

Effects of Childhood Socioeconomic Circumstances on Persistent Smoking

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Prolonged tobacco use is recognized as the most important and the most preventable cause of premature mortality in industrial countries. It is estimated that among those who smoke regularly throughout their adult lives, about half will die from smoking-related diseases.¹ In industrial countries, most smokers begin smoking in their teenage years,² and the majority of regular smokers continue smoking into middle age.³ Throughout adulthood, socioeconomic disadvantage is associated with persistent smoking, whereas higher socioeconomic status is associated with higher rates of smoking cessation.³ These socioeconomic differentials in smoking persistence contribute to socioeconomic gradients in health, making the determinants of smoking differentials key objects of inquiry for public health research and policy.⁴

Longitudinal research has begun to open 2 important lines of inquiry. First, a small number of studies have examined the contribution of socioeconomic circumstances in childhood and adulthood to smoking risk in adulthood.^{5–11} These studies indicate possible gender differences in influences on lifetime smoking. Adult socioeconomic status is reported to be more important than childhood social class^{5–7} and education¹² in influencing smoking among men. Among women, childhood socioeconomic circumstances^{8,11} and education^{8–11} have an effect on adult smoking beyond that of adult socioeconomic circumstances. Second, the pathways that underlie the relationship between childhood disadvantage and smoking status have been examined in another cluster of studies. Important mediators identified in these studies are factors related to family background, including parental smoking^{13,14} and the young person's educational track,¹⁵ which in turn are related to parental education and social class.¹⁶ Other factors affecting the pathway to adult socioeconomic position, including labor market experiences^{17,18} and, among women, early

Objectives. We investigated whether socioeconomic circumstances at different life stages influence persistent smoking.

Methods. We followed a British birth cohort (all births between March 3 and 9, 1958) for 41 years to examine the influence of childhood and adulthood socioeconomic position on persistent smoking in adulthood (n=6541).

Results. Persistent smoking (19% of participants, n=1216) showed strong social gradients with both childhood and adulthood socioeconomic measures. Among men, the association with childhood socioeconomic circumstances was no longer significant after we adjusted for adulthood socioeconomic circumstances; however, among women, the adjusted odds of persistent smoking increased by 8% for each unit increase across a 16-point childhood score.

Conclusions. Childhood socioeconomic circumstances predicted persistent smoking among women in our cohort, a finding that highlights the importance of influences on the development of persistent smoking across the life course. (*Am J Public Health.* 2004;94:279–285)

and single parenthood,^{19,20} also are associated with smoking status in early adulthood.

These 2 fields of research mainly focus on current smoking and rely on restricted markers of socioeconomic position. Therefore, they do not examine duration of exposure to poor socioeconomic conditions, which is suggested to be a potentially important influence on adult smoking behavior.^{20,21} We extended previous research by using longitudinal data from the 1958 British birth cohort described in further detail later in this article. We examined the influence of socioeconomic circumstances, which were measured by occupational class at different life stages, on prolonged tobacco use from 23 to 41 years of age. With information on socioeconomic circumstances at several time points, we investigated whether both childhood and adulthood socioeconomic circumstances influence smoking persistence (i.e., there is a cumulative effect) or whether socioeconomic influences are confined to a particular life stage (childhood or adulthood). Additionally, we sought to identify potential mediating factors through which socioeconomic circumstances at different life stages might affect smoking persistence. We looked specifically at the contribution of parental smoking and other

dimensions of socioeconomic position (notably parental education and the individual's own education and reproductive and labor market experiences) to the risk of persistent smoking among men and among women. Because smoking may be a predictor of an individual's social trajectory¹⁷ rather than the reverse, we considered as a secondary issue whether the effects of adult socioeconomic position are the result of the influence of early smoking behavior on adult social trajectories.

