gives some indication of the severity of infections and thus of the effectiveness of trial therapy, but the interventions may also have reduced daily symptom scores. The small differences between the groups are, however, consistently in favour of the treatment group, so that the difference in mean daily symptom score cannot have been brought about by the use of more antibiotics. The difference might have been slightly reduced by greater use of antibiotics in the placebo group. In conclusion, the observed differences between the groups were small but consistent. The clinical relevance, however, is questionable.

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Educational status, coronary heart disease, and coronary risk factor prevalence in a rural population of India

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Abstract

***Objective*—To define the association between educational level and prevalence of coronary heart disease and coronary risk factors in India.**

***Design*—Total community cross sectional survey with a doctor administered questionnaire, physical examination, and electrocardiography.**

***Setting*—A cluster of three villages in rural Rajasthan, western India.**

***Subjects*—3148 residents aged over 20 (1982 men, 1166 women) divided into various groups according to years of formal schooling.**

***Results*—Illiteracy and low educational levels were associated with less prestigious occupations (agricultural and farm labouring) and inferior housing. There was an inverse correlation of educational level with age (rank correlation: men −0·45, women −0·49). The prevalence of coronary heart disease (diagnosed by electrocardiography) was significantly higher among uneducated and less educated people and showed an inverse relation with education in both sexes. Among uneducated and less educated people there was a higher prevalence of the coronary risk factors smoking and hypertension. Educational level showed a significant inverse correlation with systolic and diastolic blood pressure. Logistic regression analysis with adjustment for age showed that educational level had an inverse relation with prevalence of electrocardiographically diagnosed coronary heart disease (odds ratio: men 0·82, women 0·53), hypertension (men 0·88, women 0·56), and smoking (men 0·73, women 0·65) but not with hypercholesterolaemia and obesity. The inverse relation of coronary heart disease with educational level abated after adjustment for smoking, physical activity, body mass index, and blood pressure (odds ratio: men 0·98, women 0·78).**

***Conclusion*—Uneducated and less educated people in rural India have a higher prevalence of coronary heart disease and of the coronary risk factors smoking and hypertension.**

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Introduction

In developed countries low social class is an important determinant of coronary heart disease incidence as well as of mortality.[1,2] Coronary risk factors also are more prevalent in lower social classes.[3,4] In developed countries educational level accurately reflects social class and may be a more important risk factor than social or economic class alone.[5,6] However, studies from developing countries have shown no such correlation. The few studies from rural and urban areas of India that have examined this question[7-10] suggest that coronary risk increases with social class and that coronary heart disease is more common among wealthier groups.[7] Socioeconomic strata and prevalence of coronary risk factors have not been studied adequately in other developing countries.[11]

To define the association between level of education and the prevalence of coronary heart disease and coronary risk factors we performed a cross sectional survey in a rural population of Rajasthan, India. Rural areas of Rajasthan have a high prevalence of illiteracy (45% of men, 70% of women)[12] and provide a useful model for assessing the influence of illiteracy and of different levels of education on various coronary risk factors and the prevalence of coronary heart disease.

Methods

A doctor administered questionnaire was prepared according to guidelines of the World Health Organisation,[13] and United States National Institutes of Health.[14] The questionnaire included social factors such as details of education, housing, and type of job. Subjects who had not received any formal education were placed in the uneducated group (group 1). Number of years of education was calculated from the highest class achieved in school or college. Educated subjects were subdivided in groups of five years: up to five years of education (group 2) corresponded to primary school level, up to 10 years (group 3) to secondary school level, and more than 10 years (group 4) to higher secondary or college level education. Size of income was ignored because accurate estimates of income are not generally available in India. A history of conventional risk factors such as smoking, lack of exercise, hypertension, diabetes, and chest pain (Rose questionnaire[13]) was sought.

