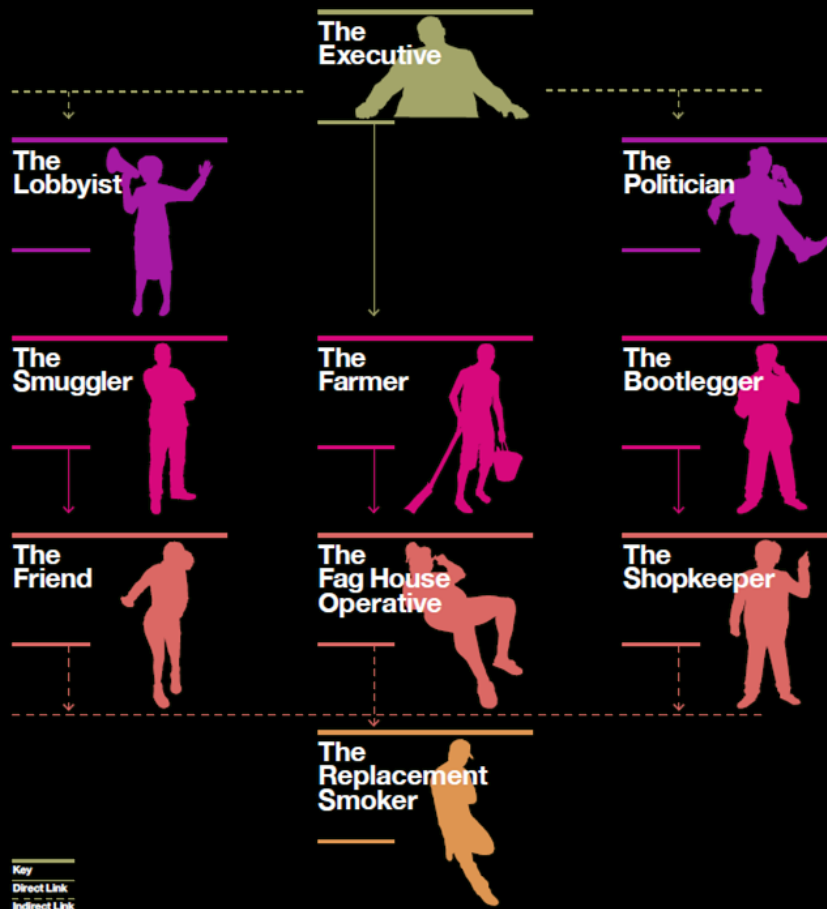


Evaluation of **The SmokeScreen**



Executive summary

The SmokeScreen, an intervention aimed at reducing the uptake of smoking in young people was evaluated in schools in Leicester. There were differences in smoking between schools, each gender, ethnic and religious groups. Beliefs about smoking however were constant across these demographic variables. Any future programme will probably fail if it only addresses knowledge of the dangers of smoking.

The SmokeScreen evaluated well with young people who found it effective and acceptable. In particular non-smokers stated it made them less likely to want to start.

A large proportion of young people completed the pledge to not become a “replacement smoker”. The reasons for completing the pledge were rarely instrumental, and seemed to reflect a genuine desire to not smoke.

Acknowledgements

NHS Leicester City funded this evaluation with match funding generously given by the Oxford Health Alliance.

The schools of Leicester supported the programme and the young people in the schools completed questionnaires voluntarily. N.B. each of the five schools in the survey of smoking beliefs, attitudes, knowledge and behaviour was asked if they wished to be anonymous in reporting of data, and none elected to. The young people were not asked for identifying information and thus are anonymous. The two schools who took part in The SmokeScreen survey had their data pooled for analysis, and thus any results are not attributed to either school (though they could be). However for this public document we have replaced school names with letters.

Foreword

By Dr Pamela Dyson, Chief Executive Officer, Oxford Health Alliance, Oxford Centre for Diabetes, Endocrinology and Metabolism, Churchill Hospital, Oxford OX3 7LJ.
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The Oxford Health Alliance (OxHA) is a UK registered charity (No 1117580) founded in 2003 and based in Oxford. It is dedicated to preventing and reducing the global impact of epidemic chronic disease by addressing the three major modifiable risk factors: tobacco use, physical inactivity and unhealthy diet. Its association with The SmokeScreen began when its action arm, Community Interventions for Health, began collaboration with De Montfort University investigating tobacco use in Leicester.

The association of smoking with many diseases has long been known, since Sir Richard Doll published his first article in 1954 reporting an increased risk of lung cancer in doctors who smoked (Doll and Hill, 1954). Over the past 60 years, smoking has been shown to greatly increase the risk of many other cancers, heart disease, stroke, infertility, stillbirth and sudden infant death syndrome (SIDS) (U.S. Department of Health and Human Services, 2004). On average, smoking reduces life expectancy by 10 years and kills 50% of those who smoke (Doll et al., 2004). Smoking is a global issue, and the World Health Organisation addressed this in 2003 by producing a Framework Convention on Tobacco Control (FCTC) that outlined six main recommendations for comprehensive tobacco control (WHO, 2003). Globally, 168 states have signed or ratified the FCTC, with only 21 states left as non-parties to the treaty.

The UK has a strong history of tobacco cessation activity; in 1998 the UK Government published its first ever White Paper on public health strategy 'Smoking Kills' (DOH, 1998), and ratified the WHO FCTC in 2004. As a result of these activities, smoking rates in the UK have decreased over the past 10 years. However, there is no room for complacency, and concerted action is required to reduce further the 8 million people in the UK who are still smoking. In 2010, the Department of Health Report 'A Smokefree Future' (HM Government, 2010) was published with the long-term aim of establishing a future where communities are free from the use of tobacco, and with short-term targets for further reductions in tobacco use, including specific targets for children and adolescents. The latest report 'Healthy Lives, Healthy People: A Tobacco Control Plan for England' spells out a comprehensive plan to reduce tobacco use in adults and young people (DOH, 2011).

Most regular smokers begin in their teens; although less than a third of adolescents who experiment with tobacco will go on to become regular smokers, over 80% of adult smokers report that they began smoking regularly before the age of 18 (Amos and Hastings, 2009). Although the proportion of children and adolescents in England who have ever tried smoking has been declining since 2000 (down to 27% of 11-15 year-olds in 2010 from a high of 53% in 1982 (NHS IC, 2011)), nevertheless each year around 340,000 children under the age of 16 experiment with smoking for the first time (DOH, 2009) and 200,000 begin smoking regularly (HM Government, 2010). In 2010, approximately 5% of 11-15 year-olds smoked regularly, and the Government aims to reduce the smoking rate among 11-15 year-olds to 1% or less and the rate among 16-17 year-olds to 8% or less by 2020 (HM Government, 2010). How will this be achieved?

To date, multiple interventions have been applied to reduce smoking including regulation, legislation, education and interventions. A combination of policy measures – raising taxes on tobacco sales, restricting sales to those aged over 18, imposing an advertising ban and prohibiting smoking in public places – and health education about the dangers of smoking together with support from the NHS for those wishing to stop smoking has proved successful. However, there is a lack of evidence for comprehensive programmes aimed at children and adolescents for either tobacco cessation or stopping them taking up smoking. The latest report from the Government has identified three main priorities for the new tobacco control strategy and the first of these is ‘To stop the inflow of young people recruited as smokers’. Each year, the tobacco industry needs to recruit over 100,000 smokers to replace those who have either given up or who have died, and the industry sees children as prime candidates for marketing. The SmokeScreen is designed specifically to address this issue and is a marketing strategy taking place in schools and that encourages children not to become ‘replacement smokers’ by raising awareness about the marketing techniques employed by the tobacco industry. The Oxford Health Alliance is pleased to have been in a position to support this campaign.

Introduction

The SmokeScreen (Stop smoking service, 2011) is an intervention designed to deter young people from starting smoking. It involves presentations, but the main components are materials deliberately aimed at the young, employing social marketing techniques. The aim is to make young people want the materials by marketing them in a similar fashion to comics, and creating characters that are more akin to gangster films such as the Godfather, than public health information. Thus the tobacco industry are depicted as villainous characters (the lobbyist, the smuggler, the friend etc.) members of a near criminal gang in a narrative that shows them manipulating the young to become “replacement smokers”.