Sample

The 1958 British birth cohort included all individuals born in England, Wales, and Scotland between March 3 and 9, 1958. Data were collected as part of the National Child Development Study; details are published elsewhere.²² In brief, the survivors of some 17 000 live births were re-interviewed at the ages of 7, 11, 16, 23, 33, and 41 years (11 373 forty-one-year-old participants reported information about smoking). In general, biases associated with sample attrition have tended to be small, although they are in the direction of underrepresentation of more deprived social groups over time. For example, in the sample used for multivariate

analysis ($n=3180$), 20.8% of the participants were born into social classes IV and V or had no male head of household, compared with 24.3% in the live-birth sample ($n=16\,595$). With respect to father's education, 59.6% of cohort participants' fathers had left school at less than 15 years of age in the live-birth sample, compared with 59% in the multivariate sample. At the 16-year time point, 33.1% of cohort participants smoked cigarettes, compared with 28% in the multivariate sample.

Measures

Smoking behavior was reported at age 16, 23, 33, and 41 years. Smokers were defined as those who reported smoking 1 or more cigarettes per week at 16 years of age and those who reported smoking 1 or more cigarettes per day at 23, 33, and 41 years of age. Persistent smokers were defined as those who smoked at 23, 33, and 41 years of age. This definition allowed inclusion of individuals who began smoking later in adolescence (after 16 years of age) but had stable smoking habits at 41 years of age.

Social class was classified in accordance with the Registrar General's Occupational Scale,²³ which ranges from class I (professional) to class V (unskilled manual) on an ordinal scale. Social class of the cohort participant's father was recorded at birth and at 7, 11, and 16 years of age. At 23, 33, and 41 years of age, the participant's current or most recent class was recorded for both men and women. Social class was used as a continuous variable at each age: 1 represented classes I and II, 2 represented class III nonmanual, 3 represented class III manual, and 4 represented classes IV and V. When social class at 7 years of age was missing, the value at 11 years of age was used; similarly, when social class at 11 years of age was missing, the value at 16 years of age was used, provided that social class at 7 years of age was not also missing. Cohort participants with no male head of household were included with classes IV and V.

Rather than use separate measures of social class at each age, cumulative socioeconomic position scores were calculated for childhood and adulthood. For childhood, scores at birth and at 7, 11, and 16 years of

age were summed to produce a cumulative score that ranged from 4 (most favorable circumstances) to 16 (least favorable). For adulthood, scores at 23, 33, and 41 years of age were summed to produce a similar scale that ranged from 3 to 12. Because occupation-based measures of socioeconomic position may misclassify women,^{11,24} an alternative measure also was used that was based on housing tenure (owner, renter, or other at 7 to 41 years of age).

Potential mediating factors include those related to the social environment of the home; father's educational level is another dimension of socioeconomic position and was used in our study as a mediating factor, partly because, unlike occupational class, educational level is not measured at several time points. Also, for the parents' generation, parental education (leaving school before 15 years of age or leaving school at 15 years of age or later) was relatively homogeneous. Parental smoking was reported when the participant was 16 years of age. The participant's education was measured as the highest educational qualification achieved by 23 years of age and was coded as higher education, A level (or equivalent), O level (or equivalent), less than O level (or equivalent), or none. These are broadly comparable to US classifications of above high school diploma; high school diploma/grade 12; grade 10; less than grade 10; or no qualifications.

Reproductive pathways were indexed according to the participants' age at the birth of their first child (<23 years of age or ≥ 23 years of age) and, among women, according to single-parenthood experience for 1 or more months by 33 years of age. (Single parenthood was not investigated for men, because few were single parents: $n=7$ by 23 years of age; $n=82$ by 33 years of age.) Unemployment was included to tap the potential influence of labor market experiences on men. Classification of unemployment among women was difficult because of the tendency for unemployed women to categorize themselves as homemakers rather than as unemployed. Unemployment was defined as being out of the labor market for 12 or more months between 1981 and 1991 as a result of being unemployed, being in a government

training program, being a full-time student, being a homemaker or childcare provider, being sick and unable to work, or other.