The study was conducted in villages picked at random, away from major towns. A cluster of three villages in Parbatsar tehsil (county) of Nagaur district of central Rajasthan were identified and all residents aged 20 and over scheduled to be examined. Of the 2188 men and 1968 women aged over 20 whose names appeared on the voters' lists, 1982 (90·6%) men and

1166 (59·2%) women attended for examination. Other details were as reported.[15]

Physical examination included measurements of height, weight, and blood pressure. Supine blood pressure was measured with a standard mercury manometer. Two readings five minutes apart were taken as per WHO guidelines.[13] When a high blood pressure (≥140/90 mm Hg) was noted a third reading was taken after 30 minutes. The lowest of the three readings was recorded. A 12 lead electrocardiogram was recorded on all subjects. A fasting blood sample was obtained from 10% of the subjects selected at random. Total cholesterol and triglyceride concentrations were estimated by an enzymatic method. The concentration of high density lipoprotein cholesterol was measured after precipitation of non-high density lipoprotein cholesterol with manganese-heparin substrate. Normal serum samples and laboratory standards served as control. The value of low density lipoprotein cholesterol was derived by using Freidewald's formula: low density lipoprotein = total cholesterol − high density lipoprotein − (triglyceride/5).

DIAGNOSTIC CRITERIA

Hypertension was diagnosed when systolic blood pressure was 140 mm Hg or more and diastolic blood pressure was 90 mm Hg or more, as per guidelines of the United States national health and nutrition assessment survey.[16] Figures for the older WHO criteria[13] for the diagnosis of hypertension (≥160/95 mm Hg) were also recorded. Body mass index (weight (kg)/(height (m))^2) was calculated and obesity defined as a body mass index of 27 or more. Hypercholesterolaemia was diagnosed when the total cholesterol concentration was 5·18 mmol/l or higher. In India tobacco is consumed in various forms—as rolled tobacco leaves (bidi), in Indian pipes (hookahs), in cigarettes, as chewing tobacco, etc—and people may use more than one form. Hence it is difficult to measure accurately the amount of tobacco consumed. We therefore categorised users of any form of tobacco—together with former smokers —as "smokers."[17] Physical activity was assessed by asking about both work related and leisure activities, as suggested by Paffenberger *et al.*[18] Their criteria classify a person as leading a sedentary lifestyle who walks less than 14·5 km a week, climbs fewer than 20 flights of stairs a week, or performs no moderately vigorous physical activity on five days a week. In the study area farming activity occurs only during the two to three months of the rainy season, so that most of the time the population is sedentary.

The presence of one or more of the following criteria was taken as diagnostic of coronary heart disease[13]: (*a*) a documented history of angina or infarction and previously diagnosed coronary heart disease; (*b*) affirmative responses to the Rose questionnaire; (*c*) electrocardiographic changes—namely, Minnesota codes 1-1, 1-2, 4-1, 5-1, 5-2, or 9-2. Isolated T wave inversion in lead III or V1 was ignored. Because of the risk of overdiagnosis or underdiagnosis as a result of poor interpretation of symptoms in uneducated rural people, however, we also regarded the diagnosis as confirmed when there were ST-T and Q wave changes or Q wave changes only in the electrocardiogram.

STATISTICAL ANALYSIS

Data were pooled and computerised and mean values expressed with 1 SD. Prevalence rates are given as percentages. To determine the significance of trends in the prevalence of coronary heart disease and risk factors in various educational groups the χ^2 test was used. The Mantel-Haenzel statistic which tests for linear association was determined with the SPSS statistical package (SPSS Inc, Chicago). In addition, Spearman's coefficient of rank correlation (*r*) was calculated for level of education (nil (0), 1-5 years (1), 5-10 years (2), and 11 or more years (3)) with various physical characteristics (age, height, weight, body mass index, and systolic and diastolic blood pressure) and lipoprotein lipid concentrations (total cholesterol, low density and high density lipoprotein cholesterol, and triglycerides). Systolic and diastolic blood pressure and lipoprotein lipid concentrations were determined at various educational levels and the significance of trends checked with Kendall's τ.