Young people are encouraged to sign a pledge not to become replacement smokers.

This report evaluates The SmokeScreen intervention in seven secondary schools in Leicester.

Methods

Two surveys were employed, one on smoking beliefs, attitudes, knowledge and behaviour, which was completed by the same group of young people on three occasions. The second survey was completed once and evaluated young people’s views of The SmokeScreen.

The survey of beliefs, attitudes, knowledge and behaviour in five schools in Leicester (one of which has now closed, the other four range in size of roll from 700 to 1050) was conducted in the Spring term of 2010 by the Oxford Health Alliance (OxHA), as part of the Communities in Health initiative, and contained questions on smoking, diet and exercise (OxHA, 2011). Years 8 and 10 - age on 31 August (before school year) 12 and 14 respectively - were surveyed. In the spring term of 2011 The SmokeScreen was implemented in these five schools, and the smoking and demographic questions of the OxHA survey were repeated shortly after the intervention in March and repeated again after two months in May 2011. The same young people were surveyed as in the baseline, who were then in years 9 and 11. Two additional questions were inserted into these two later surveys, on religion and ethnic group. The three sets of data (named here wave 1, 2 and 3 for the baseline survey of 2010, March 2011 and May 2011 follow-up surveys respectively) were compared for any secular trends (wave 1 and 2) and effect of the intervention (wave 1 compared to wave 2 and 3, and wave 2 compared to wave 3). The rationale for this is that little change due to maturation of students is likely in a two month period, and while some beliefs could (for example) be evident immediately post intervention, it may take longer for behaviour to change. Equally there may be decay post intervention of any positive effects.

SPSS v18 was used for all statistical tests. Descriptive statistical tests were used and results shown in tables and graphs. Inferential statistical methods were used to test for differences between groups (for example boys and girls, ethnic and religious groups) and to test for trends over time. Data were not normally distributed and non-parametric tests were therefore used, chi square (χ^2) for nominal data, Mann Whitney for ordinal data with two groups and Kruskal Wallis for more than two groups with ordinal data. Binary logistic regression was used to determine the effects of demographic variables on beliefs, attitudes, knowledge and behaviour. All surveys were anonymous and thus no data were paired. Identifiers were not used to encourage more honest responses. Indeed in a pilot young people refused to fill in

postcodes as they were aware this identified them once ethnic groups, gender and age were added.

Power is dependent on the test employed and sample size, and the latter changed dependent on, for example, whether all three waves are considered (only two schools) or only baseline data are used. However the main tests employed are chi square which would, for 5 degrees of freedom (the largest number used here) be able to detect a small effect ($w=0.3$) with 1283 and medium with 143, and for Mann Whitney a small ($d=0.3$) with 290 and medium ($d=0.5$) with 106. Thus for all results presented here one would be able to at least detect a medium effect with standard power and alpha level.

Survey of smoking beliefs, attitudes, knowledge and behaviour

Timings of surveys were agreed with the schools, but combinations of staff sickness, exam preparation and the closure of School C during the project resulted in only two of the five schools having enough data on both age groups in each wave – School A and School B, see Table 1. All comparisons across waves therefore only use data from School A and School B, since smoking (see below) varies between schools and data would be skewed if comparisons were made with very different sample sizes across schools. When considering baseline data only, all schools' data are used.

Table 1: Numbers completing questionnaire

	Wave 1	%	Wave 2	%	Wave 3	%
School A	365	31.8	326	47.0	253	49.0
School B	304	26.5	187	27.0	204	39.5
School C	97	8.5	84	12.1	0	0.0
School D	186	16.2	51	7.4	0	0.0
School E	194	16.9	45	6.5	59	11.4
Total	1146	100.0	693	100.0	516	100.0

Smoking behaviour

Gender

In wave 2 45% of girls and 26% of boys had smoked at least once, 10% of boys and 20% of girls were current smokers (defined as a child who has smoked any cigarettes in the last 30 days). These differences are both significant ($\chi^2 = 26.5$ and 12.5 respectively, $df=1$, $p<0.001$ in both cases).

Mothers' education

In wave 2 there were significant differences for ever smoked ($\chi^2=13.1$ $df=5$, $p=0.023$) and current smoker ($\chi^2=15.6$, $p=0.008$), with lower rates for more highly educated mothers though mothers with less than secondary school completed had young people with very low current smoking rates.

Ethnic group

In wave 2 there were significant differences for both ever smoked and current smoker ($\chi^2=32.3$ and 24.1 , $df=7$, $p<0.001$ and 0.001) with *Whites* and *Mixed background* having higher rates than *Black* or *Asian* or *Asian British: Indian*. N.B. only ethnic groups with ten or more young people were included in this analysis, which were White British (433), Any other White background (30), White and Black Caribbean (18), White and Asian (12), Any other Mixed background (12), Black or Black British Caribbean (10), Black or Black British African (36), Asian or Asian British Indian (66) from a total of 617 for wave 2 who gave ethnic group.

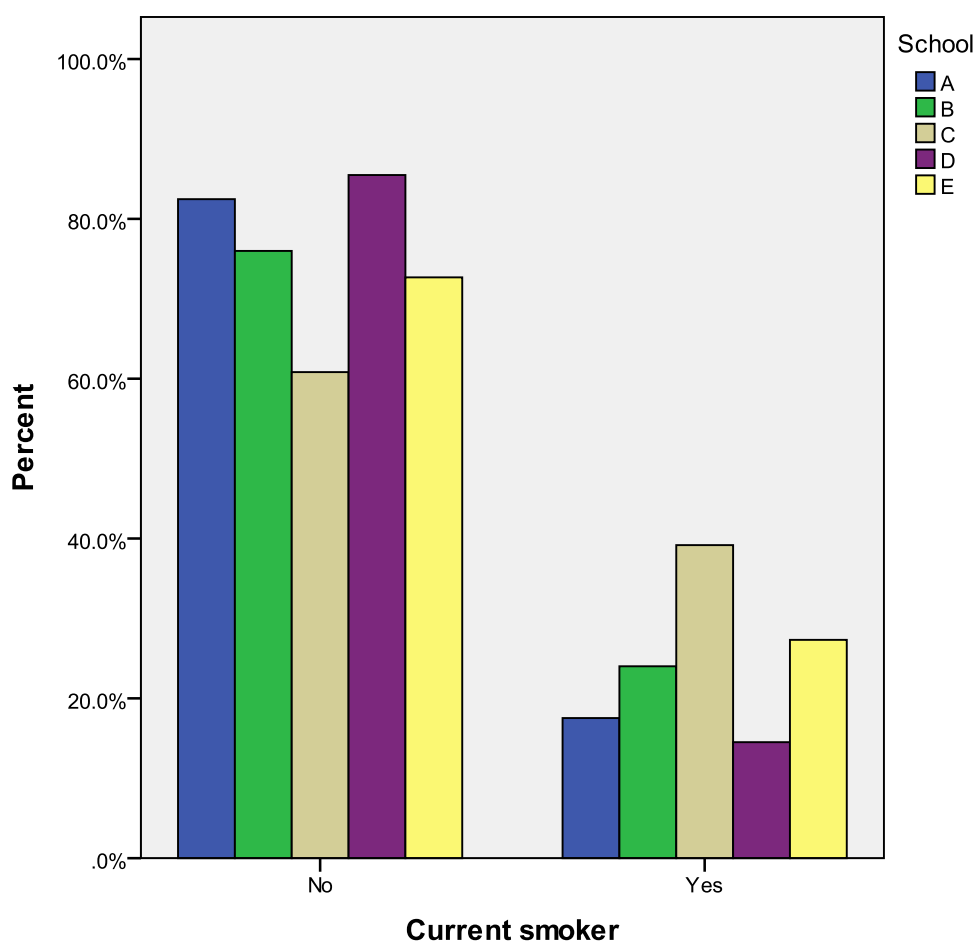
Religion

In wave 2 there were significant differences for both ever smoked and current smoker ($\chi^2=39.7$ and 23.3 , $df=5$, $p<0.001$ for both). For ever smoked *Hindus* and *Muslims* had low rates and *No religion* high. There were very high rates for current smokers for *No religion* and *Sikh* and very low rates for *Hindu*, with *Christian* and *Muslim* having intermediate figures.