METHODS

Initial data analysis explored univariate relationships between persistent smoking (vs other smoking and nonsmoking) and social class from birth to 41 years of age. Logistic regression was used to predict persistent smoking from cumulative measures of childhood and adulthood social position, first in unadjusted models separately for childhood and adulthood social position scores and then in mutually adjusted models of these 2 variables. This approach allowed us to better isolate the stage of life when influences on smoking might be operating. In the next stage of this life course study, logistic regression models included additional factors that might explain the contribution of childhood socioeconomic circumstances to the risk of persistent smoking. These potential mediating factors were included in their temporal sequence, with, for example, measures related to the early home environment entered before measures of the participants' educational career. Cigarette consumption also was examined with these models, and interactions between socioeconomic position scores and other variables were tested. We assessed multicollinearity in the final model with an adaptation of the standard inflation factors method for logistic regression.²⁵ We found that the results were not affected by multicollinearity.

We also considered whether any effect of adult social position on smoking persistence could be the result of social mobility—i.e., whether adolescent smokers would be less likely to move to higher social classes. We constructed a model with smoking persistence as the dependent variable and socioeconomic circumstances in childhood, adulthood, and their interaction. Before this, we assessed the association between smoking at 16 years of age and social mobility and adjusted for socioeconomic circumstances at 16 years of age with polytomous logistic regression. This analysis used 3 groups: upwardly mobile (men $n=812$, women $n=988$), downwardly mobile (men $n=388$, women $n=360$), and so

TABLE 1—Percentage of Persistent Smokers^a by Socioeconomic Position^b From Birth to 41 Years of Age

Age, y	n ^c	Social Class				OR ^d (95% CI)
		I & II	III NM	III M	IV & V	
Men						
0	2889	13.3	15.0	18.0	23.8	1.27 (1.15, 1.40)
7	2928	12.2	15.5	19.4	22.0	1.27 (1.16, 1.40)
11	2898	13.4	11.2	18.8	23.6	1.29 (1.17, 1.41)
16	2945	14.4	11.3	19.5	22.7	1.23 (1.13, 1.35)
23	2936	9.3	13.9	21.6	29.8	1.62 (1.47, 1.79)
33	2917	12.2	13.8	22.8	29.0	1.45 (1.33, 1.58)
41	2840	10.9	11.7	23.7	28.0	1.53 (1.40, 1.67)
Women						
0	3242	10.9	15.3	18.9	27.4	1.45 (1.32, 1.60)
7	3277	11.2	17.1	20.0	25.6	1.38 (1.26, 1.51)
11	3245	11.6	15.8	19.9	25.9	1.38 (1.27, 1.51)
16	3277	11.1	14.6	20.7	26.6	1.43 (1.31, 1.56)
23	3376	11.5	16.8	23.4	34.8	1.60 (1.47, 1.74)
33	3195	13.3	16.8	27.1	27.6	1.37 (1.27, 1.48)
41	2812	12.3	18.4	23.8	27.4	1.38 (1.27, 1.50)

Note. NM = nonmanual; M = manual; OR = odds ratio; CI = confidence interval.

^aSmokers at 23, 33, and 41 years of age.

^bSocial class at different ages is based on father's social class at birth and at 7, 11, and 16 years of age and participant's social class at 23, 33, and 41 years of age.

^cAt each age, the maximum sample with full data on smoking and social class was used, and those with missing data were omitted. Hence, the sample size varies slightly at each age because of missing data on social class.

^dOdds ratios for persistent smoking for each unit increase in social class.

cially stable (men $n=366$, women $n=266$). The latter was the reference category.

RESULTS

In the sample with complete data on smoking habits from 16 to 41 years of age ($n=6541$), 18% of men ($n=559$) and 19% of women ($n=657$) were persistent smokers from 23 to 41 years of age. Most persistent smokers (70%) were smokers at 16 years of age. Current smokers at 41 years of age were predominantly long-term smokers; 23% of men ($n=711$) and 24% of women ($n=813$) were smokers at 41 years of age; of these, 4 out of 5 men (79%) and women (81%) had smoked since 23 years of age or earlier.

There were strong socioeconomic gradients in persistent smoking. At each age, social position significantly predicted persistent smoking in univariate analyses (Table 1). The similar odds ratios (ORs) for persistent smoking observed for childhood suggested a general

effect rather than an effect that was specific to any single age (Table 1). We therefore derived cumulative scores to include all information on socioeconomic circumstances. Correlations between social class in childhood (e.g., $r=.80$ for ages 11 and 16 years) were greater than those in adulthood (e.g., $r=.39$ for ages 23 and 41 years), particularly among women. Correlations between childhood and adulthood measures were modest (Pearson $r<.4$).