Multivariate analysis to determine the overall relation of level of education with coronary heart disease and risk factors was performed by logistic regression. The dependent variables were presence or absence of coronary heart disease (diagnosed by electrocardiography), hypertension, smoking, physical activity, obesity, and hypercholesterolaemia. Independent variables were level of education, age, and physical measurements. A relation was initially determined between the risk factor and the level of education. Age, which is the major confounding factor, was then added to the equation and odds ratios determined and tabulated. Finally, odds ratios were calculated for coronary heart disease after adding physical measurements (body mass index and blood pressure), smoking, and physical activity to the equation. All P values are two tailed, and significance was taken as $P<0.05$.

Results

The level of education among the different age groups in the total study population of 3148 (1982 men, 1166 women) is shown in table I. Educational status was higher at younger ages in both men and women. There was an inverse correlation of age with educational status (Spearman's *r*: men −0·45, women −0·49; $P<0.0001$). Level of education also varied with socioeconomic status as measured by occupation and type of housing (table II). Educated people had more prestigious occupations such as business and government jobs and lived in durable houses. Significantly more uneducated and less educated people worked as farm labourers and lived in huts and mud houses.

The total prevalence of coronary heart disease was 3·5% (111 cases), with a prevalence of 3·4% (68 cases) in men and 3·7% (43) in women. The prevalence in relation to educational level is shown in table III. An overall decrease in the prevalence of coronary heart disease with increasing educational status was apparent in both sexes, but the trend was significant only in women ($\chi^2=7.25$; $P=0.007$). With respect to changes in the electrocardiogram, both Q waves and ST-T changes and Q waves only were significantly more

TABLE I—*Distribution of educational levels among different age groups. Figures are numbers (percentages) of men and women*

Age (years)	No of subjects	Educational status			
		Group 1 (nil)	Group 2 (1-5 years)	Group 3 (6-10 years)*	Group 4 (>10 years)
Men (n=1982):					
20-29	571	106 (19)	75 (13)	238 (42)	152 (27)
30-39	495	126 (25)	118 (24)	181 (37)	70 (14)
40-49	366	131 (36)	106 (29)	101 (28)	28 (8)
50-59	268	170 (63)	35 (13)	45 (17)	18 (7)
≥60	282	232 (82)	16 (6)	26 (9)	8 (3)
Women (n=1166):					
20-29	382	103 (27)	105 (27)	174 (46)	
30-39	342	158 (46)	126 (37)	58 (17)	—
40-49	212	142 (67)	55 (26)	15 (7)	—
50-59	127	107 (84)	15 (12)	5 (4)	—
≥60	103	98 (95)	3 (3)	2 (2)	—

Negative correlation of level of education with age was significant (Spearman's *r*: men −0·45, women −0·49; P<0·0001).
*Some women in group 3 had education of more than 10 years.

common among uneducated people than among groups with higher educational status (P for trend <0·03).

The prevalence of standard risk factors in the whole population is shown in table IV. Smoking among men was very common. A high prevalence of hypertension and hypercholesterolaemia was seen in both men and women. Regular moderate physical activity was uncommon. Obesity and diabetes mellitus were present in only a small proportion of subjects. The prevalence of risk factors among people of various educational levels is shown in table V. An increasing level of education was associated with a significant falling trend in the prevalence of hypertension (men: $\chi^2=6\cdot41$, P=0·011; women: $\chi^2=27\cdot70$, P<0·001) and smoking (men: $\chi^2=56\cdot61$, P<0·001; women: $\chi^2=4\cdot76$, P=0·029). There was no significant relation with hypercholesterolaemia and obesity, but physical activity was greater with less education.

There was a significant positive rank correlation of the level of education with weight and body mass index in men and with height in women and an inverse correlation with systolic and diastolic blood pressure in both sexes (table VI). Results of lipoprotein lipid measurements were available in 202 men and 98 women. There was no significant correlation of total cholesterol and other lipoprotein lipid concentrations with the level of education.

