patients without diabetes within two years of the procedure. Angina does, however, recur more commonly after percutaneous coronary angioplasty and stenting than it does after bypass surgery.[3 4] Despite this, percutaneous coronary angioplasty remains the more popular choice, and the number of procedures that are performed each year is increasing. Percutaneous coronary angioplasty usually requires just one or two days in hospital, and patients can expect to be back at work within a week. Surgery is much more invasive and requires lengthy rehabilitation.

No trials have looked specifically at people with diabetes, but subgroup analyses of existing trials indicate that angioplasty is not as successful as surgery for these patients.[3 5] This reflects the higher acute risk of percutaneous coronary angioplasty in a diabetic patient and the higher restenosis rate. However, with the advent of the glycoprotein Iib-IIIa receptor blockers (given intravenously at the start of the procedure), new data indicate that the risks may match that of people with no diabetes.[6 7] These agents reduce platelet aggregation, which in turn reduces the risk of clot formation. A multicentre trial presently under way in the United Kingdom compares percutaneous coronary angioplasty and stenting and the concomitant use of glycoprotein IIb-IIIa blockers with modern coronary artery bypass grafting. Preliminary results are expected within two years.

Stent development has enabled percutaneous coronary angioplasty to catch up with bypass graft surgery. Stent insertion using intravascular ultrasound guidance is the key to longer term success. In addition, localised radiotherapy at the time of stent implantation helps to reduce proliferation of smooth muscle. The newest stents (which are expensive and not yet in general use) are made of metal coated with a cytostatic agent such as sirolimus or paclitaxel.[8 9] These agents are released slowly and locally to reduce proliferation of smooth muscle. Early trials with these newer stents suggest that less than 5% of people will have arterial restenosis.

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Socioeconomic and ethnic group differences in self reported health status and use of health services by children and young people in England: cross sectional study

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BMJ 2002;325:520–3

Abstract

Objectives To examine whether self reported health status and use of health services varies in children of different social class and ethnic group.
Design Cross sectional study from the 1999 health survey for England.
Subjects 6648 children and young adults aged 2-20 years.
Setting Private households in England.
Main outcome measures Proportion of children (or their parents) reporting episodes of acute illness in the preceding fortnight and prevalence of self reported longstanding illness. Proportion reporting specific illnesses. Proportion reporting that they had consulted a general practitioner in the preceding fortnight, attended hospital outpatient departments in the three preceding months, or been admitted to hospital in the preceding year.
Results Large socioeconomic differences were observed between ethnic subgroups; a higher proportion of Afro-Caribbean, Indian, Pakistani, and Bangladeshi children belonged to lower social classes than the general population. The proportion of children and young adults reporting acute illnesses in the preceding two weeks was lower in Bangladeshi and Chinese subgroups (odds ratio 0.41, 95% confidence interval 0.27 to 0.61 and 0.46, 0.28 to 0.77, respectively) than in the general population. Longstanding illnesses was less common in Bangladeshi and Pakistani children (0.52, 0.40 to 0.67 and 0.57, 0.46 to 0.70) than in the general population. Irish and Afro-Caribbean children reported the highest prevalence of asthma (19.5% and 17.7%) and Bangladeshi children the lowest (8.2%). A higher proportion of Afro-Caribbean children reported major injuries than the general population (11.0% *v* 10.0%), and children from all Asian subgroups reported fewer major and minor injuries than the general population. Indian and Pakistani children were more likely to have consulted their general

Table 1 Socioeconomic factors in children and teenagers by ethnic group. Data are numbers (percentages) unless otherwise indicated