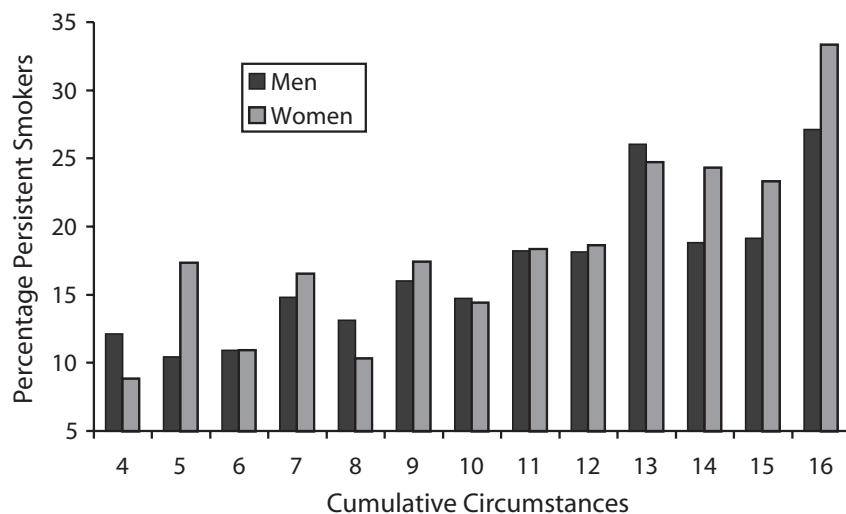
The increase in prevalence of persistent smoking with increasing childhood cumulative socioeconomic scores is illustrated in Figure 1. The cumulative childhood score was significantly associated with persistent smoking, and among women, the effect remained after we adjusted for adulthood socioeconomic circumstances. Odds of persistent smoking increased by 8% among women and by 3% among men for each 1-unit increase in the childhood score (Table 2). Thus, women from unskilled manual classes at each

time point in childhood were more than twice as likely as women from professional and managerial classes to be persistent smokers (OR=2.5). Among men, the equivalent odds ratio was 1.4.

The adulthood cumulative score also predicted persistent smoking, and a strong effect remained after we adjusted for childhood socioeconomic circumstances. Odds of persistent smoking increased by 19% among women for each 1-unit increase in adulthood score, which resulted in an odds ratio of 4.8 for those in the least favorable adult socioeconomic circumstances compared with those in the most favorable circumstances. Among men, the odds increased by 21% for each 1-unit increase in adulthood score (OR=5.6 across the scale). Similar patterns were found when we used housing tenure as an alternative socioeconomic measure. In mutually adjusted models for childhood and adulthood housing tenure, there was a significant effect of tenure in childhood among women. Women who lived in owner-occupied housing were less likely to be persistent smokers than were those who lived in rented and other accommodations (data not presented). Among men, the estimate was in the same direction but was not statistically significant after we adjusted for adulthood housing tenure.

Next, we examined the relationship between childhood and adulthood socioeconomic circumstances and persistent smoking, and we allowed for potential mediators through which socioeconomic circumstances might act. All potential mediators (except parental education among men) were significantly related to persistent smoking in univariate analyses (Table 3, column 1). The odds ratios for childhood cumulative socioeconomic circumstances were minimally affected by adjustments for parental education or parental smoking habits among both men and women. Adjusting for the participants' educational qualifications achieved by 23 years of age eliminated the effect of childhood socioeconomic circumstances, which suggests that education mediates the relationship between childhood socioeconomic circumstances and persistent smoking.

With respect to cumulative socioeconomic circumstances in adulthood, Table 3 shows that among men, the odds ratios remained



^aScore representing social class from birth to 16 years. A low score indicates the most favorable and a high score the least favorable circumstances.