TABLE II—*Occupations and types of housing among people of different educational levels. Figures are numbers (percentages) of men and women*

Occupation and housing	Educational status: Group 1 (nil)	Group 2 (1-5 years)	Group 3 (6-10 years)*	Group 4 (>10 years)
		Men		
Occupation:				
Agriculture	638 (84)	229 (65)	295 (50)	149 (53)
Business	98 (13)	76 (22)	156 (26)	47 (16)
Government job	28 (4)	44 (13)	139 (24)	87 (30)
Professional	0	0	0	4 (1)
Total	764 (100)	349 (100)	590 (100)	287 (100)
Housing:				
Huts and mud houses	136 (18)	59 (17)	67 (11)	7 (3)
Cement-concrete houses	629 (82)	291 (83)	524 (89)	269 (97)
Total	765 (100)	350 (100)	591 (100)	276 (100)
		Women		
Occupation:				
Agriculture	113 (19)	48 (16)	19 (7)	—
Business	7 (1)	5 (2)	7 (3)	—
Government job	7 (1)	9 (3)	15 (6)	—
Household	480 (79)	241 (79)	212 (83)	—
Professionals	0	0	3 (1)	—
Total	607 (100)	303 (100)	256 (100)	—
Housing:				
Huts and mud houses	102 (17)	36 (12)	18 (7)	—
Cement-concrete houses	506 (83)	268 (88)	236 (93)	—
Total	608 (100)	304 (100)	254 (100)	—

*Some women in group 3 had education of more than 10 years.

Systolic and diastolic blood pressure and lipoprotein lipid concentrations at various levels of education are shown in table VII. There was a declining trend in both systolic and diastolic blood pressures with increasing level of education in both men and women (Kendall's $\tau=-0\cdot06$ to $-0\cdot12$; P<0·001). Mean concentrations of lipoproteins showed a falling trend in total cholesterol and low density lipoprotein cholesterol with increasing educational level. No such trend was seen with high density lipoprotein cholesterol. There was a falling trend in triglyceride concentrations with increasing education in women. None of these trends was significant.

Multivariate logistic regression analysis was performed to determine the relation of level of education with electrocardiographically diagnosed coronary heart disease and the prevalence of coronary risk factors. The results showed a significant inverse association of level of education with the age adjusted prevalence of coronary heart disease, hypertension, smoking, and physical activity in both men and women. No association was seen with hypercholesterolaemia or obesity (table VIII). Adding smoking, physical activity, body mass index, and systolic and diastolic blood pressure to the equation negated the association of level of education with the prevalence of coronary heart disease in both men (odds ratio 0·98, 95% confidence interval 0·83 to 1·16) and women (odds ratio 0·78, 95% confidence interval 0·57 to 1·07).

Discussion

This study shows that coronary heart disease and coronary risk factors were significantly associated with the level of education in a cohort of a rural population in India. Illiteracy and a low level of education were associated with a higher prevalence of electrocardiographically diagnosed coronary heart disease. This relation persisted on age adjusted analysis but decreased after the addition of other lifestyle variables in a multivariate analysis. Smoking and hypertension were also more prevalent among illiterate people and those with low educational status. On the other hand physical activity was greater among uneducated people, and men with more education were taller, heavier, and had a higher body mass index.

Studies from Europe and the United States have shown that during the past 30 years coronary heart disease and coronary risk factors have become more prevalent among uneducated people and people of low social class. A recent American Heart Association scientific statement on socioeconomic factors and cardiovascular disease reiterated this.[19] Level of education is the most widely used measure of socioeconomic status. Other indicators are income, occupation, employment status, indices of social class, measures of living conditions, area based measures, life span measures, and measures of income inequality. Marmot *et al* suggested that other than income or

TABLE III—*Educational level and prevalence of coronary heart disease. Results expressed as numbers (percentages) of men and women*

Educational status	Men: Clinical and electrocardiographic findings	Men: ST-T and Q wave changes	Men: Q Waves only	Women: Clinical and electrocardiographic findings	Women: ST-T and Q wave changes	Women: Q Waves only
Group 1 (nil)	36 (4·7)	31 (4·1)	27 (2·0)	32 (5·3)	30 (4·9)	10 (1·6)
Group 2 (1·5 years)	8 (2·3)	8 (2·3)	2 (0·6)	6 (2·0)	4 (1·3)	—
Group 3 (6-10 years)*	14 (2·4)	9 (1·5)	6 (1·0)	5 (2·0)	4 (1·6)	1 (0·4)
Group 4 (> 10 years)	10 (3·6)	7 (2·5)	3 (1·1)	—	—	—
Mantel-Haenzel χ^2	2·83	5·30	6·01	7·25	8·79	4·54
P value	0·093	0·021	0·014	0·007	0·003	0·033

Coronary heart disease prevalence.