	General population (n=2061)	Afro-Caribbean (n=807)	Indian (n=668)	Pakistani (n=1060)	Bangladeshi (n=974)	Chinese (n=342)	Irish (n=736)	P value (χ^2 test for significance testing of differences across groups)
Social class								
I	148 (7.4)	21 (2.7)	64 (8.0)	47 (4.8)	11 (2.1)	29 (9.0)	36 (6.8)	<0.001
II	558 (26.3)	156 (18.9)	159 (20.0)	134 (13.0)	57 (7.1)	99 (27.5)	243 (31.7)	
III non-manual	264 (12.9)	183 (21.9)	62 (10.2)	72 (6.4)	59 (6.5)	49 (15.6)	94 (14.6)	
III manual	626 (30.5)	176 (22.4)	184 (30.1)	405 (40.0)	305 (35.2)	102 (30.9)	210 (29.1)	
IV	316 (15.6)	182 (23.6)	157 (25.8)	237 (20.8)	339 (30.4)	26 (7.2)	116 (13.8)	
V	79 (4.0)	30 (4.1)	14 (2.3)	24 (2.3)	38 (3.2)	10 (2.9)	19 (1.7)	
All other*	70 (3.4)	60 (7.4)	28 (4.2)	141 (13.3)	165 (16.9)	27 (7.9)	18 (2.4)	
Living in lowest third of equivalised income	658 (32.9)	428 (52.0)	244 (42.0)	646 (60.0)	678 (68.8)	130 (34.8)	213 (26.6)	<0.001
No (%) of sample receiving income support	271 (13.6)	267 (31.7)	86 (14.2)	249 (24.0)	368 (36.7)	22 (4.5)	117 (14.8)	<0.001

*Includes children of parents in armed forces, full time students, and other.

practitioner in the preceding fortnight than the general population (1.86, 1.35 to 2.57 and 1.51, 1.13 to 2.01, respectively). Indian, Pakistani, Bangladeshi, and Chinese children were less likely to have attended outpatient departments in the preceding three months. No significant differences were found between ethnic groups in the admission of inpatients to hospitals. Acute and chronic illness were the best predictors of children's use of health services. Social classes did not differ in self reported prevalence of treated infections, major injuries, or minor injuries, and no socioeconomic differences were seen in the use of primary and secondary healthcare services.

Conclusions Children's use of health services reflected health status rather than ethnic group or socioeconomic status, implying that equity of access has been partly achieved, although reasons why children from ethnic minority groups are able to access primary care but receive less secondary care need to be investigated.

Introduction

In the 1970s and 1980s, differentials in childhood mortality widened, such that death rates in children from social classes IV and V were up to five times higher than in children from social classes I and II.[1 2] Morbidity is far harder to assess, mainly because most sources of data lack information on denominators.[3]

We examined in a national study whether inequalities in health status and use of services exist in children and young adults, using information on socioeconomic status, health status, and use of health services collected at an individual level.

Methods

The health survey for England is an annual survey of households in England. The 1999 survey focused on the health of ethnic minority groups.[4]

Sampling and data collection

We used three separate samples (see also bmj.com). Firstly, a general population sample of 6552 households was obtained. All participating households were interviewed in full. Secondly, an "ethnic boost" sample of 26 528 addresses was obtained. Each household in the ethnic boost sample was screened initially and included only if respondents identified themselves as belonging to a self reported ethnic minority group ("white," "black Caribbean," "black African," "black other," "Indian," "Pakistani," "Bangladeshi," "Chinese," and "other"). Interviewers who could speak and read the informants' language obtained household, socioeconomic, and personal information and information on health and use of health services. Parents or guardians responded for children aged less than 13. Children aged 13-15 were interviewed directly, with a parent present in the household. Thirdly, a sample for Chinese informants was obtained by following up 569 households that had participated in an earlier survey conducted by the health education authority.

Data analysis

We merged individual data from the ethnic boost and Chinese samples with data from the general population sample. We recategorised ethnic groups as "Afro-Caribbean," "Asian" (Indian, Pakistani, Bangladeshi, and Chinese groups), and "Irish," and grouped all other ethnic groups together in a baseline group called "general population."[5]

We examined the prevalence of acute illnesses in the preceding fortnight, limiting longstanding illnesses, and specific illnesses in children and young adults of different ethnic groups and social class. Major incidents were defined as any kind of injury in the preceding six months that resulted in seeing a doctor or going to hospital for treatment. Minor incidents included any injuries in the preceding four weeks that resulted in pain or discomfort lasting 24 hours or more but did not require seeing a doctor or going to hospital.

Results

Household response rates were 76% in the general population and 71% in the ethnic boost sample. We obtained interviews with 97% of children from the general population and 92-96% of children from ethnic minority groups. In all, 6648 people aged 2-20 years participated in the survey. Age and sex distributions of the different ethnic and social class groups were similar, but socioeconomic differences between the different ethnic groups were large (table 1).