FIGURE 1—Persistent smokers (%) by childhood cumulative socioeconomic circumstances.^a

similar after we adjusted for factors from earlier life and from adulthood (age at birth of first child and unemployment). Among women, the odds ratios for cumulative socioeconomic circumstances in adulthood were reduced after we took earlier life factors (parental smoking and education, own education) into account and, to a lesser extent, after we allowed for age at birth of first child and single parenthood. Similar patterns were observed when we used a cumulative housing tenure score; among both men and women, the adulthood score was reduced after we

took earlier life factors into account (data not presented).

In addition to highlighting pathways that underlie the association between childhood and adulthood socioeconomic circumstances and persistent smoking, Table 3 identifies important factors that predict persistent smoking. In fully adjusted models for men, father's education and smoking habit, participant's education, and participant's adulthood socioeconomic position remained significant predictors of persistent smoking. The effect of father's smoking remained strong after we adjusted

for all of the other factors (adjusted OR=2.0). Similarly among women, the adjusted odds ratio for mother's smoking was 1.5. Participant's educational qualifications and domestic trajectories are clearly important among women, with age at birth of first child (adjusted OR=1.5) and single parenthood (adjusted OR=1.8) being strongly associated with smoking persistence.

In further analyses that included cigarette consumption levels at 16 years of age, we found that the effects on persistent smoking of socioeconomic circumstances in childhood and adulthood remained after adjusting for consumption level at 16 years of age among women (adjusted OR=1.06, 95% confidence interval [CI]=1.02, 1.10 for childhood circumstances; adjusted OR=1.13, 95% CI=1.08, 1.19 for adulthood circumstances). Among men, the effects of adulthood socioeconomic circumstances remained after we adjusted for consumption level at 16 years of age (OR=1.12; 95% CI=1.07, 1.18). Finally, we found that smoking at 16 years of age had a significant effect on subsequent social mobility: after we controlled for social class at 16 years of age, we found that male smokers were less likely to be upwardly mobile than were nonsmokers (OR=0.57; 95% CI=0.43, 0.76). In models of the effects of childhood and adulthood socioeconomic circumstances on persistent smoking, main effects, but not their interaction, were significant. Thus, social mobility effects are likely to contribute to the effects of adulthood socioeconomic circumstances on persistent smoking.

DISCUSSION

Our study provides a life course perspective on persistent smoking in adulthood. It examines the contribution of childhood socioeconomic circumstances to the risk of persistent smoking, and it identifies potential factors that mediate this relationship. First, we found that almost 1 in 5 participants from the British birth cohort were persistent smokers; the majority (70%) smoked over a 25-year period from 16 to 41 years of age. Second, we demonstrated clear social gradients in smoking persistence, which is important because persistent smokers have a high burden of morbidity and mortality²⁶ that contributes to

TABLE 2—Association of Persistent Smoking With Childhood and Adulthood Cumulative Socioeconomic Scores

	Unadjusted OR (95% CI)	Adjusted OR ^b (95% CI)
Men (n = 2290)^a		
Childhood score (12 points)	1.09 (1.05, 1.12)	1.03 (0.99, 1.06)
Adulthood score (9 points)	1.22 (1.17, 1.28)	1.21 (1.15, 1.26)
Women (n = 2282)^a		
Childhood score (12 points)	1.12 (1.08, 1.16)	1.08 (1.04, 1.12)
Adulthood score (9 points)	1.23 (1.18, 1.28)	1.19 (1.14, 1.25)

Note. OR = odds ratio; CI = confidence interval.

^aSample with full data on smoking (16, 23, 33, and 41 years of age) and cumulative social position scores. Cohort participants with missing data were omitted. The sample is fixed for all the models in the table.

^bOR is adjusted for childhood and adulthood cumulative socioeconomic scores.