*Some women in group 3 had education of more than 10 years.

TABLE IV—*Prevalence of coronary risk factors. Figures are numbers (percentages) of men and women*

	Men (n=1982)	Women (n=1166)	Total (n=3148)
Smoking and other tobacco use (current and past)	1006 (51)	54 (5)	1060 (34)
Regular moderate physical activity:			
Leisure time	363 (18)	88 (8)	451 (14)
Work related	333 (17)	79 (7)	412 (13)
Both	386 (19)	91 (8)	477 (15)
Diabetes	4 (0·2)	2 (0·2)	6 (0·2)
Hypertension:			
Blood pressure ≥140/90 mm Hg	470 (24)	197 (17)	667 (21)
Blood pressure ≥160/95 mm Hg	150 (8)	72 (6)	222 (7)
Body mass index ≥27	104 (5)	74 (6)	178 (6)
Abnormal lipoprotein lipid values*:			
Cholesterol ≥5·18 mmol/l	45/202 (22)	22/98 (22)	67/300 (22)
Low density lipoprotein cholesterol >3·21 mmol/l	37/202 (18)	28/98 (29)	65/300 (22)
High density lipoprotein cholesterol <0·9 mmol/l	49/202 (24)	40/98 (41)	89/300 (30)

*Lipoprotein lipid concentrations were available in 202 men and 98 women.

educational status, prestige of a particular job may be important.[1] Our study shows that illiteracy and low level of education are associated with inferior housing, which is an important indicator of economic status. The jobs being performed by most of the illiterate and less educated subjects (agricultural and farm labouring) were also less prestigious than business and government jobs, which go to better educated people. Greater height and weight and a higher body mass index among educated men indicate better nutritional status. Education was therefore an important measure of social as well as economic class in our study.

Only a few Indian studies of coronary heart disease prevalence have analysed data according to socioeconomic status. Sarvotham and Berry classified a sample of the urban population in northern India according to income.[7] They showed that coronary heart disease was more prevalent among high income groups but did not explain the reason. Dewan *et al* and Jajoo *et al* studied rural populations in northern and central India respectively but did not examine the relation of socioeconomic status or education with coronary heart disease.[20 10] Both studies, however, showed that people engaged in heavy work such as farm labouring had a lower prevalence of coronary heart disease than people with sedentary habits.

Though in our study illiterate and less educated people were more physically active, they had a higher coronary heart disease prevalence. This suggests that level of education is a more important risk factor. Gupta *et al* and Chadha *et al* studied urban populations of northern India but did not analyse the influence of any indicator of socioeconomic status.[8 9] A recent study from central India showed that hypertension is more prevalent among people of higher socioeconomic class.[21] None of these studies included education as a variable, so it is difficult to compare results with ours. Studies from other developing countries such as the International Clinical Epidemiology Network have not analysed data according to eductional status.[11]

A higher prevalence of coronary heart disease in women in our study may have been due to the bias of self selection, as the response rate among women was lower than among men. However, all other studies of coronary heart disease prevalence from India have shown a higher prevalence in women.[7-10]

Studies from Europe and the United States show that low educational status, low social class, and poverty are major coronary risk factors.[1-6] However, the mechanism by which a higher socioeconomic status protects against disease is not clear. People in higher socioeconomic and educational strata are more likely to care about health and might be following a healthier lifestyle. Among people in lower social classes there is a higher prevalence of smoking, alcohol consumption, poor diet, stress, and exposure to toxins. However, apart from smoking, none of these has directly been determined to be of aetiological importance.[2] Multivariate analysis of our data after inclusion of physical characteristics and smoking nullified the association of educational status with the prevalence of coronary heart disease. This shows that education may be

