



WHY DO POOR PEOPLE BEHAVE POORLY? VARIATION IN ADULT HEALTH BEHAVIOURS AND PSYCHOSOCIAL CHARACTERISTICS BY STAGES OF THE SOCIOECONOMIC LIFECOURSE

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Abstract—Attempts to explain socioeconomic inequalities in health have often made reference to the observation that poor health behaviours and psychosocial characteristics cluster in low socioeconomic status (SES) groups. Causal interpretation of the association between SES, health behaviour, psychosocial orientations, and health inequalities has been hampered because these factors and SES have usually been measured at the same point in time. Data from the Kuopio Ischaemic Heart Disease Risk Factor Study were used to examine the associations between measures of SES reflecting different stages of the lifecourse, health behaviours, and psychosocial characteristics in adulthood in a population-based study of 2674 middle-aged Finnish men. Results show that many adult behaviours and psychosocial dispositions detrimental to health are consistently related to poor childhood conditions, low levels of education, and blue-collar employment. Poor adult health behaviours and psychosocial characteristics were more prevalent among men whose parents were poor. Increases in income inequality which place children into low SES conditions may well produce a negative behavioural and psychosocial health dividend to be reaped in the future. Understanding that adult health behaviour and psychosocial orientations are associated with socioeconomic conditions throughout the lifecourse implies that efforts to reduce socioeconomic inequalities in health must recognize that economic policy is public health policy. © 1997 Elsevier Science Ltd. All rights reserved

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The existence of socioeconomic inequalities in health has been well established. Attempts to explain these inequalities have often made reference to the fact that behavioural factors, such as smoking, physical activity, and diet, are differentially distributed by socioeconomic levels. In addition, psychosocial characteristics, such as depression and cynical hostility, have also been considered as potential explanations for why people at the bottom of the social hierarchy have poorer health [1]. Indeed, considerable evidence has accumulated concerning an inverse relationship between socioeconomic status (SES) and the behavioural and psychosocial characteristics which are important risk factors for poor health. Studies in a variety of industrial countries have shown that lower SES is generally associated with higher rates of smoking [2–5], obesity [6–8], poorer dietary habits, [9–11] lower levels of physical activity [12–15], and higher prevalence of psychosocial orientations that are related to poor health outcomes [16–18], while a more complex relationship between SES and

alcohol consumption has been reported [5, 19, 20]. Furthermore, those who occupy lower positions in the socioeconomic hierarchy have also been shown to be more resistant to changing risk behaviours than their more advantaged counterparts [21, 22].

What part should health behaviours and psychosocial orientations play in understanding the graded association between lower SES and poorer health, and informing intervention efforts [23, 24]? Both the explicit and implicit models of behavioural and psychological change that have been used in public health can be broadly classified according to how much emphasis they place on the role of human volition. One model is strongly based on the premise that adult health behaviours are largely intra-individual phenomena which reflect some process involving free choice. This approach, which views unhealthy behaviours as the consequence of poor lifestyle management, gained credence as risk factor epidemiology confirmed that many poor health outcomes were associated with the daily conduct of people's lives [25]. Knowles' ideas on individual responsibility for health [26] provided the sort of theoretical foundation from which the U.S. Surgeon

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General, and his counterparts in other countries, could later chastise their populations for poor health habits and point out the costs to society of such behavioural transgressions [27].

There are many current examples that, at least implicitly, reflect this thinking about SES, behaviour, and disease [28]. McGinnis and Foege [29] present an analysis of U.S. data to demonstrate what they characterize as the "...root determinants of death and disability" (p. 2211). They report that tobacco, alcohol, diet and physical activity are the major contributors to mortality before age 75. While they also point out that SES is an important factor in premature mortality, they argue that it is difficult to quantify the SES effect independent of smoking, alcohol, diet and physical activity, and they conclude that these public health problems are squarely based in behavioural choices.

The other model of health behaviour agrees that while individuals make choices about how they act, those choices are situated within economic, historical, family, cultural and political contexts. According to this view, these contexts exert important influences on both the process of choice and the types of behavioural options which are available and, indeed, appropriate. A number of authors have argued that decontextualizing behaviour from this real-world setting obscures its socioeconomic production and encourages blaming the victims of inequality for their unhealthy lifestyles [30-33]. According to this approach, evidence that health behaviours are differentially distributed by SES should be viewed in a lifecourse perspective, as the cumulative responses of different classes of people to conditions imposed by the social structure [34-36].