Table 2 Illness status in children and teenagers by ethnic group and social class

Characteristic	Acute illness		Chronic illness	
	No (%)	Crude odds ratio* (95% CI)	No (%)	Crude odds ratio* (95% CI)
Ethnic group:				
General population	209 (10.0)	1.00	483 (23.3)	1.00
Afro-Caribbean	89 (11.5)	1.17 (0.89 to 1.54)	204 (25.9)	1.15 (0.94 to 1.40)
Indian	50 (7.9)	0.78 (0.55 to 1.09)	109 (16.4)	0.64 (0.50 to 8.30)
Pakistani	83 (8.0)	0.79 (0.60 to 1.04)	161 (14.8)	0.57 (0.46 to 0.70)
Bangladeshi	45 (4.3)	0.41 (0.27 to 0.61)	127 (13.6)	0.52 (0.40 to 0.67)
Chinese	19 (4.9)	0.46 (0.28 to 0.77)	65 (17.6)	0.70 (0.52 to 0.95)
Irish	182 (27.3)	1.45 (1.10 to 1.98)	182 (27.3)	1.24 (0.98 to 1.56)
Social class of head of household:				
I	24 (7.8)	1.00	67 (21.9)	1.00
II	145 (10.9)	1.44 (0.79 to 2.63)	312 (23.5)	1.09 (0.73 to 1.64)
III non-manual	78 (10.3)	1.36 (0.70 to 2.62)	151 (20.5)	0.92 (0.58 to 1.45)
III manual	180 (10.2)	1.35 (0.74 to 2.46)	397 (24.0)	1.12 (0.75 to 1.68)
IV	110 (9.2)	1.19 (0.63 to 2.26)	261 (24.3)	1.15 (0.75 to 1.76)
V	20 (12.8)	1.73 (0.75 to 4.02)	43 (20.9)	0.94 (0.50 to 1.79)

*Adjusting for independent variables including age, sex, ethnic group, or social class did not alter odds ratios, so only unadjusted values are shown.

Health status

Acute illness in children and young adults in the preceding two weeks was more common in Irish children than in the general population (table 2). Bangladeshi and Chinese subgroups had the lowest prevalence. Chronic or limiting longstanding illnesses were less common in Bangladeshi and Pakistani children than in the general population. The prevalence of acute or longstanding illness in children from different social classes did not differ. The prevalence of asthma treated in the preceding 12 months was highest in social class groups II and III non-manual (17.7% and 18.9%). Social class did not differ for prevalence of treated infections or injuries. Irish and Afro-Caribbean children had the highest prevalence of asthma (19.5% and 17.7%) and Bangladeshi children the lowest (8.2%). Bangladeshi children had fewer major incidents than the general population (3.1% *v* 10.0%) and fewer minor incidents (0.6% *v* 7.3%) (see also bmj.com).

Use of health services

The proportion of all children and young adults aged up to 20 years consulting their general practitioner in the preceding fortnight was 8.7% (equivalent to 2.3 consultations per person per year) (table 3). Girls were less likely to have attended outpatient clinics at hospital than boys (odds ratio 0.78, 0.66 to 0.93). The associations between socioeconomic status and use of health services were non-significant. After adjusting for age, social class, and chronic health status, Indian and Pakistani children were more likely to have seen their general practitioner in the preceding fortnight than the general population (odds ratio for Indian children 1.86, 1.13 to 2.01). Asian children were, however, less likely to have attended outpatient departments in the preceding three months. The differences between ethnic groups in hospital inpatient admissions were non-significant. Children who had episodes of acute illness in the preceding two weeks were more likely to have seen their general practitioner (7.57, 5.52 to 10.38) and to have attended outpatient departments in the past three months (1.60, 1.23 to 2.08). Children who had chronic or limiting longstanding illnesses were more likely to have seen their general practitioner in the preceding fortnight (1.78, 1.28 to 2.48) and more than twice as likely have attended hospital as an

Table 3 Children and teenagers using general practitioner, outpatient, and inpatient services by social class and ethnic group. Data are numbers (percentages) unless otherwise indicated

