2837 df=6, p<0.001 Nagelkerke R <sup>2</sup> =0.07		

Note. OR = Odds ratio; CI=confidence interval