The degree to which differences in psychosocial orientations and health behaviours contribute to socioeconomic inequalities in health has usually been assessed in regression models in which the relationship between adult SES and a health outcome is adjusted for a variety of adult risk factors. In other analyses of the same population as the current study, we have shown that statistical adjustment for smoking, physical activity, and alcohol consumption reduced the excess relative hazard of all-cause mortality in the lowest quintile of income earners by 35%, by 50% for cardiovascular mortality, and by 34% for incident myocardial infarction. Similar adjustment for a number of psychosocial orientations, such as depression and hopelessness, decreased the excess relative hazard for the lowest income quintile by 48% for all-cause mortality, 57% for cardiovascular mortality, and by only 3% for incident infarctions [37]. While there is no method to quantify the degree of confounding in such studies, it is commonplace to claim that because only a portion of the increased risk is "explained" by the covariates, there remains some residual "independent" effect of SES. One impli-

cation of this approach would be that if 100% of the increased risk was accounted for by statistical adjustment of covariates, then the effect of SES would be "explained". There are both methodological and conceptual difficulties with this line of reasoning.

A number of studies have demonstrated that in multivariate models containing large numbers of correlated confounders measured with error, both the direction and magnitude of bias in the variable of interest are unpredictable [38-40]. In such circumstances, it is possible that the elevated or diminished risk estimates for SES, observed after adjustment for behaviours and psychosocial characteristics, may be at least partly due to imprecise measures of those factors. Thus, the widespread practice of declaring that any suspected etiologic factor is independent of another may be potentially misleading, unless the underlying measurement error structures of the variables have been assessed. Unfortunately, data of this type are almost never available in epidemiologic studies.

Much more important than the technical difficulties of interpreting such analyses is that they are conceptually uninformative. Most often, SES, health behaviours, and psychosocial characteristics are assessed at the same point in time, making it impossible to disentangle the temporal sequencing of SES and these factors. For instance, if social class position in childhood and educational experiences were important in the adoption and maintenance of adult health behaviours, or influential in the development of psychosocial orientations, then it would be inappropriate to "adjust" for these variables, because the SES exposure would be temporally prior to the behaviours, and so the behavioural and psychosocial characteristics would be in the causal pathway. Consequently, "explanations" of the relationship between SES and health in terms of behaviour and psychosocial characteristics would be limited to describing some pathways through which SES impacts health [37]. In order to sort out these temporal sequences, long-term studies are needed in natural population settings which can trace the development of health behaviours and psychosocial orientations over the entire lifecourse.

However, as data of this type are rarely available, we hope to advance understanding of the relationship between behaviours, psychosocial characteristics, and socioeconomic health inequalities by examining their associations with SES at three temporally distinct stages of the lifecourse—during childhood (measured by parental SES at age 10), adolescence (measured by education) and adulthood (measured by occupation). While many earlier studies have shown associations between adult SES and a limited number of health behaviours or psychosocial orientations, this is the first to simultaneously examine in the same population-based

cohort the SES patterns for a comprehensive array of important behavioural and psychosocial factors, including smoking, alcohol consumption, drunkenness, obesity, physical activity, depression, cynical hostility, hopelessness, sense of coherence, and dietary intake of fruit, vegetables, fat, salt, coffee and vitamins. Moreover, to our knowledge this is the also the first study to examine the SES patterns of these adult behaviours and psychosocial orientations to SES during childhood.

METHODS

Setting

Kuopio is the major provincial centre in eastern Finland, with about 600,000 people in its sphere of influence. The city and suburbs of Kuopio have a population of 85,000, making it Finland's eighth largest city. The economic base of the region is dominated by wood processing industries, farming and food processing, clothing manufacturing, metal industries, and service industries. The largest individual employers are the regional government, the university and its hospital.

Study population

Subjects were participants in the Kuopio Ischaemic Heart Disease Risk Factor Study, which was designed to investigate previously unestablished risk factors for ischemic heart disease, carotid atherosclerosis and other related outcomes in a population-based sample of Eastern Finnish men [41]. The study population consisted of a 33% random sample of men aged 42 ($n = 334$), 48 ($n = 356$), 54 ($n = 1589$) and 60 ($n = 398$) who resided in the town of Kuopio or its six adjacent rural communities. Of the 3343 eligible men, 198 were not included because of death, serious disease or migration away from the area, and of the remainder, 2682 (82.9%) agreed to participate in the study. Baseline examinations were conducted between March 1984 and December 1989. No marked socio-demographic differences have been found between participants and non-participants [42]. Men were evenly employed in blue- (44%) and white-collar occupations (40%), while 16% were engaged in farming or forestry. Seventy one percent resided in the city of Kuopio or its suburbs, while 30% of men lived in more scattered rural dwellings. Approximately 87% were married, 6.5% were widowed or divorced, while 7% had never married.

MEASURES

Socioeconomic status in childhood, adolescence and adulthood

At the baseline examination, individuals reported various aspects of their childhood at the age of 10 years, such as their parents' sociodemographic

characteristics, home environment and childhood experiences. An index of childhood socioeconomic conditions was based on six items—father's education and occupation, mother's education and occupation, whether or not the family lived on a farm, the size of that farm, and the degree to which their family was perceived as wealthy. These six items were dichotomized and the scores summed to form an index of childhood socioeconomic conditions. Subjects were classified according to approximate index tertiles as either high ($n = 557$), medium ($n = 1198$) or low ($n = 928$) childhood socioeconomic status. In previous analyses, this scale has been shown to be predictive of an indicator of coronary heart disease [43].