TABLE V—*Prevalence of major coronary risk factors and level of education. Results expressed as numbers (percentages) of men and women*

Educational status	No of subjects	Major coronary risk factors: Blood pressure ≥140/90 mm Hg	Cholesterol ≥5·18 mmol/l*	Body mass index ≥27	Smoking	Sedentary lifestyle
Men						
Group 1 (nil)	765	207 (27)	23/87 (26)	38 (5)	458 (60)	534 (70)
Group 2 (1-5 years)	350	78 (22)	2/22 (9)	29 (8)	180 (51)	281 (80)
Group 3 (6-10 years)	591	126 (21)	12/52 (23)	26 (4)	270 (46)	519 (88)
Group (<10 years)	276	59 (21)	7/41 (17)	10 (4)	98 (36)	262 (95)
Mantel-Haenzel χ^2		6·41	3·63	0·43	56·61	111·75
P value		0·011	0·060	0·51	<0·001	<0·001
Women						
Group 1 (nil)	608	141 (23)	14/62 (22)	44 (7)	35 (6)	528 (87)
Group 2 (1-5 years)	304	29 (10)	7/29 (24)	21 (7)	13 (4)	294 (97)
Group 3 (>5 years)†	254	27 (11)	1/7 (14)	9 (4)	6 (2)	253 (100)
Mantel-Haenzel χ^2		27·70	0·31	3·50	4·76	48·57
P value		<0·001	0·58	0·061	0·029	<0·001

*Cholesterol concentrations were available in 202 men and 98 women. †Some women in group 3 had education of more than 10 years.

TABLE VI—*Mean values of physical and biochemical characteristics and their correlation with years of education (Spearman's rank correlation). (Figures in parentheses are 1 SD)*

Characteristic	Men: Mean	Men: *r*	Men: P value	Women: Mean	Women: *r*	Women: P value
Age (years)	39·9 (15)	−0·42	<0·001	36·8 (13)	−0·49	<0·001
Height (cm)	165·2 (16)	−0·02	0·353	158·9 (16)	−0·14	<0·001
Weight (kg)	58·3 (10)	0·09	<0·001	53·5 (15)	−0·05	0·083
Body mass index	21·3 (3)	0·08	<0·001	21·2 (6)	−0·01	0·452
Systolic blood pressure (mm Hg)	125·4 (19)	−0·08	<0·001	122·3 (19)	−0·12	<0·001
Diastolic blood pressure (mm Hg)	81·3 (20)	−0·08	<0·001	78·2 (12)	−0·14	<0·001
Total cholesterol (mmol/l)	4·39 (1)	−0·13	0·069	4·37 (1)	−0·01	0·917
Low density lipoprotein cholesterol (mmol/l)	2·51 (1)	−0·12	0·100	2·62 (0·9)	−0·04	0·683
High density lipoprotein cholesterol (mmol/l)	1·15 (0·4)	−0·05	0·484	1·15 (0·4)	0·10	0·314
Triglyceride (mmol/l)	1·63 (0·6)	−0·02	0·772	1·48 (0·7)	−0·18	0·071

Cholesterol and lipoprotein lipid concentrations were available in 202 men and 98 women.

TABLE VII—*Systolic and diastolic blood pressures and lipoprotein lipid concentrations at various levels of education. Values are means (1 SD)*