School

For waves 1 and 2 there were significant differences between schools with regard to whether young people have ever smoked ($\chi^2=20.4$ and 10.0 , $df=4$, $p<0.001$ and $p=0.04$) with School C highest. For current smokers ($\chi^2=30.6$ and 13.5 , $p<0.001$ and $p=0.009$) the picture was similar, for example see the baseline in Figure 1.

Figure 1: Current smokers by school Wave 1



Overall demographic picture

Table 2 gives a breakdown by gender, ethnic group and religion. Numbers for some groups are too small to interpret with confidence (and ethnic groups that are fewer than ten in number have not been reported) but some clear pictures are seen. Most notably *White British* boys and girls smoke more than other ethnic groups and girls more than boys. There are **no** boys of Black or Asian ethnic group (n=47) who smoke, and very few girls (2 of 64). Religion and ethnic group are highly correlated, and it is likely there is an interaction such that being White and no religion (for example) makes young people more likely to be smokers. Only one Hindu of 38 smoked, who was a girl (not seen in the table as she was in a very small ethnic group – *Asian or British Asian Pakistani* with only two members), and only 2 of 26 Muslims, though 5 of 13 Sikhs smoked.

Mothers' education links with these also, as Muslims, Hindus and Sikhs were all more likely to have no formal schooling or less than secondary schooling than Christians, and virtually none had postgraduate degrees (1 Muslim, no Hindus or Sikhs, but 23 or 8.8% of Christians). N.B. this question was difficult for young people and 47.2% did not know their mother's highest level of education.

Table 2: Breakdown of current smokers by demography (wave 2)

Gender	Ethnic group	Religion	Current smoker	Total	%
Boy	White British	Not answered	2	3	66.7
		Christian	6	66	9.1
		Any other religion	0	5	0.0
		No religion	21	129	16.3
	Any other White background	Not answered	0	1	0.0
		Christian	0	11	0.0
		Any other religion	0	1	0.0
	White and Black Caribbean	Christian	1	8	12.5
		No religion	0	4	0.0
	White and Asian	Christian	0	1	0.0
		Sikh	0	1	0.0
		Any other religion	0	2	0.0
		No religion	1	1	100.0
	Any other Mixed background	Not answered	0	1	0.0
		Christian	0	4	0.0
		Muslim	0	2	0.0
		No religion	1	1	100.0
	Black or Black British Caribbean	Christian	0	7	0.0
	Black or Black British African	Christian	0	10	0.0
		Muslim	0	3	0.0
Asian or Asian British Indian	Christian	0	4	0.0	
	Hindu	0	14	0.0	
	Muslim	0	3	0.0	
	Sikh	0	4	0.0	
	No religion	0	2	0.0	
Girl	White British	Not answered	1	6	16.7
		Christian	15	79	19.0
		Sikh	1	1	100.0
		Any other religion	2	5	40.0
		No religion	39	132	29.5
	Any other White background	Christian	2	11	18.2
		Any other religion	0	2	0.0
		No religion	0	3	0.0
	White and Black Caribbean	Christian	2	4	50.0
		No religion	0	2	0.0
	White and Asian	Christian	0	5	0.0
		Any other religion	0	1	0.0
		No religion	0	1	0.0
	Any other Mixed background	Christian	0	2	0.0

Gender	Ethnic group	Religion	Current smoker	Total	%
		Muslim	0	1	0.0
		Any other religion	0	1	0.0
	Black or Black British Caribbean	Christian	0	2	0.0
		Any other religion	1	1	100.0
	Black or Black British African	Not answered	0	1	0.0
		Christian	0	17	0.0
		Muslim	0	4	0.0
		Any other religion	0	1	0.0
	Asian or Asian British Indian	Not answered	0	1	0.0
		Christian	0	4	0.0
		Hindu	0	22	0.0
		Muslim	1	3	33.3
		Sikh	1	8	12.5

Beliefs

Overwhelmingly young people were aware of the health implications, see Table 3, and did not think smoking made one more attractive, see Table 4.

Table 3: Beliefs on smoking and health (wave 1)

	Do you think smoking cigarettes is harmful to your health? N (%)	Do you think the smoke from other people's cigarette is harmful to you? N (%)	Once someone has started smoking, do you think it would be difficult to stop? N (%)
Definitely yes	822 (83.4)	638 (64.8)	442 (45.0)
Probably yes	26 (9.7)	268 (27.2)	404 (41.1)
Probably not	26 (2.6)	41 (4.2)	84 (8.5)
Definitely not	42 (4.3)	37 (3.8)	53 (5.4)
Total	986 (100.0)	984 (100.0)	983 (100.0)

Table 4: Beliefs on smoking and attractiveness (wave 1)

	Do you think smoking cigarettes make boys look more attractive? (%)	Do you think smoking cigarettes make girls look attractive? (%)
No	64.6	70.5
No difference from non-smokers	30.7	25.6
Yes	4.7	3.9
Total	100.0	100.0

Trends in smoking

There is an increase in those who have tried smoking and who are current smokers from age 12 to 15 – see Figure 2 and Figure 3, but current smoking has not (for the two schools with sufficient data), see Figure 4. There is an increase in the number of days smoking from wave 1 to 3 in School B and School A but it is not significant (KW $p=0.07$), and an increase in the number of cigarettes smoked from wave 1 to 3 (KW $p<0.001$) but no significant difference between wave 2 and 3 (MW $p=0.66$). There is no significant difference in the number wanting to stop smoking ($\chi^2=2.1$, $df=2$, $p=0.36$). At baseline (all schools) most young people got cigarettes from others, including older people, and few bought them in shops, see Table 5.