In addition, participants completed detailed questionnaires which included items on education and lifetime occupation. In the present analyses, we used information on the highest level of education received to indicate SES during adolescence and early adulthood. Participants were grouped into those who had received "primary schooling or less" ($n = 1555$), "some high school" ($n = 939$), and those who had "completed high school or better" ($n = 180$). Socioeconomic status in adulthood was measured by occupational type and classified as "farmer" ($n = 425$), "blue-collar" ($n = 1168$), or "white-collar" ($n = 1042$). Both the education and occupation measures have been demonstrated to be associated with atherosclerosis, acute myocardial infarction, and mortality in this population. [44].

The adult socioeconomic context

A variety of other measures which more fully characterized the economic context of different adult SES positions were available for this analysis. These included current income, housing tenure, financial and job insecurity, unemployment, history of work injury, and disability or early retirement. In addition there were 13 questions concerning ownership of material possessions (colour TV, dishwasher, car, telephone, etc.) A summary index of material living conditions was created by counting the number owned [45].

Adult health behaviours and psychosocial characteristics

Extensive behavioural risk factor information was collected as part of the baseline examinations. Smoking was measured by questionnaire and is classified for this analysis as "never smoked", "former smoker", and "current smoker" (measured in pack-years). Alcohol consumption was assessed by dietary record for a four-day period and also for the previous 12 months by self-administered questionnaire [46]. The alcohol consumption distribution was divided into quartiles and a separate category created for abstainers. In addition, participants also reported how often they were drunk. Physical activity was assessed by a 12-month leisure-time his-

tory, from which the amount of energy expended in conditioning physical activity was calculated [47]. Energy expenditure scores were divided into quartiles and a separate category created for those who reported engaging in no conditioning activities. Body mass index was calculated by dividing the subject's weight by the square of his height (kg/m^2), and the distribution was divided into quartiles.

Dietary intake of foodstuffs was assessed by a four-day food recording [46]. The recording covered three working days and one weekend day. Instructions were given verbally and in writing by a nutritionist who also checked the records in an interview one or two days after the last recording. Information was collected on about 500 food items and 400 dishes. Foodstuffs were converted to approximately 60 nutrients on the basis of the average nutrient content of Finnish food.

Hopelessness was assessed with two questionnaire items, scored on a five-point Likert scale, and the distribution of scores was divided into tertiles [48]. Depression was assessed from a shortened 180-item version of the MMPI, which had been previously used in Finnish populations. Raw scores were converted to *t*-scores, and the distribution divided into quartiles. The highest quartile corresponded to a *t*-score greater than 75. Cynical hostility was assessed from a shortened version of the Cook-Medley hostility scale, and the distribution of scores was divided into quartiles [49]. Sense of coherence was assessed by the scale devised by Antonovsky [50], minus one item for which there was no Finnish translation, and the distribution of scores was divided into quintiles [51].

Statistical analysis

Age-adjusted mean levels of income, current cigarette smoking, and the dietary variables (except coffee) were calculated for each level of childhood SES, education and occupation using the GLM

procedure in SAS Version 6.09 on a Sun Sparc Station II [52]. For all other behavioural factors, and psychosocial characteristics, age-adjusted rates were calculated directly for each level of childhood SES, education and occupation. The relationships between SES measures and dietary variables were additionally adjusted for total dietary energy intake.

RESULTS

Socioeconomic lifecourse stage and features of the economic context

Table 1 presents age-adjusted means or proportions according to socioeconomic lifecourse stage and various features of the adult economic context. While not integral to the major aim of this paper, these associations depict better the socioeconomic milieu in terms of income, housing tenure, material possessions, job and financial insecurity, experiences of unemployment, work injury and disability that are attendant to occupying different SES positions over the lifecourse.

Table 1 shows that there are important differences in every aspect of the adult economic context for each SES stage measure. Men whose parents were wealthy, who received more than a high school education, or who worked in white-collar jobs were more likely to own their home, have a high number of material possessions, and have lower rates of financial and job insecurity, unemployment, work injury and disability or early retirement. While significant, graded associations were evident for the childhood stage, SES differences were even more marked when education and occupation were considered. Compared to men who had received more than a high school education, those with only primary schooling had 61% lower mean incomes, were three times more likely to not own their home and to report low financial security, were 20 times more

Table 1. Features of the economic context (age-adjusted mean or age-adjusted proportion) by stage of the socioeconomic lifecourse