	Visits to general practitioner in past 2 weeks	Hospital outpatient in past 3 months	Hospital inpatient or day patient in past year
Social class:			
I	38 (9.6)	76 (21.1)	26 (7.9)
II	127 (6.9)	313 (25.6)	81 (6.3)
III non-manual	60 (6.2)	213 (29.4)	55 (5.7)
III manual	173 (8.3)	419 (25.9)	152 (8.5)
IV	121 (7.4)	281 (29.8)	101 (8.9)
V	20 (10.0)	44 (19.7)	17 (11.3)
P value (χ^2)*	0.59	0.30	0.32
Ethnic group:			
General population	155 (7.5)	548 (26.3)	162 (7.8)
Afro-Caribbean	73 (8.5)	207 (26.8)	70 (9.2)
Indian	80 (12.6)	122 (19.0)	34 (5.4)
Pakistani	118 (11.1)	155 (15.4)	71 (6.8)
Bangladeshi	71 (7.3)	126 (14.5)	53 (5.7)
Chinese	25 (8.0)	49 (14.3)	17 (4.8)
Irish	59 (7.9)	206 (30.0)	68 (9.4)
P value (χ^2)*	0.03	<0.001	0.001

*χ^2 test for significance testing of differences across groups.

outpatient or inpatient in the preceding year, (2.86, 2.34 to 3.50 and 2.49, 1.84 to 3.38, respectively) than children who did not have such illnesses.

Discussion

Use of health services does not accurately reflect health status yet is often used to negotiate service needs on an area basis. Our study reports national data on the prevalence of both acute and chronic illness and on use of services among children and young adults from different ethnic and socioeconomic groups. We found lower overall mean consulting rates than reported in our earlier study (2.3 *v* 3.8 consultations per person per year).[5] The earlier study was, however, limited to children aged under 16, and since use of general practitioners' services is lower among young adults this may account for some of the difference.

Limitations of self reported health

The recording of socioeconomic status and ethnicity even when self completed categories are used is subject to misclassification bias.[6] Our conclusions relate to health status and use of health services reported by parents on behalf of children under 13 years, and for older children and young adults to self rated health and use of services. To date no evidence exists that parents of children from different ethnic minority groups report different levels of subjective health, but this is a potentially important limitation of the study. The reporting of health depends on whether patients choose to consult their general practitioner and is based on their own decisions. Nevertheless, how self rated health status compares with more objective measures needs to be assessed in children from different ethnic groups and of different socioeconomic status.

Socioeconomic and ethnic group differentials in health of children

Interpreting findings relating to health inequalities is beset by confounding because lifestyle factors that predispose to ill health vary between socioeconomic groups.[7 8] The prevalence of certain illnesses varies in different socioeconomic or ethnic groups, and differentials exist in service use and provision.[9] For example, the lower prevalence of asthma in Bangladeshi children may not mean that actual prevalence is lower but that it is underdiagnosed.

Conclusions

Children's health status and use of health services did not vary significantly by social class, which implies that equity in this area has been partially achieved. Children from Asian ethnic groups report better health and Afro-Caribbean children report worse health than the general population. Although these groups were more likely to consult general practitioners, they were less likely to be referred to secondary care.

We thank Rumana Omar and Richard Boreham for their statistical advice on this paper.

Contributors: See bmj.com

Funding: The Health Survey for England was funded by the Department of Health. JE receives some of his funding from the special trustees of University College London Hospitals NHS Trust. AM holds a primary care scientist award and is funded by the NHS Research and Development Directorate.

Competing interests: None declared.

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(Accepted 21 March 2002)

What is already known on this topic

Children from lower socioeconomic classes and from Indian ethnic subgroups may make more use of general practitioners' services than other children

Afro-Caribbean, Indian, Pakistani, and Bangladeshi children are less likely to be referred to outpatient and inpatient services at hospitals than white children

What this study adds

Indian, Pakistani, and Bangladeshi children reported less acute and chronic illness, asthma, and injuries than the general population, whereas Afro-Caribbean children reported more

Children's self reported health status and use of health services did not vary by social class

Indian and Pakistani children make more use of general practitioners' services, but Indian, Pakistani, Bangladeshi, and Chinese children are less likely to be referred to outpatient clinics

Self reported health status rather than socioeconomic status or ethnicity is the best predictor of use of primary and secondary services

Endpiece

Two views on walking

The only exercise I take is walking behind the coffins of friends who took exercise.

Peter O'Toole

If you walk hard enough you probably don't need any other God.

Bruce Chatwin