Figure 2: Ever smoked by age

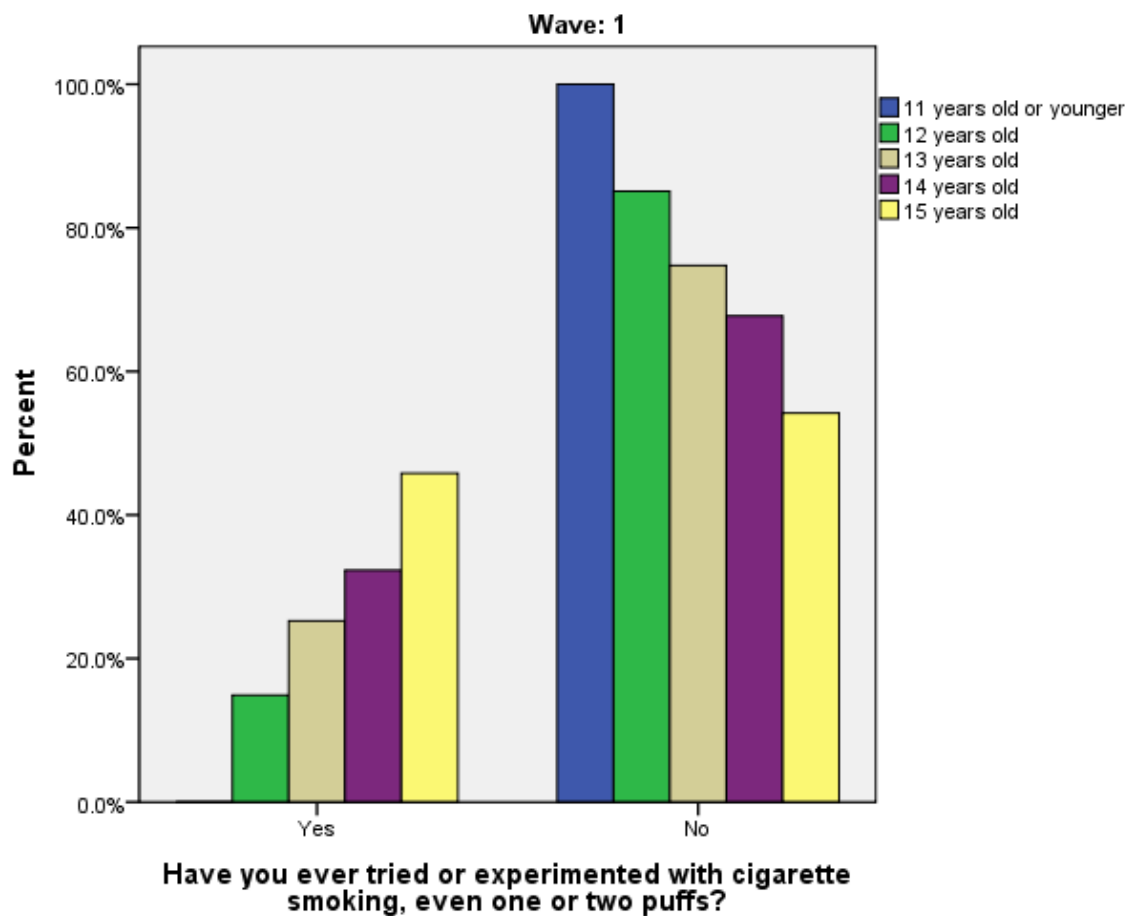


Figure 3: Current smoking

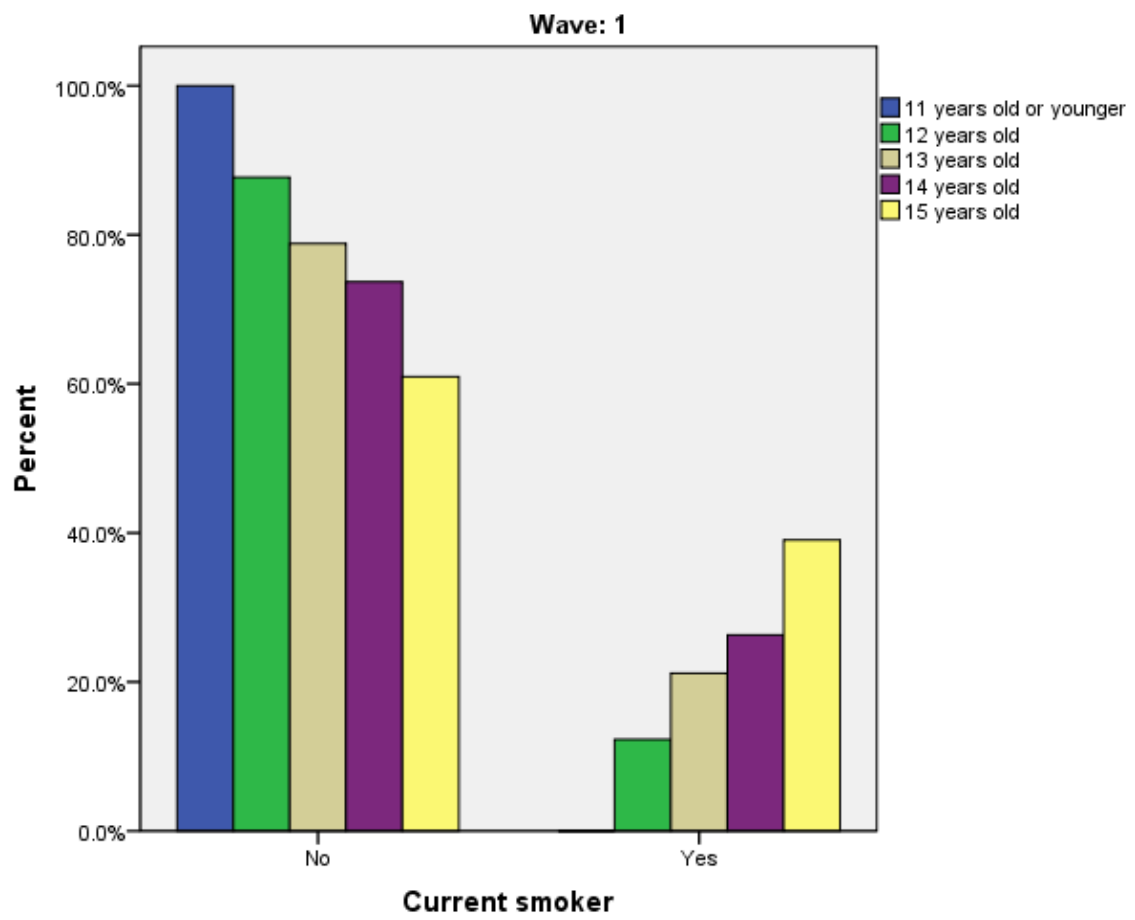


Figure 4: Current smoking for School B and School A

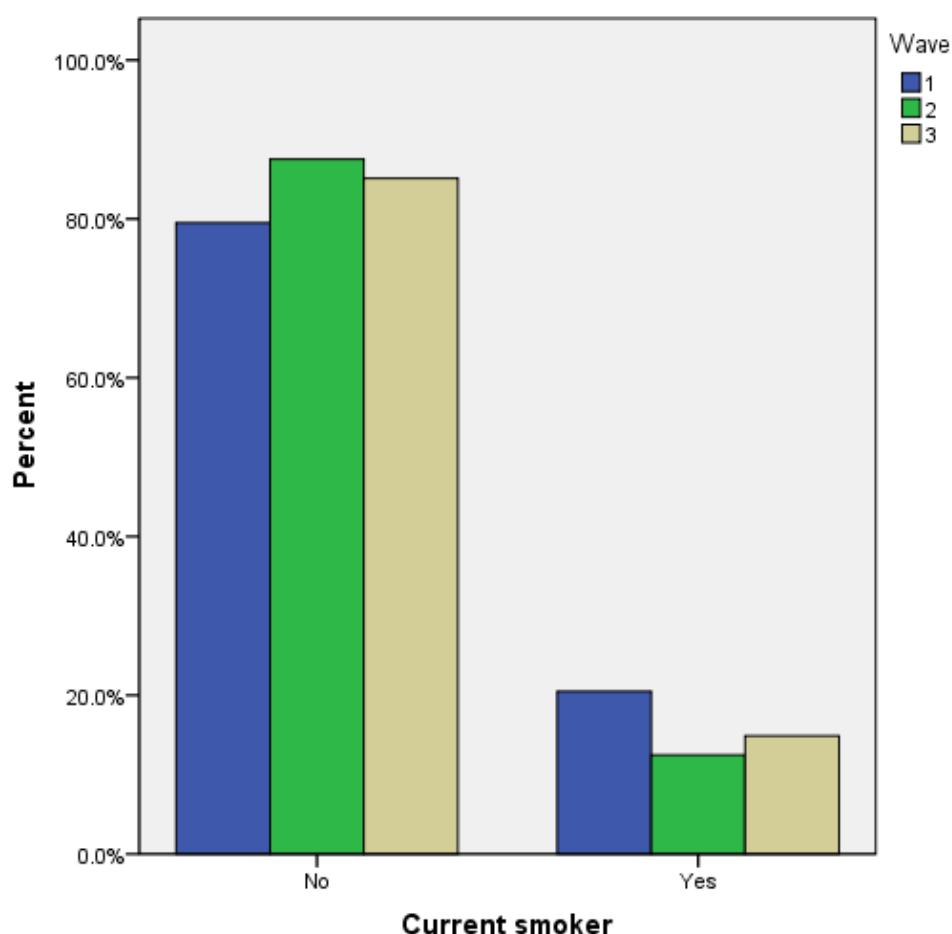


Table 5: methods of getting cigarettes (wave 1)

	N	%
I got them some other way	35	28.2
I borrowed them from someone else	33	26.6
I gave someone else money to buy them for me	28	22.6
An older person gave them to me	14	11.3
I bought them in a store, a shop, or from a market stall	10	8.1
I took them without permission or payment	4	3.2

Young people were more likely to say they received help or advice to stop smoking from a healthcare professional, teacher, a friend or family member ($\chi^2=69.9, 40.7, 36.1$ and 31.9 , $df=2$, $p<0.001$ in each case) in wave 2 and 3 compared to wave 1. However there was no difference in whether they were taught in a class about the dangers of smoking, or if family members had discussed the harm of smoking. However as 81% considered they had been taught in class this could be a ceiling effect (64% had been advised by family).