Socioeconomic lifecourse stage	Mean income FIN marks	% Not owning a home	% High quartile material possessions	% Low financial security	% High job insecurity	% Unemployed last 5 yrs	% Injured at work	% Early disability retirement
<i>Childhood</i>								
Poor (<i>n</i> = 928)	71,676 ^a	14.7	18.4 ^a	15.6 ^a	26.7 ^a	20.7 ^a	62.7 ^a	24.3 ^a
Middle (<i>n</i> = 1198)	82,430 ^a	15.0	26.2	12.0	20.3	18.6 ^a	53.9 ^a	22.3
High (<i>n</i> = 557)	99,263	11.2	30.5	8.9	20.4	12.6	46.0	18.7
<i>Education</i>								
Primary or less (<i>n</i> = 1555)	64,466 ^a	16.2 ^a	21.4 ^a	14.2 ^a	27.7 ^a	23.0 ^a	62.0 ^a	26.0 ^a
Some high school (<i>n</i> = 939)	90,315 ^a	12.5 ^a	27.4 ^a	11.3 ^a	19.7 ^a	15.3 ^a	51.3 ^a	18.5 ^a
Finished high or better (<i>n</i> = 180)	165,440	5.6	39.6	4.7	8.1	1.3	17.8	9.5
<i>Occupation</i>								
Farmer (<i>n</i> = 425)	59,332 ^a	4.1 ^a	21.3 ^a	15.9 ^a	18.9	7.8	66.3 ^a	18.7
Blue-collar (<i>n</i> = 1168)	67,225 ^a	18.7 ^a	19.8 ^a	15.7 ^a	29.8 ^a	30.4 ^a	67.8 ^a	30.0 ^a
White-collar (<i>n</i> = 1042)	106,463	11.6	31.5	7.9	17.2	8.5	38.5	15.6

^aDifferences between specified category and highest category (e.g. high childhood or white-collar) significant at $P < 0.05$.

Table 2. Adult risk factor behaviour (age-adjusted means or age-adjusted proportion) by stage of the socioeconomic lifecourse

Socioeconomic lifecourse stage	Cigarette smoking			Alcohol		Drunkenness			Physical activity ^b		Obesity	
	% Non-smoker	% former smoker	Mean pack-yr current	% Abstainer	% High quartile consumption	% Drunk > 2-3 times per month	% No condition. activity	% Low quartile condition. activity	% High quartile BMI (≥29)			
Poor (n = 928)	27.7	38.6	176.3	11.7	22.0	19.6 ^a	16.3	29.9 ^a	22.4			
Middle (n = 1198)	25.6	42.2	164.6	14.1	24.3	19.4	17.0	30.4 ^a	25.2			
High (n = 557)	27.5	41.6	147.0	10.6	22.4	14.7	15.9	24.2	22.8			
Primary or less (n = 1555)	22.2 ^a	41.5	195.0 ^a	14.2 ^a	24.2	21.6 ^a	18.7 ^a	35.2 ^a	26.2			
Some high school (n = 939)	31.8	40.8	134.8	11.5 ^a	21.5	15.3 ^a	15.9	22.9 ^a	21.7			
Finished high or better (n = 180)	32.1	39.5	104.4	5.5	22.2	8.7	10.8	15.9	21.0			
Farmer (n = 425)	40.0 ^a	31.1 ^a	159.2 ^a	21.0 ^a	13.2 ^a	9.0	18.5 ^a	45.0 ^a	25.0			
Blue-collar (n = 1168)	20.3 ^a	41.7	218.5 ^a	14.0 ^a	26.2	24.1 ^a	21.0 ^a	32.4 ^a	24.6			
White-collar (n = 1042)	30.1	41.2	129.7	8.2	22.9	14.7	11.4	19.8	23.2			

^aDifferences between specified category and highest category (e.g. high childhood or white-collar) significant at P < 0.05.

^bEnergy expenditure in conditioning physical activities such as jogging, swimming, cycling and skiing.

likely to have been unemployed in the previous five years, and had work injury rates which were 250% higher.

Socioeconomic lifecourse stage and adult smoking, alcohol consumption, physical activity and obesity

Table 2 shows the age-adjusted proportions of men at each stage of the socioeconomic lifecourse who were non-smokers, former smokers and current smokers (age-adjusted mean level in pack-years), who were abstainers from alcohol consumption, or who were in the highest 25% of consumers, and those who reported being drunk more than two to three times each month, who were either completely physically inactive in their leisure-time, or who were in the lowest 25% of energy expenditure in such activities, and who had BMI scores above 29 (highest 25%).

While there were no statistically significant differences in smoking behaviour across levels of childhood SES, the pattern of associations demonstrated that those with the poorest starts in life were more likely to have the highest pack-years of exposure to current smoking. Smoking was strongly associated with education and occupation. The least educated group had significantly fewer non-smokers (22.2%), and the highest mean levels of current smoking (195.0 pack-years). Blue-collar workers had the lowest rates of non-smoking (20.3%), and the highest mean exposure for current smokers (218.5 pack-years).