TABLE 3—Association of Persistent Smoking With Childhood and Adulthood Cumulative Socioeconomic Circumstances and Other Pathway Factors

	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Men (n = 1566)^a		
Childhood socioeconomic score	1.07 (1.03, 1.12)	1.06 (1.02, 1.11)
Mother smokes ^b	1.40 (1.07, 1.84)	1.07 (0.80, 1.42)
Father smokes ^b	2.43 (1.81, 3.26)	2.23 (1.64, 3.04)
Age father left school ^c	1.10 (0.84, 1.46)	1.43 (1.06, 1.93)
Educational qualifications by 23 years of age ^d	1.58 (1.41, 1.77)	1.51 (1.33, 1.71)
Adult socioeconomic score	1.22 (1.16, 1.29)	1.15 (1.07, 1.22)
Age at birth of first child ^e	1.96 (1.38, 2.77)	1.40 (0.97, 2.03)
Unemployment ^f	1.91 (1.24, 2.95)	1.38 (0.87, 2.19)
Women (n = 1614)^a		
Childhood socioeconomic score	1.10 (1.06, 1.14)	1.07 (1.02, 1.12)
Mother smokes ^b	2.04 (1.57, 2.65)	1.74 (1.32, 2.28)
Father smokes ^b	1.74 (1.33, 2.28)	1.37 (1.03, 1.82)
Age father left school ^c	0.67 (0.51, 0.88)	0.85 (0.64, 1.13)
Educational qualifications by 23 years of age ^d	1.68 (1.49, 1.89)	1.56 (1.37, 1.77)
Adult socioeconomic score	1.23 (1.17, 1.29)	1.10 (1.04, 1.18)
Age at birth of first child ^e	2.65 (2.01, 3.48)	1.66 (1.23, 2.23)
Single parent by 33 years of age ^f	2.83 (2.05, 3.89)	1.81 (1.26, 2.59)

Note. OR = odds ratio; CI = confidence interval.

^aSample with full data on all variables. The sample was fixed for all of the models in the table.

^bNonsmoker as baseline.

^cAge left full-time education > 16 years as baseline.

^dHigher education (beyond high school) as baseline.

^e≥ 23 years of age as baseline.

^f< 12 months out of labor force as baseline.

^gNot a single parent by 33 years of age as baseline.

and reinforces health inequalities.^{4,27} Third, we found that socioeconomic circumstances across the life course influence smoking persistence, a cumulative relationship that appears to be additive. Stronger effects were demonstrated for adulthood socioeconomic circumstances than for childhood socioeconomic circumstances. Poor childhood socioeconomic circumstances, which were measured by the occupation-based score, significantly increased the risk of persistent smoking only among women (although it could be argued that among men, an influence of childhood socioeconomic circumstances is indicated by the effects of parental education). These findings on persistent smoking extend the evidence from studies of current smoking. Among men, previous studies^{5–7} showed that adulthood socioeconomic circumstances are more important than childhood socioeconomic circumstances in predicting smoking. Among women, there is evidence that childhood or adolescent socioeconomic circumstances influence the risk of current smoking after adjustment for recent socioeconomic circumstances.^{8–10}

Fourth, we examined possible mediators in the association between childhood socioeconomic circumstances and smoking persistence, and we focused on structural factors rather than an individual's personality and psychology. The effect of parental smoking behavior, as identified in studies of adolescent smoking,^{13,14} was observed in our study. The stronger effect of father's smoking among men and of mother's smoking among women may be a marker of gender modeling, which is identified as an important mechanism for family influences on health behavior.¹³ Gender modeling—greater influence of parental behavior on children of the same gender than on those of the opposite gender—has been documented in few previous studies of children's smoking.²⁸

However, parental smoking did not explain the association between childhood socioeconomic circumstances and persistent smoking, and parental education was significant only among men. Factors related to the individual's pathways into adulthood were more important predictors. The individual's education level explained most of the association and had a strong graded effect on the odds of per-

sistent smoking. This is not surprising, and indeed education is an alternative socioeconomic measure, although it taps different dimensions.¹² Men and women who had no educational qualifications were most likely to smoke (compared with those who had qualifications above A level [adjusted OR=3.9 for men; adjusted OR=4.5 for women]). The influence of education on smoking is consistent with findings in other studies.^{9,10,29}

With respect to adulthood socioeconomic circumstances, we found that among men, the association remained even after we adjusted for educational level and other influences in childhood and adulthood. Among women, factors earlier in life, including educational level, partly explained the association between adulthood socioeconomic circumstances and persistent smoking. It may be the case that among women, childhood socioeconomic circumstances, mother's smoking, and participant's education level are the main factors underlying the association between persistent smoking and adulthood socioeconomic circumstances. Alternatively, adulthood socioeconomic measures that are based on occupation may be less adequate for women than for men.