Beliefs about smoking did not change significantly between the three waves for considering smoking harmful (KW $p=0.12$) or other people's smoke being harmful (KW $p=0.46$) but that

once started it is difficult to stop the difference was significant (KW $p < 0.001$) though it was that they were more likely to disagree with the statement in wave 2. There is no significant difference between waves 1 and 3, implying the effect of the intervention was temporarily to alter the belief that stopping smoking was difficult. There was a small increase from wave 1 to 3 in the perception boys were more attractive ($\chi^2 = 12.0$, $df = 4$, $p = 0.018$), though not girls ($\chi^2 = 1.6$, $p = 0.8$).

While there was a difference between religious groups and ethnic groups with respect to whether they had ever smoked, there was no difference in beliefs. All ethnic groups and religions considered smoking did not make boys or girls more attractive, with only 3.5% and 1.9% respectively considering smoking made boys or girls more attractive in wave 3. There were no significant differences in belief that smoking is harmful, passive smoking is harmful or smoking is difficult to stop by religion (KW $p = 0.18$, 0.1 and 0.2 respectively). Ethnic group did make a small and significant difference with Whites less likely to think passive smoking harmful (KW $p = 0.03$) and *Asian or Asian British: Indian* more likely to think smoking is difficult to stop (KW $p = 0.04$) though neither reached the Bonferroni¹ adjusted alpha level.

Binary logistic regression was employed with current smoker as dependent variable and independent variables the demographics of the sample. While the forward, backward and stepwise methods are commonly employed, there are problems with their use, and there is a trend away from deterministic methods to a purposeful selection of variables (Hosmer and Lemeshow, 2000). The method and setting values advocated by Hosmer & Lemeshow (2000) were used. They advocate using the Enter method and then removing in turn the least significant variables until only significant variables remain. However at each removal the beta values are examined and if any are changed by more than 20% the variable is re-entered as it is assumed to be a confounder.

Thus religion was first removed, and this had a large effect on mother's highest education and so was retained. Next ethnicity was removed which had a large effect on both mother's highest education and religion. Finally (as age and gender were always significant) mother's highest education was removed which has a large effect on religion. Thus an interplay between religion, ethnicity and mother's highest educational level seems to play a part in determining smoking behaviour. However interpreting the output was difficult as there is so much correlation among religion, ethnic group and mother's education. We decided to use religion as the effect seems so obvious. A receiver operating characteristic curve showed a higher area under the curve (indicating better classification ability for the logistic regression keeping religion in compared to only gender and age).

¹ When multiple tests are conducted there is an increased possibility of a Type I error - a low p value indicating a significant result when none exists. One method to adjust for this is Bonferroni's correction whereby the alpha level (the p value below which a result is said to be significant, conventionally set at 0.05) is divided by the number of tests. Thus a standard alpha level of 0.05 and five tests would result in a revised alpha of 0.01, and only tests returning a $p < 0.01$ would be considered significant.

Pledge

In each school The SmokeScreen was implemented young people were invited to sign a pledge to not become replacement smokers. The number of young people who have signed the pledge was 7,415 and whom 2,500 gave email addresses so they may be contacted later.

The SmokeScreen survey

Pupils at two schools, School F (185 responses) and School G (139) completed a questionnaire. Gender was roughly equal with 56% girls and 44% boys. The age range was 11-16 with the largest numbers in the 12-14 age ranges, see Table 6. Seventeen percent were smokers, of whom exactly half stated The SmokeScreen made them want to stop smoking. Roughly half of the total sample (47%) lived with smokers, and 12% stated all or most of their friends smoked. Of the non-smokers 93% signed the “I’m not a Replacement Smoker” card. Of those who smoked 45 (61%) stated they wanted to stop, 22% were unsure and 17% did not want to. Non-smokers who signed The SmokeScreen card overwhelmingly did not want to start (89%), believed in the message about not becoming a replacement smoker (86%), were influenced by friends who signed (70%) and only 25% said it was just to get the free gifts.

Reasons for not signing the card were few. Only four stated they smoked and were not ready to stop, only three stated they did not understand what The SmokeScreen is about, three did not believe in The SmokeScreen message, four could not be bothered, two were concerned about giving their address, for two their friends did not sign and one was not interested in free gifts.

The impact of The SmokeScreen was generally positive (see Table 7) with high numbers agreeing it raised awareness, made non-smokers less likely to start and few would accept a cigarette. After the intervention current smokers were mostly more determined to quit, though they would accept a cigarette if offered.

Table 6: Ages

Age	N	%
11	26	8.3
12	84	26.8
13	76	24.2
14	82	26.1
15	39	12.4
16	7	2.2
Total	314	100.0

Table 7: Impact of The SmokeScreen

	% Total	% Smoker	% Non Smoker
It hasn't really had any impact on me	33	50	30
I am more aware of the harmful effects of tobacco	81	70	83
I don't understand what The SmokeScreen is trying to do	9	17	7
I know where to go if I need help to stop smoking	71	79	70
I'll accept a cigarette if it is offered to me	14	61	4
A big impact. The SmokeScreen message works for me	64	39	69
I don't think The SmokeScreen will help stop young people from starting to smoke	13	31	19
I didn't like smoking before, and I like it even less now	65	47	69
I am more determined to quit smoking (<i>for those who smoke</i>)	31	54	
I am less likely to start smoking (<i>for non-smokers</i>)	77		85

The young people generally showed negative attitudes to smoking, with a small majority opposed to smoking, a near universal belief that smoking is not safe for young people and only a tiny minority thinking it is cool, even smokers disagreed, see Table 8.

Table 8: Attitudes to smoking

	% Total	% Smoker	% Non smoker
I don't care if people smoke cigarettes	26	56	19
I am against smoking	54	20	60
There is no harm in smoking cigarettes when you are young	7	24	4
I have given up smoking and don't want to start again	10	0	8
Smoking is a cool thing to do	4	9	3
I have never tried a cigarette and don't intend to start			51

Discussion and conclusions

Smoking in young people in the Leicester schools surveyed showed 73% had never smoked, which is broadly in line with national data, as the Tellus survey gave a figure of 77%, but this included year 6 in addition to year 8 and year 10, so would have a lower smoking prevalence (Chamberlain et al., 2010).

The survey of smoking beliefs, attitudes, knowledge and behaviour confirmed known trends, for example that smoking increases with age.

In one of the few papers from the USA that addressed South Asians, An et al (2008) showed women smoked less than men in all six Asian groups, including South Asians, though acculturation increased smoking in women. However among men being second generation or later and higher education were associated with reduced smoking. In this sample we see no evidence that South Asians are smoking more, indeed they have very low rates for boys and girls.

In Leicester there are big differences in smoking in different ethnic groups. Whites had a smoking prevalence of 35% compared to other ethnic groups of 15% (Glendinning et al., 2010). In the UK Indian men smoke the least (20%) compared to the UK average (24%) though there is a more pronounced difference among women (5% compared with 23%). However some South Asian ethnic groups are even more different, with Bangladeshi men having the highest smoking rate (40%) but Bangladeshi women the lowest (2%) (Cancer research UK, 2011). Given the men and women in the Bangladeshi community will normally share the same religion, religion per se is not likely to be a protective factor. A combination of gender and ethnic group seems more plausible as in some cultures it is more acceptable for women to smoke (smoking rates are similar for White British men and women).

In the schools survey reported here there were significant differences in smoking between ethnic and religious groups, and between boys and girls, and these were not explained by beliefs about smoking. The dangers of smoking are well known and while the intervention showed no improvement in beliefs or knowledge this could be a ceiling effect as there is little room for change. For example less than 2% thought smoking made girls more attractive, and even if this went down to zero it is a small effect.