The amount and pattern of alcohol consumption presented interesting differences at each stage of the socioeconomic lifecourse. Across levels of childhood SES there were no differences between the proportions of men who abstained, or were in the highest 25% of alcohol consumers. However, those who were born into high childhood SES were significantly less likely to report frequent bouts of drunkenness than men from less advantaged homes. When examined according to educational level, those who received only a primary school education were the most likely to be abstainers, but men who consumed alcohol in this group were 2.5 times more likely to report frequent episodes of drunkenness than those who received more than a high school education. Farmers were the most likely to abstain from alcohol (21.0%) and least represented in the highest quartile of consumption. Blue-collar workers reported significantly higher levels of frequent drunkenness (24.1%).

Men born into the most advantaged conditions were significantly less likely to be in the low quartile of conditioning physical activity. Men in the least educated group were significantly more likely to be among those who reported both no activity (18.7%) or being in the lowest 25% of energy expended in conditioning leisure-time physical activity (35.2%). In terms of the occupational association with leisure physical activity, both farmers and blue-collar

Table 3. Adult Diet (age-adjusted mean or age-adjusted proportion) by stage of the socioeconomic lifecourse (also adjusted for total energy intake)

Socioeconomic lifecourse stage	Fruit gm/day	Non-root veges. gm/day	Total fat gm/day	Saturated fat gm/day	Cholesterol mg/day	Salt mg/day	Vitamin C mg/day	Carotene ug/day	% High tertile coffee
<i>Childhood</i>									
Poor (<i>n</i> = 928)	98.0*	83.0*	113.1	55.5	452.8	3433.6*	85.9*	2453.2*	36.9*
Middle (<i>n</i> = 1198)	124.7	89.5*	111.6	54.2	455.1	3302.0	89.6	2666.8	33.8*
High (<i>n</i> = 557)	135.2	97.4	111.9	54.7	440.1	3248.9	93.2	2757.0	27.2
<i>Education</i>									
Primary or less (<i>n</i> = 1555)	99.9*	80.4*	113.1*	56.1*	456.8	3412.0*	82.8*	2277.3*	37.6*
Some high school (<i>n</i> = 939)	133.6*	94.9*	111.7	53.8*	446.5	3269.7	93.3*	2914.4	29.3
Finished high or better (<i>n</i> = 180)	163.1	118.4	110.1	51.8	442.8	3188.4	111.8	3309.5	22.3
<i>Occupation</i>									
Farmer (<i>n</i> = 425)	97.7*	73.5*	113.0*	59.5*	456.4	3304.7	83.0*	2217.3*	45.2*
Blue-collar (<i>n</i> = 1168)	103.0*	79.6*	113.3*	55.2*	449.4	3392.6*	82.6*	2298.0*	38.3*
White-collar (<i>n</i> = 1042)	141.9	103.7	111.3	53.0	453.3	3276.5	98.2	3076.1	26.4

*Differences between specified category and highest category (e.g. high childhood or white-collar) significant at *P* < 0.05.

workers were over-represented in the inactive and barely active groups. There was no clear pattern for obesity by childhood SES, but the least educated men were more likely to be obese adults, although the graded association was not statistically different.

Socioeconomic lifecourse stage and adult diet

Table 3 presents age and energy intake-adjusted mean levels of various dietary factors (age-adjusted proportion for coffee consumption) at each stage of the socioeconomic lifecourse. There were significant graded differences across levels of childhood SES for consumption of fruit, non-root vegetables, salt, vitamin C, carotene and coffee. Men born into the poorest childhood circumstances had 28% lower intake of fruit, 15% lower non-root vegetables, 12% lower carotene, 8% lower vitamin C, 6% higher levels of salt and were more likely to be heavy coffee consumers than those most advantaged during childhood. These differences became even more striking when examined by subsequent educational experience. Significant graded differences were evident for fruit, non-root vegetables, total fat, saturated fat, salt, vitamin C, carotene and coffee intake, with the least educated group having the poorest overall dietary profile. Men with only primary education consumed 39% less fruit, 32% fewer non-root vegetables and 8% more saturated fat compared to men with more than a high school education. White-collar workers had significantly better overall dietary profiles than farmers or blue-collar workers, due to significantly higher intakes of fruit, non-root vegetables, vitamin C and carotene, but lower consumption of total and saturated fat, salt, and coffee.

Socioeconomic lifecourse stage and adult psychosocial characteristics

Table 4 shows the age-adjusted proportions of men in the highest tertiles of hopelessness, and quartiles of depression, and cynical hostility, and the lowest quintile of sense of coherence at each stage of the socioeconomic lifecourse. At the childhood stage, men whose parents were wealthier had significantly lower rates of hopelessness (6%) and cynical hostility (19.1%) as adults. Similar but statistically insignificant differences were also seen for depression and sense of coherence. Men with only primary schooling had rates of hopelessness which were 10 times higher than men who received more than a high school education. This least educated group also experienced 46% higher rates of depression and 240% higher rates of cynical hostility. Blue-collar workers were consistently more likely to report significantly elevated rates of hopelessness (12.8%), depression (25.2%), cynical hostility (30.0%), and low sense of coherence (21.8%) compared to white-collar workers.