Educational status	Blood pressure (mm Hg) Systolic	Diastolic	Total cholesterol (mmol/l)	Low density lipoprotein cholesterol (mmol/l)	High density lipoprotein cholesterol (mmol/l)	Triglyceride (mmol/l)
			Men			
Group 1 (nil)	126·4 (22)	82·4 (27)	4·51 (1·1)	2·57 (0·9)	1·12 (0·4)	1·64 (0·6)
Group 2 (1-5 years)	125·6 (16)	81·4 (9)	4·17 (0·6)	2·49 (0·7)	1·07 (0·3)	1·33 (0·5)
Group 3 (6-10 years)	124·9 (16)	80·4 (17)	4·23 (1·1)	2·35 (1·1)	1·14 (0·3)	1·61 (0·6)
Group 4 (>10 years)	123·3 (19)	78·9 (14)	4·18 (0·9)	2·32 (0·8)	1·16 (0·4)	1·57 (0·6)
Kendall's τ	−0·059	−0·062	−0·097	−0·087	−0·035	−0·015
t Value	−3·37***	−3·54***	−1·87	−1·65	−0·63	−0·29
			Women			
Group 1 (nil)	123·9 (22)	79·1 (14)	4·56 (1·4)	2·76 (1·2)	1·11 (0·4)	1·51 (0·5)
Group (1-5 years)	120·5 (17)	77·7 (11)	4·41 (1·0)	2·57 (1·0)	1·21 (0·5)	1·38 (0·7)
Group 3 (>5 years)†	120·5 (14)	76·7 (11)	4·40 (1·2)	2·57 (0·7)	1·29 (0·4)	1·16 (0·4)
Kendall's τ	−0·101	−0·121	−0·009	−0·036	0·080	−0·144
t Value	−4·27***	−5·14***	−0·12	−0·46	0·98	−1·81

†Some women in group 3 had education of more than 10 years.
Cholesterol and lipoprotein lipid concentrations were available in 202 men and 98 women.
***$P<0·001$.

TABLE VIII—*Age adjusted odds ratios for coronary heart disease and risk factor prevalence explained by education (logistic regression analysis)*

	Men: Odds ratio	(95% confidence interval)	P*	Women: Odds ratio	(95% confidence interval	P*
Coronary heart disease	0·82	(0·66 to 1·00)	0·05	0·53	(0·36 to 0·85)	<0·01
Hypertension	0·88	(0·80 to 0·97)	<0·01	0·56	(0·45 to 0·70)	<0·01
Hypercholesterolaemia	0·88	(0·66 to 1·16)	0·38	0·90	(0·43 to 1·88)	0·77
Obesity	0·94	(0·78 to 1·14)	0·51	0·74	(0·54 to 1·02)	0·06
Smoking	0·73	(0·67 to 0·79)	<0·01	0·65	(0·44 to 0·96)	0·03
Physical activity	0·54	(0·48 to 0·61)	<0·01	0·20	(0·11 to 0·34)	<0·01

*$P<0·05$ taken as significant.

acting conjointly with other variables in increasing the coronary risk.

Our data show that among uneducated and less educated people in rural India major coronary risk factors such as smoking and hypertension are more prevalent. This may make these people prone to coronary heart disease. Our data also show that physical activity is greater among uneducated and less educated groups by virtue of their occupations. Lower weight and lower body mass index among these groups may be due to excess physical activity or to poverty and undernutrition. Though increased physical activity protects against coronary heart disease, malnutrition (poor diet lacking fruit and vegetables containing antioxidants and flavonoids) may be detrimental. We did not ask about dietary items and therefore cannot comment on these aspects. We also did not ask about other measures of social class, such as exact employment status, income inequality, deprivation, and psychosocial factors (social isolation, coping styles, behaviour, job strain, and anger), which are also possible mechanisms by which social class and education may influence coronary heart disease incidence.

Epidemiological implications

- Studies from developing countries are not clear regarding the association between educational status and prevalence of coronary heart disease and coronary risk factors
- In rural Rajasthan, India, the illiteracy rate is high
- The prevalence of coronary heart disease as well as of the coronary risk factors smoking and hypertension are higher among the uneducated and less educated population of Rajasthan

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Correction

Wartime evacuation and mortality from childhood leukaemia in England and Wales in 1945-9

Two printer's errors occurred in this paper by L J Kinlen and S M John (5 November, pp 1197-202). The values for P for trend were omitted from table IV. The values are 0·113 for age 0-4 years, 0·024 for age 5-14, and 0·008 for age 0-14. Also, the P value in the penultimate sentence of the first paragraph on p 1199 should be 0·008 and not 0·08.