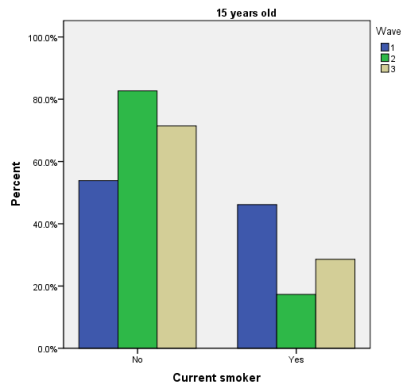
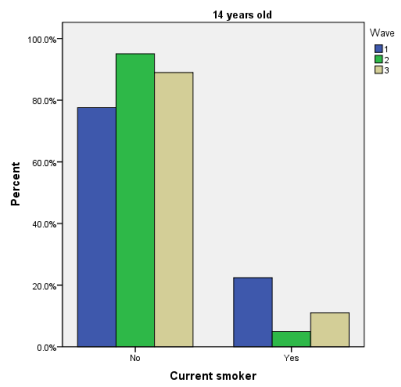
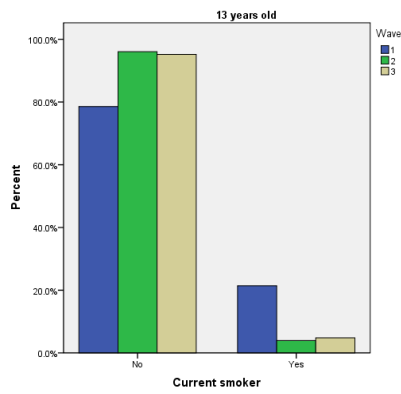
The SmokeScreen intervention was evaluated well, with positive comments about its effectiveness and acceptability. Non smokers stated it made them less likely to start, and a small majority of smokers saying they would be more likely to quit.

The results of the two surveys confirm that young people who smoke find it difficult to stop, and despite wanting to stop, are mostly not intending to quit, or at least not more determined due to the intervention. However those who do not smoke (the majority) are probably less likely to start. The intervention was intended to stop young people commencing smoking, and the view of young people surveyed is that it has made them less likely to start smoking. The Smokescreen can therefore be judged a success. Following up the young people in (say) a year or two years will show whether it in fact has been effective in the longer term in stopping them becoming a replacement smoker.

While the outcome of this specific intervention shows little immediate impact, the trend over the last year is more encouraging. There are sufficient data to conduct statistical analysis by

year for 13, 14 and 15 year old young people. This shows for 13 and 15 year olds no significant change from wave 2 to 3, and a small increase in 14 year olds that is significant ($p=0.04$) though not below the adjusted Bonferroni level, see Figure 5. However comparing wave 1 and wave 2 the improvements in current smoking are all significant ($p<0.001$ in each case). It could therefore be argued that the package of interventions over the year before The Smokescreen has had an impact. It is always difficult to establish quite which intervention works in smoking (Chapman, 2007), and it need not be the most recent. It may be that the improvement is in part due to the Communities in Health initiative which may have raised awareness on smoking simply by conducting the wave 1 survey. It could be teachers, parents or others having an impact. Finally it is reasonable to suppose the work of the smoking cessation team of the NHS have added to this impact, and may be the major factor. For work over the last year includes training of school nurses and liaison with teachers on curriculum development that may raise awareness of the need to prevent smoking.

Figure 5: Smoking by wave and age



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Appendix: Additional tables and figures

Of particular interest are any differences in religion or ethnic group. Demographic variables are tabulated in Table 9 through to Table 12. Religion and ethnic group are shown for the two schools with more complete data in Table 13 through to Table 16. Similar numbers of boys and girls completed the survey. The largest ethnic group was *White British*, though with large numbers of *Asian* and *Black* pupils. In School A *Asian or Asian British: Indian* was the second most numerous group, and in School B it was *Black or Black British African*. Neither result is unexpected as the latter is a Catholic school (and Catholicism is common in Africa) and the former is not a faith based school (and Leicester has a very high Asian population). Mothers' highest level of education (see Table 17) was significantly different between the schools with School B more likely to have graduate and postgraduate educated mothers in the baseline survey.

Table 9: Age

	Wave 1	%	Wave 2	%	Wave 3	%
Not answered	17	1.5	9	1.3	10	1.9
11 years old or younger	3	0.3	1	0.1	0	0.0
12 years old	407	35.5	3	0.4	0	0.0
13 years old	222	19.4	140	20.2	100	19.4
14 years old	327	28.5	175	25.3	256	49.6
15 years old	169	14.7	165	23.8	49	9.5
16 years old	1	0.1	200	28.9	101	19.6
Total	1146	100.0	693	100.0	516	100.0

Table 10: Gender

	Wave 1	%	Wave 2	%	Wave 3	%
Not answered	15	1.3	12	1.7	11	2.1
Boy	557	48.6	322	46.5	240	46.5
Girl	574	50.1	359	51.8	265	51.4
Total	1146	100.0	693	100.0	516	100.0

Table 11: Ethnic group²

Ethnic group	Wave 2	%	Wave 3	%
White British	433	64.9	314	64.2
Asian or Asian British Indian	66	9.9	44	9.0
Black or Black British African	36	5.4	30	6.1
Any other White background	30	4.5	17	3.5
White and Black Caribbean	18	2.7	19	3.9
White and Asian	12	1.8	12	2.5
Any other Mixed background	12	1.8	5	1.0
Any other Asian background	12	1.8	9	1.8
Black or Black British Caribbean	10	1.5	13	2.7
White and Black African	8	1.2	2	.4
Other	8	1.2	3	.6
White Irish	7	1.0	9	1.8
Any other Black background	5	0.7	1	.2
Chinese	4	0.6	5	1.0
Prefer not to say	3	0.4	2	0.4
Asian or Asian British Pakistan	2	0.3	2	0.4
Asian or Asian British Bangladeshi	1	0.1	2	0.4

Table 12: Religion

Religion	Wave 2	%	Wave 3	%
No religion	296	44.2	190	38.4
Christian	269	40.1	244	49.3
Hindu	39	5.8	28	5.7
Muslim	28	4.2	12	2.4
Any other religion	20	3.0	9	1.8
Sikh	18	2.7	12	2.4

Table 13: School A ethnicity (wave 2)

	N	%
White British	224	72.0
Asian or Asian British Indian	41	13.2
White and Black Caribbean	8	2.6

² Ethnicity was not asked in wave 1, but questions on religion and ethnic group were added in waves 2 and 3

Black or Black British African	6	1.9
Any other Mixed background	5	1.6
Black or Black British Caribbean	5	1.6
White and Asian	4	1.3
Any other White background	3	1.0
Any other Asian background	3	1.0
Chinese	3	1.0
White Irish	2	0.6
White and Black African	2	0.6
Any other Black background	2	0.6
Other	2	0.6
Prefer not to say	1	.3

Table 14: School B ethnicity (wave 2)

	N	%
White British	107	58.5
Black or Black British African	17	9.3
Any other White background	12	6.6
White and Black Caribbean	9	4.9
Asian or Asian British Indian	7	3.8
White and Asian	6	3.3
Any other Mixed background	4	2.2
Other	4	2.2
White Irish	3	1.6
White and Black African	3	1.6
Black or Black British Caribbean	3	1.6
Any other Black background	2	1.1
Asian or Asian British Pakistan	2	1.1
Any other Asian background	2	1.1
Asian or Asian British Bangladeshi	1	0.5
Prefer not to say	1	0.5

Table 15: Religion School A (wave 2)

	N	%
No religion	194	62.4
Christian	62	19.9
Hindu	27	8.7
Sikh	13	4.2
Any other religion	8	2.6
Muslim	7	2.3

Table 16: Religion School B (wave 2)

	N	%
Christian	168	91.3
No religion	8	4.3
Any other religion	6	3.3
Hindu	1	0.5
Sikh	1	0.5

Table 17: Mothers' education

	No formal schooling	Less than Secondary school / High school completed	Secondary school / High school completed	College / University completed	Postgraduate degree (e.g. MA, MSc, PhD completed)	Don't know / Not sure	Total
School A	3	12	52	56	4	207	334
% within School.	0.9%	3.6%	15.6%	16.8%	1.2%	62.0%	100.0%
School B	0	4	60	98	21	108	291
% within School.	0.0%	1.4%	20.6%	33.7%	7.2%	37.1%	100.0%
School C	0	4	12	8	4	63	91
% within School.	0.0%	4.4%	13.2%	8.8%	4.4%	69.2%	100.0%
School D	4	7	28	19	2	117	177
% within School.	2.3%	4.0%	15.8%	10.7%	1.1%	66.1%	100.0%
School E	2	1	26	27	2	130	188
% within School.	1.1%	.5%	13.8%	14.4%	1.1%	69.1%	100.0%
Total	9	28	178	208	33	625	1081
%	0.8%	2.6%	16.5%	19.2%	3.1%	57.8%	100.0%

within School.							
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General health

For wave 1 there were no significant differences between any of the schools on the six items with the exception of feeling sad or low, where School C young people were less likely than the other four schools to report this symptom, though this could be a type I error as using the Bonferroni adjusted alpha level ($p=0.008$) this is not significant (KW $p=0.03$). For the two schools with more complete data (School A and School B) there were no significant differences from wave 1 to 3 (KW), see Figure 6 to Figure 11: Feeling stressed.