Table 4. Adult psychosocial characteristics (age-adjusted proportion) by stage of the socioeconomic lifecourse

Socioeconomic lifecourse stage	% High tertile hopelessness	% High quartile depression	% High quartile cynical hostility	% Low quintile sense of coherence
		<i>Childhood</i>		
Poor (n = 928)	10.7 ^a	20.2	24.7 ^a	19.2
Middle (n = 1198)	10.1 ^a	22.4	25.1 ^a	19.5
High (n = 557)	6.0	18.6	19.1	16.6
		<i>Education</i>		
Primary or less (n = 1555)	12.0 ^a	24.0 ^a	28.4 ^a	21.7
Some high school (n = 939)	7.3 ^a	19.6	20.0 ^a	15.4
Finished high or better (n = 180)	1.3	16.4	11.2	16.4
		<i>Occupation</i>		
Farmer (n = 425)	8.4	22.9	21.6	18.4
Blue-collar (n = 1168)	12.8 ^a	25.2 ^a	30.0 ^a	21.8 ^a
White-collar (n = 1042)	5.6	17.7	18.8	15.7

^aDifferences between specified category and highest category (e.g. high childhood or white-collar) significant at $P < 0.05$.

Socioeconomic lifecourse pathways—the connections between childhood, education and occupation

In order to show the important structural relationships between childhood origins, educational experiences, and occupational outcomes, we arrayed childhood SES by education (Fig. 1), and education by occupation (Fig. 2) to illustrate the normative socioeconomic pathways along which this cohort of men moved during their lifecourses. Figure 1 shows that 70% of men whose parents were poor received primary schooling, while 2.1% received more than a high school education. In contrast, 40.2% of men who were born into wealthy families received primary schooling, while 15.8% completed a high school education or better.

The distribution of occupation according to education (Fig. 2) showed that 97.7% of men who completed a high school education took up white-collar employment, while only 20.6% of men with

primary education gained white-collar jobs. Men with the lowest level of education were most likely to find jobs in the blue-collar sector (57.6%)

DISCUSSION

The results presented here show that a large number of adult health behaviours and psychosocial characteristics, which have all been shown to be importantly related to disease risk, exhibit similarly graded associations with SES at temporally distinct stages of the lifecourse. While the observation that adult health behaviours are related to adult SES is not new, data showing that the health-related behaviours and psychosocial characteristics of adult men are associated with the social class of those men's parents has, to our knowledge, only been previously reported for obesity [53]. This observation could be seen as important, given Barker's [54–56] claims that conditions *in utero*, which would be influenced

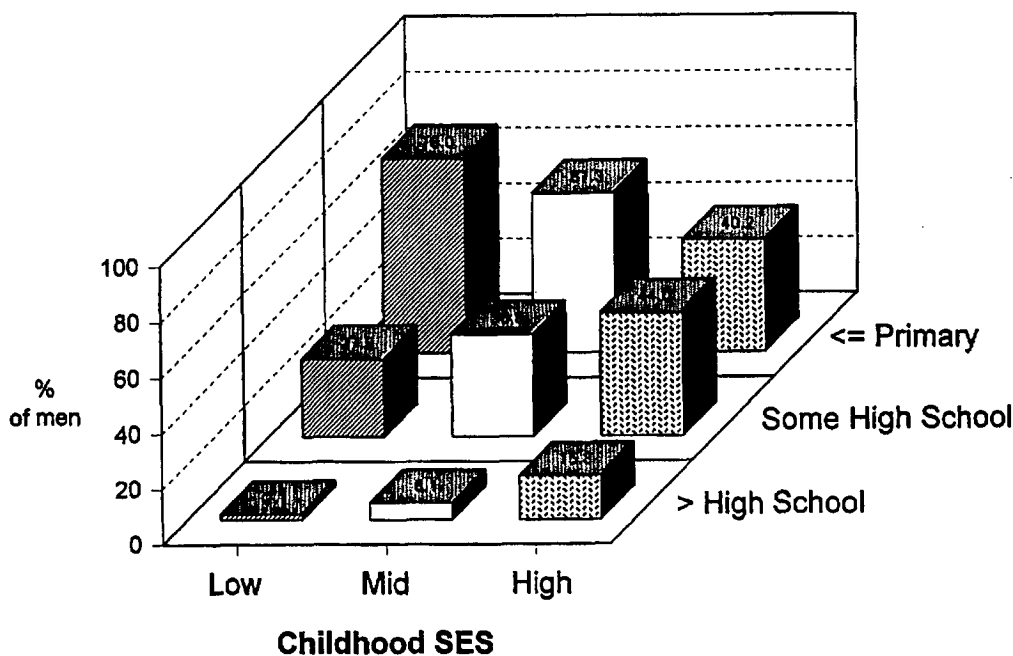


Fig. 1. Socioeconomic lifecourse pathways—childhood SES to education.