Other socioeconomic factors, such as age at birth of first child, single parenthood, and unemployment, although important in their own right, did not substantially explain the pathways through which either childhood or adulthood socioeconomic circumstances act on persistent smoking. Young people's pathways into parenthood predicted persistent smoking; for example, even after we allowed for other potential influences, women and men who were teenage or early parents were 1.4 times more likely to be persistent smokers than were those who deferred parenthood. Women who were single mothers by 33 years of age were 1.7 times more likely than mothers in two parent families and women without children to be persistent smokers. The increased risk is consistent with previous research showing that single parenthood is a barrier to smoking cessation.³ Results from our study suggest that the domestic and the educational pathways have separate effects and capture reproductive and domestic aspects of socioeconomic circumstances among women. Among men, the experience of un-

employment in early adulthood increased the odds of persistent smoking, but the elevated risk did not reach statistical significance.

There is some evidence from previous research that unemployment is linked to higher rates of smoking.^{18,30} We also addressed the possibility that social mobility linked to adolescent smoking status (which relates to smoking persistence) may contribute to the influence of adult social measures on smoking persistence, and we found some evidence for this pathway.

Strengths and Weaknesses

With repeat measures of socioeconomic circumstances and smoking gathered prospectively, we were able to identify persistent smokers and to characterize their socioeconomic circumstances in childhood and adulthood. Our study also benefited from information on potential pathway factors between socioeconomic circumstances and smoking persistence. However, 1 potential limitation is that in our study, as in other population-based studies, smoking information was self-reported. Studies that compare self-reported smoking status with biochemical markers have generally found that self-reported data are reliable for population-based studies.^{31,32} Data from the Health Survey for England showed no systematic underreporting of smoking by social class when self-report data were validated with cotinine measures,³³ which suggests that self-report is unlikely to bias our findings. Like findings of all cohort studies, our results apply to a specific generation. Smoking is influenced by wider social and cultural trends, and our results may be specific to British adults in midlife. It also might be argued that the registrar general's measure of social class has limitations, particularly for women.^{11,24} Even so, it provides a relatively simple measure that is associated with life chances and health inequalities,²⁷ and its availability at each time point in our study permits differentiation of socioeconomic circumstances over a long period. Also, results obtained for social class were confirmed with housing tenure. Finally, sample biases detected in our study were small but were in the direction of underrepresentation of more deprived social groups, and this underrepresentation would tend to underesti-

mate the effect of social background on persistent smoking.

CONCLUSIONS

There is a substantial group of British men and women who are currently in midlife and who have smoked persistently from early adulthood. These persistent smokers are sharply differentiated by their adulthood socioeconomic circumstances. Childhood socioeconomic circumstances also appear to have been involved in socially differentiating smokers from non-smokers, especially among women. Education was a major pathway through which effects of childhood socioeconomic circumstances were transmitted in turn to persistent smoking in adulthood. These findings highlight the importance of social disadvantage across the life span in contributing to persistent smoking and health inequalities.

An appreciation of the influence of lifetime socioeconomic circumstances on persistent smoking widens the framework for tobacco control policy. It strengthens the case for dedicated programs to promote cessation among disadvantaged groups. More broadly, it suggests that policies that target smoking habits (restrictions on tobacco advertising and sale, investment in smoking education, cessation programs) should be complemented by policies that target the pathways of disadvantage that shape these habits.^{20,21} In this wider policy framework, welfare policies—providing education and training for young people likely to leave school early and likely to be early parents, lifting the living standards of poor households—would be explicit components of tobacco control programs to reduce adolescent recruitment into persistent smoking and to address the socioeconomic gradient in adult smoking. ■

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Contributors

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Human Participant Protection

Ethical committee approval for the 41-year survey was obtained from the North Thames Multi-Centre Research Ethics Committee.

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