Figure 6: Health in last 6 months: headache Wave 1

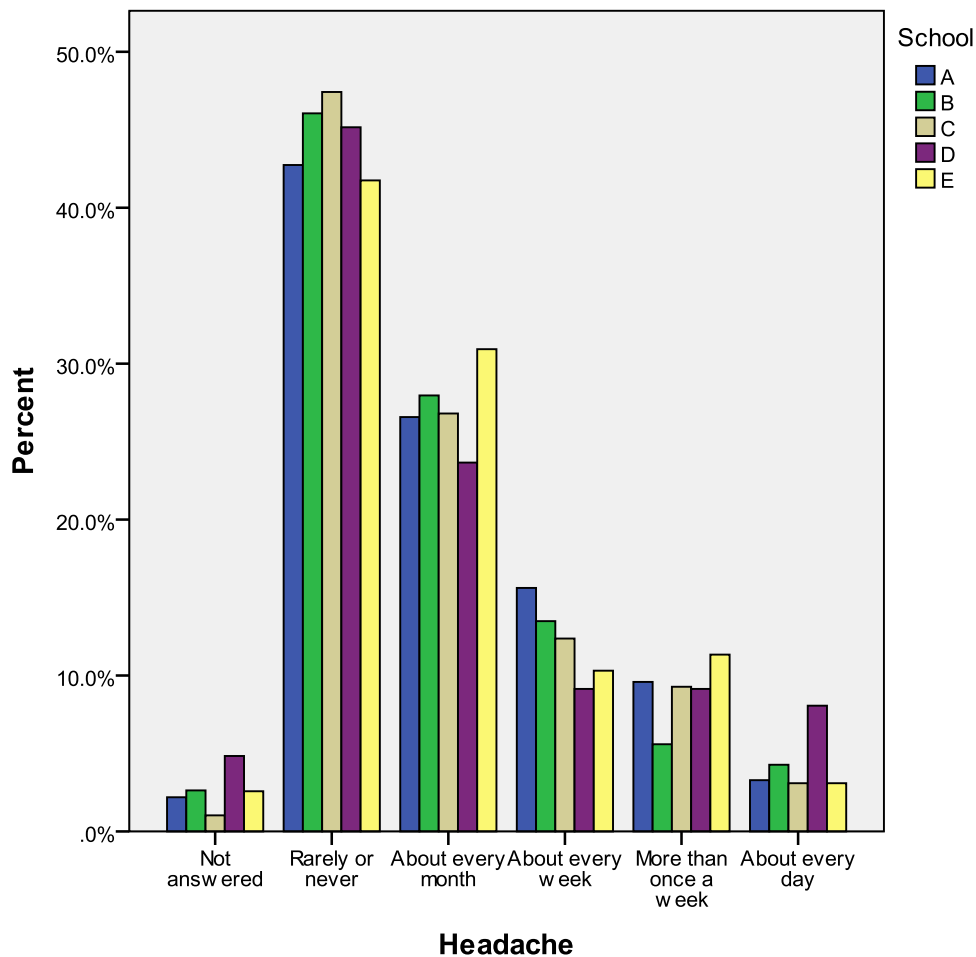


Figure 7: Stomach ache Wave 1

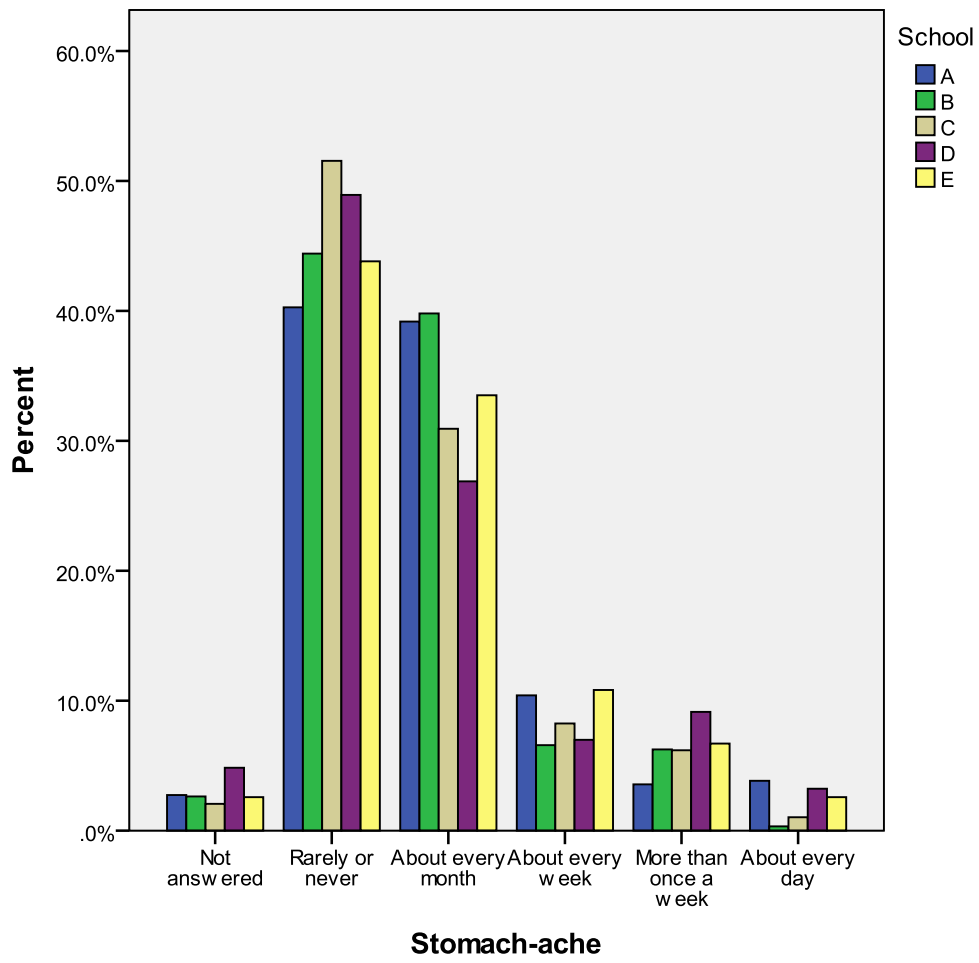


Figure 8: Feeling low Wave 1