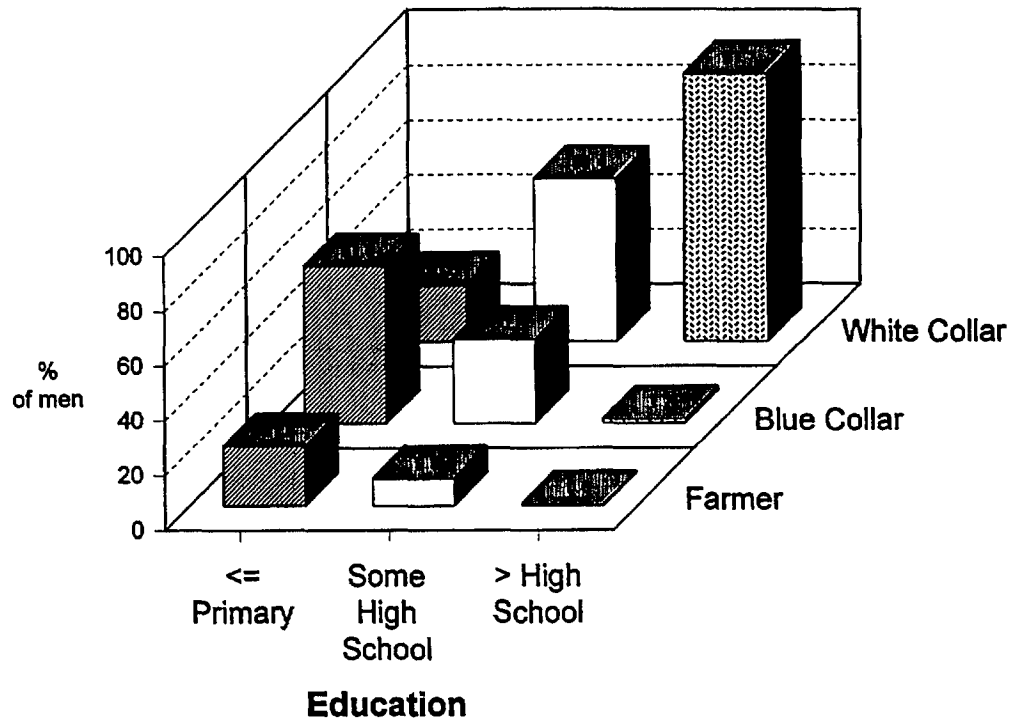


Fig. 2. Socioeconomic lifecourse pathways—education to occupation.

by maternal and paternal SES, are related to adult disease risk.

Some health behaviours such as diet and physical activity were strongly associated with inherited childhood conditions and may track over the lifecourse [57]. Bourdieu [58] has shown in exquisite detail how tastes for food, music, art, furniture and a whole range of lifestyle factors are symbolic of a particular class position. The observation that diet and physical activity were strongly related to childhood SES may merely reflect the age at which particular behaviours or proclivities became established in the habitual repertoires of these men. Differences in smoking were more strongly associated with education and occupation. Smoking behaviour was adopted later in the lifecourse than dietary practices and so may be more sensitive to different occupational environments and workplace cultures. Farmers and blue-collar workers were more likely to be occupationally engaged in strenuous physical activity, and so it is hardly surprising that they do not engage in strenuous leisure-time pursuits.

The data on the amount and pattern of drinking suggested that the most advantaged groups educationally and occupationally had the lowest rates of abstention and the highest amount consumed. This trend probably reflects the high price of alcohol in Finland, so that those with the lowest incomes may find alcoholic beverages too expensive to purchase. However, the pattern of drinking showed a consistent opposite association, with significantly higher rates of drunkenness in the poorest

childhood group, in the less educated, and in blue-collar workers. Hopelessness, depression and cynical hostility all showed graded, inverse associations with SES at every stage of the socioeconomic lifecourse.

The association between adult socioeconomic status and health behaviour exists, at least in part, because adult SES destinations depend on childhood SES origins [59]. As we have shown in Figs 1 and 2, men born into high, middle or low socioeconomic circumstances have different probabilities of receiving a certain education, which in turn affects the likelihood of being employed in farming, white- or blue-collar sectors. While these different socioeconomic lifecourse pathways are complicated by mobility both up and down the social hierarchy, normative patterns exist which represent the most common lifecourses.

