

Research Report

Regional Trends in Smoking Prevalence in England: 2007-2012

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Abstract

Background and aims: England is divided into nine regions that have a budget for providing health care. Information on trends in smoking prevalence is useful for purposes of monitoring the effects of regional policies and for future planning. This article reports trends in smoking prevalence by English region from 2007 to 2012 inclusive.

Methods: Data from the Smoking Toolkit Study were used. This study includes monthly household surveys involving representative samples of the adult population (16+ years). Data are presented for each year on percentage of cigarette smokers.

Results: Cigarette smoking prevalence declined at different rates between 2007 and 2012 in different regions of England. The smallest decline was in the North East and East of England regions and the largest in the East Midlands and South East regions. Two regions had smoking prevalence in 2011-2012 substantially below 20%: London (16.8%) and the South East (18.2%). Highest smoking prevalence in 2012 was in the North East (24.6%), North West Midlands (22.2%) and West Midlands (22.1%). After adjusting statistically for age, gender and social grade, prevalence in the North East and South West regions declined more slowly than the national average and prevalence in the South East declined faster.

Conclusions: Cigarette smoking prevalence in England has declined at significantly different rates in different parts of the country in the past 6 years; not all of the difference can be accounted for by changes in demographic factors.

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Declaration of competing interest: RW has undertaken research and consultancy for companies that develop and manufacture smoking cessation medicines. He is Co-Director of the National Centre for Smoking Cessation and Training. His salary is covered by Cancer Research UK. He is a trustee of the charity, QUIT. He has a share of a patent for a novel nicotine delivery device. JB

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Data access: The data file used for this analysis and the SPSS syntax are available as supplementary files. On www.smokinginbritain.co.uk.

Commentaries: Readers are invited to comment on this article including presenting results of additional data analyses by going to: www.smokinginbritain.co.uk.

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Introduction

England has had a ‘comprehensive’ tobacco control strategy since 1998. This strategy involves a wide range of policies that are enacted at national level such as keeping the cost of smoking high through excise duty and national mass media campaigns, and others that may be enacted differently in different regions, such as provision of stop-smoking support and enforcement of age of sale legislation. England is divided into nine regions for the purposes of health service provision. Some (e.g. The North East, South West, and East of England regions) have at different times installed regional offices for tobacco control, aimed at co-ordinating activity and building on national level policies. It would be useful to know whether different regions of England have experienced different rates of reduction in smoking prevalence as a starting point for examining whether it is possible to influence this at regional level.

There may be a number of factors other than regional policies that may influence rates of prevalence reduction across the regions. For example, socio-demographic changes are likely to account for some of the difference and these should be taken into account in any analysis.

Methods

Design: This article used data from the Smoking Toolkit Study. This is an on-going study involving monthly household surveys of representative samples of the adult (16+ years) population in England. Full details are provided in (1). See www.smokinginengland.info for further details.

Sample: The sample consisted of 126,631 people aged 16+ surveys between January 2007 and November 2012. The nine English regions covered were: North East, North West, Yorkshire and Humber, East Midlands, West Midlands, East of England, London, South East, South West.

Measures: Cigarette smoking prevalence was assessed by the question: Which of the following best applies to you? 1. I smoke cigarettes (including hand-rolled) every day, 2. I smoke cigarettes (including hand-rolled), but not every day, 3. I do not smoke cigarettes at all, but I do smoke tobacco of some kind (e.g. pipe or cigar), 4. I have stopped smoking completely in the last year, 5. I stopped smoking completely more than a year ago, 6. I have never been a smoker (i.e. smoked for a year or more), 7. Don’t know. Those who responded either 1 or 2 were classed as current cigarette smokers. Data were also collected on age, gender and social grade: AB professional/managerial, C1 skilled non-manual, C2 skilled manual, D semi-skilled manual, E unskilled manual, low paid or long-term unemployed.

Analysis: The percentages of smokers in each region in each 2 years of study were calculated. Two years were used to provide sufficient cell samples sizes for accurate estimation of prevalence (with $\pm 1\%$ 95% confidence intervals). Differences in change in prevalence were assessed using a series of multiple logistic regressions. The outcome measure was smoking status of each participant (1 or 0). The predictors were: region, age, gender, social grade. Nine analyses were undertaken, one for each region. In each analysis the value for that region was set to 1 and all other regions were set to 0. All variables were entered together and in each case the interaction between the region variable and year was also entered. This allowed assessment for each region of whether the rate of change in prevalence was different from the rest of the country. The alpha for the test of the interaction was set to 0.05 2-tailed.

Results

Table 1 shows the cigarette smoking prevalence of each region by each of the 5 years of the study. It shows that the North East and South West showed a smaller reduction in prevalence compared with the rest of the country after adjusting for age, gender and social grade while the South East showed a larger reduction. The largest unadjusted reduction was in the North West but this was not statistically significant once adjustment was made for socio-demographic variables.

Prevalence in England as a whole fell by 2.9% over the period of the study to 20.3%. In 2011-12, two regions had smoking prevalence substantially below 20%: London and the South East.

Table 1: Cigarette smoking prevalence of regions of England from 2007-2012

Region	2007-8	2009-10	2011-12	Change from 2007-8 to 2011-12
North East	25.2	26.4	24.6	-0.6*
North West	26.3	22.9	22.2	-4.1
Yorks and Humberside	27.6	24.2	21.2	-5.4*
East Midlands	23.7	23.1	20.8	-2.9
West Midlands	26.1	23.8	22.1	-4.0
East of England	21.3	21.5	20.4	-0.9
London	18.2	16.9	16.8	-1.4
South East	21.8	19.6	18.2	-3.6^
South West	21.7	20.0	21.1	-0.6*
<i>England</i>	<i>23.2</i>	<i>21.4</i>	<i>20.3</i>	<i>-2.9</i>

Note: Mean cell sample size is approximately 4,700. The 95% confidence intervals for each cell are approximately $\pm 1\%$. For England as a whole the 95% confidence interval is $\pm 0.4\%$. *Significantly smaller decline than the rest of the country after adjusting for age, gender and social grade. ^ Significantly larger decline than the rest of the country after adjusting for age, gender and social grade.

Discussion

Prevalence in England fell by 2.9% over the course of the study, amounting to some 0.7% per year. It fell more slowly in the North East and South West than other regions and more quickly in the South East, after adjusting for socio-demographic factors. It may be that this is attributable to differences in regional policies but it may also be due to factors outside of regional policy makers' control. The demonstration that there has been a difference at least provides a starting point for the process

It would be worthwhile examining what factors may have accounted for this although it should be noted that the reduction across the two time periods of the study varied across the regions so it is unlikely to be a single consistent factor over the full period of the study.

References

1. FIDLER, J. A., SHAHAB, L., WEST, O. et al. (2011) 'The smoking toolkit study': a national study of smoking and smoking cessation in England, *BMC Public Health*, 11.