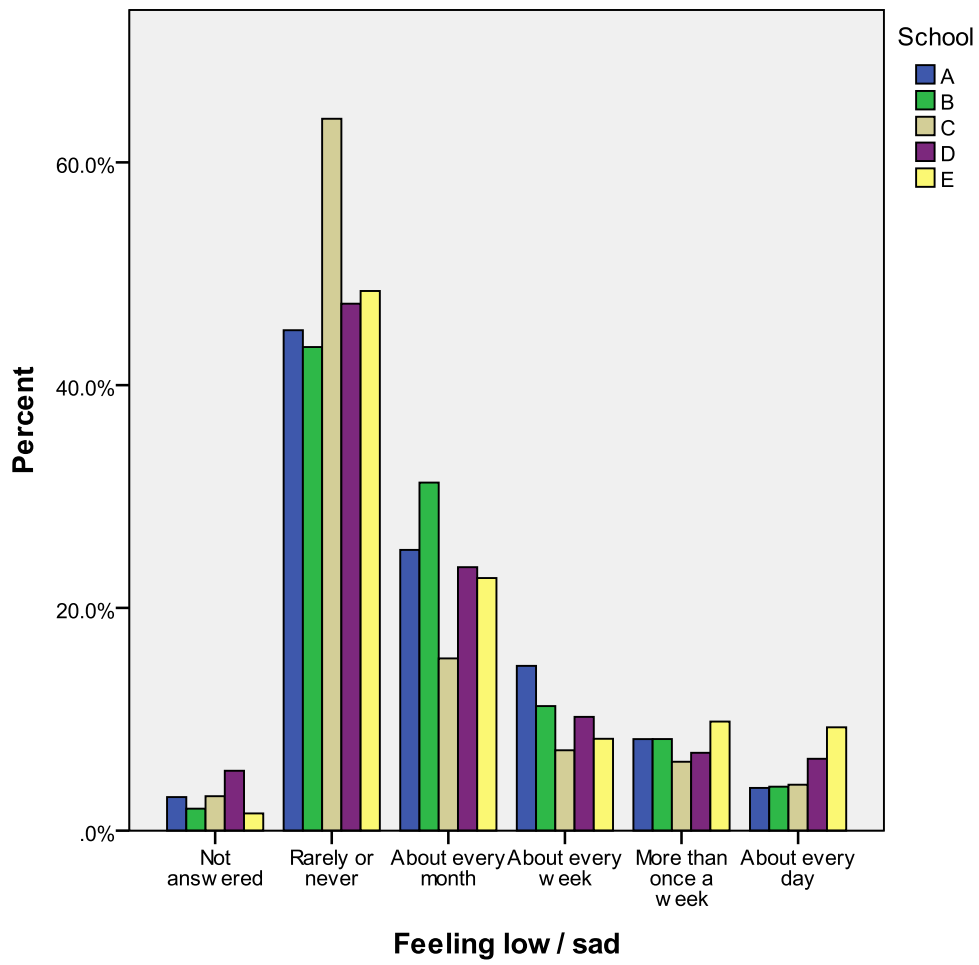


Figure 9: Feeling nervous/anxious/worried

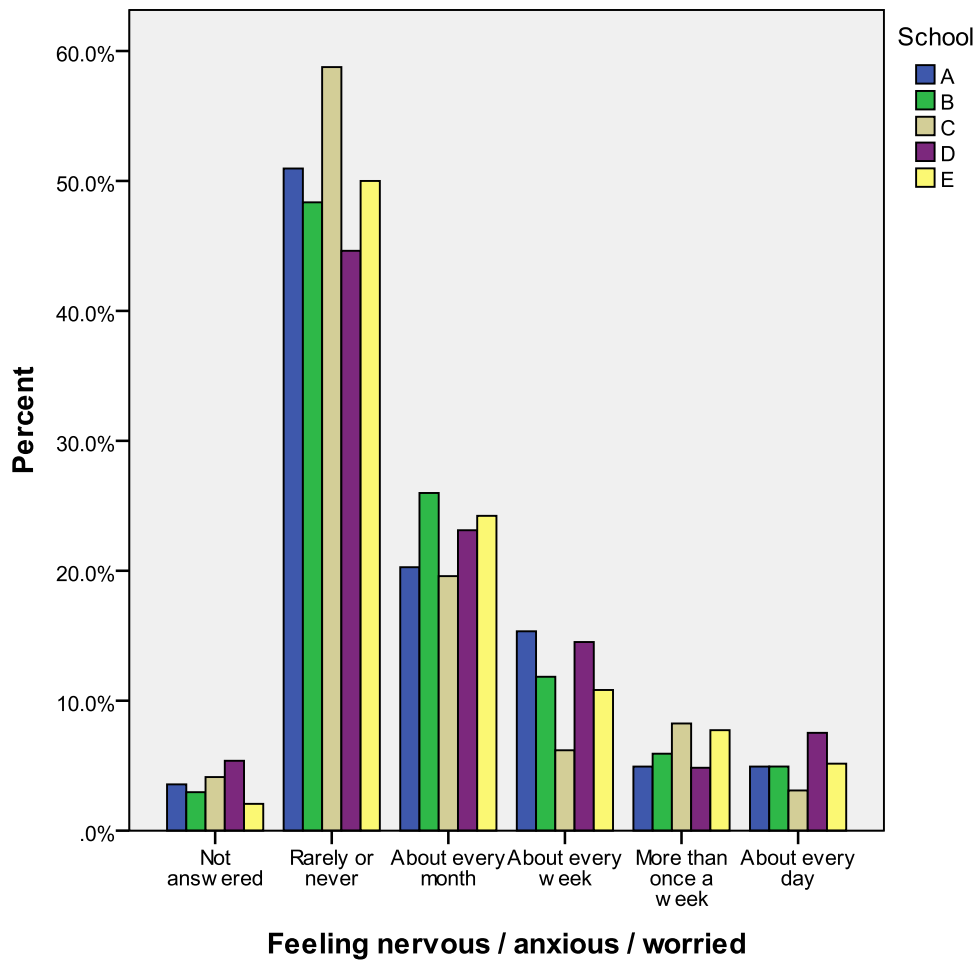


Figure 10: Difficulty in sleeping

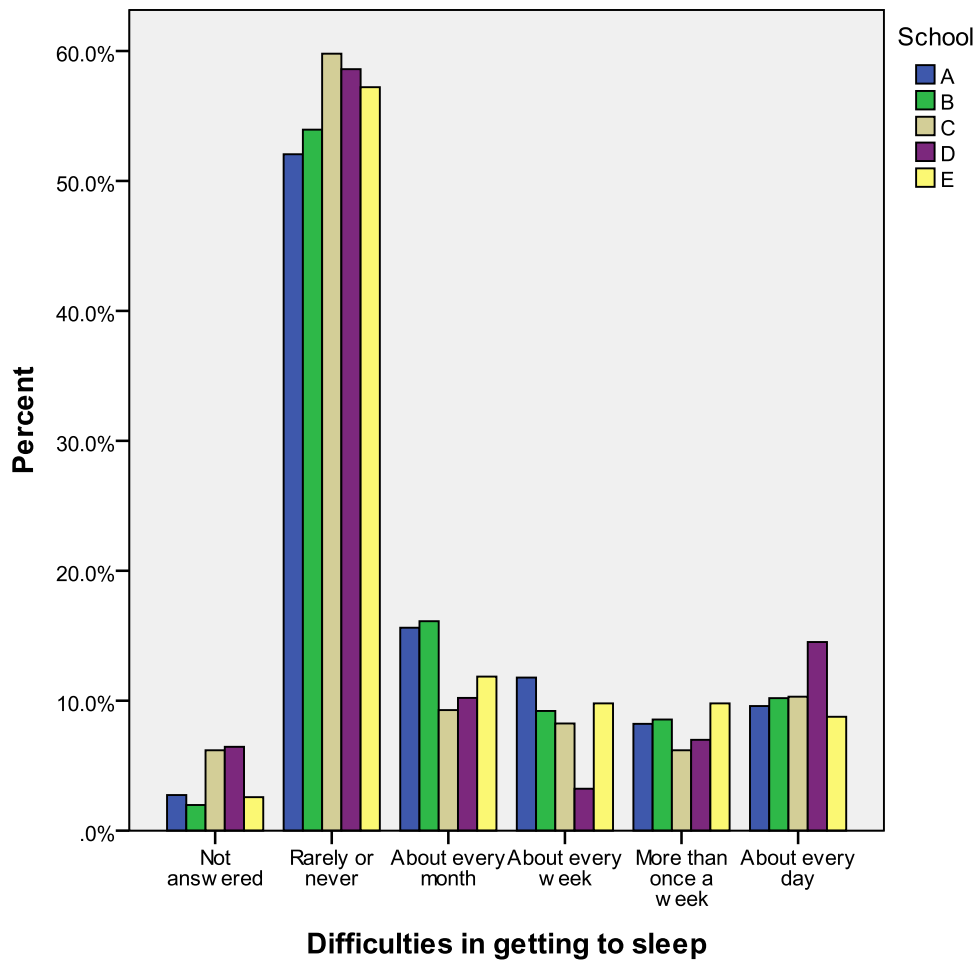


Figure 11: Feeling stressed