Beginning with the data on economic milieu showed in Table 1, it is perhaps not surprising that those who were born to poor parents, received little education, and ended up in low paid blue-collar work were the most materially disadvantaged, had higher job and financial insecurity, and experienced more unemployment and work injury. It is not coincidental that these were the same men who tended to smoke more, exercise less, eat less nutritious diets, get drunk more often, have a cynically hostile outlook, and not feel full of hope about the future. While there are a few exceptions, the patterns of adult health behaviours and psychosocial characteristics show remarkably consistent associations with

the childhood, educational and occupational stages of the socioeconomic lifecourse and are supportive of the notion that adult health behaviours and psychosocial characteristics have SES roots early in life.

While our data cannot show which specific factors are responsible for the differences in behaviour and psychosocial orientation we observed at each stage of the SES lifecourse, it seems likely that there are different constraints, supports, opportunities, and encouragements for the development, maintenance and extinction of particular health behaviours and psychosocial orientations. A disadvantaged socioeconomic lifecourse pathway does not necessarily make choices of good health behaviour impossible. However, it may be characterized by different social constructions of which behaviours are associated with "good health", as well as different reinforcements and constraints, all of which exert important influences on the overall adult behavioural and psychosocial profile [60].

Perhaps the most striking aspect of these findings is that adult behaviours and psychosocial orientations are patterned by childhood SES, and so do not provide support for the "free choice" conception of adult behaviour, because in this view adult health behaviour would be unrelated to childhood conditions. Socioeconomic status at birth is not chosen, so it seems difficult to argue that the subsequent normative level of education for any particular childhood SES group is freely "chosen", or in fact that people then "choose" their subsequent occupation. In this light, the concept that individuals somehow choose their socioeconomic pathway through life is too simplistic. Understanding the contribution of health behaviours and psychosocial characteristics to socioeconomic health inequalities requires an acknowledgment of how they are moulded over time by the SES conditions imposed at each stage of the lifecourse.

There are a number of issues which we believe are important in considering the wider implications of these findings for health inequalities, both now and in the future. First, our results indicate that poor adult health behaviours and psychosocial orientations are more prevalent among men whose parents were poor. As Evans *et al.* and others have argued, health behaviours should be conceptualized as responses to environmental conditions, so that a meaningful interpretation can be made of the observation that many poor health behaviours cluster in lower SES groups [61]. Given the disturbing increases in income inequality which have recently been documented in the United States, Great Britain, and other industrial countries, it is vital to consider the health impact of placing ever larger numbers of families with children into low SES groups [62, 63]. In addition to placing children into conditions which are detrimental to their immediate

health status, there may well be a negative behavioural and psychosocial health dividend to be reaped in the future. The impact of these structural adjustments to income distribution is even more frightening in light of reduced commitments to public education and welfare programmes which might offer some opportunities for social advancement. As we have argued previously, the impact of poor childhood conditions on adult disease risk might be ameliorated by upward social mobility [35].

Second, finding that a variety of poor health habits and psychosocial dispositions clusters in lower SES groups has implications for public health policy. It is perhaps tempting to imagine that the behavioural and psychosocial characteristics associated with a lack of education can be remedied by adult health education, but the evidence that health inequalities can be decreased by "targeting" low SES groups for behavioural modification is less than encouraging [64]. This approach already commands much attention in current public health policy and is consistent with the broader logic of market-based economic efficiency. One of the key principles in the idea that markets are the most efficient arbiters of the economy is that individuals will, if unencumbered by regulation, seek to advance their own economic self-interest [65]. Under this system, it is not surprising that placing individuals at the centre of economic rationality also places them as the focus for all aspects of behavioural responsibility. More important than the limitations imposed by the low efficacy of these behavioural interventions is that altering the behaviours of the current adult population will do little to change the socioeconomic conditions which may generate these same behavioural and psychosocial characteristics in the next generation.

While Finland and the other Nordic nations are the most developed welfare states, even they have come under increasing pressure to apply the logic of the free market to their economies [66]. In the Kuopio region of Finland, market globalization, the collapse of the Soviet Union as a trading partner, and the specific changes in farming and manufacturing policies attendant to entry into the European Union have caused increases in unemployment of more than 100% since the 1980s. It is uninformative to conceptually isolate the behaviours and psychosocial orientations which are associated with poor health outcomes from their SES roots [67]. If the desire for economic efficiency is to be a central theme of the processes which shape late industrial societies, then it is entirely possible that the most efficient way to reduce the disease burden associated with poor health behaviours and psychosocial characteristics is to improve the socioeconomic conditions which generate them.

The evidence presented here sheds some light on answering the rhetorical question posed in the title of this paper. We have shown that poor adult

health behaviour and psychosocial characteristics are importantly related to a poor socioeconomic start in life, low levels of education and blue-collar employment. These findings suggest that childhood, adolescence and adulthood are all potentially important stages for attempts to alter the health-related behavioural and psychosocial profiles of adults. Understanding that adult health behaviour and psychosocial orientations are associated with socioeconomic conditions throughout the lifecourse implies that efforts to reduce socioeconomic inequalities in health must recognize that economic policy is public health policy.

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