

Short reports

Social deprivation and patterns of consultation for respiratory symptoms: a population-based cohort study

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The link between social deprivation and asthma is complex. Higher rates of hospital admission for asthma,¹ increased asthma mortality,² and greater severity of asthmatic symptoms³ have been observed in relation to social class and geographical deprivation. By contrast the prevalence of symptoms such as wheeze has not been consistently found to vary with social class.³⁻⁵ One explanation of these conflicting observations is that people from deprived backgrounds with respiratory symptoms may be less prone to seek or comply with health care.

In the United Kingdom, consultations in general practice are one measure of seeking health care. We have carried out a study to determine whether people with respiratory symptoms from deprived areas consult more or less often than those from affluent areas.

Methods

The design was in two phases: (a) a baseline population survey (b) a follow up cohort study. (a) A cross sectional survey was carried out in the registered populations of two general practices in Staffordshire, UK, one urban, one rural, with one repeat mailing to non-responders. A random sample of 5000 patients aged five and over was selected from the total patients (n = 18 298) registered with the two practices. Patient postcodes were linked to 1991 census information to derive a deprivation score for each census enumeration district (size = approximately 150-200 households). This score aggregates employment status, household overcrowding, car ownership, and home ownership (the Townsend score⁶) and is standardised as a comparison with the average

for the whole region. Scores at or below this average were classified as "affluent", above as "deprived". The questionnaire—a short form of the European Community Respiratory Health Survey,⁷ validated in an earlier general practice study⁸—included questions on four respiratory symptoms (Appendix). These were the focus of this analysis. Parents completed forms on behalf of children in the sample.

(b) The two practices routinely used computers to record morbidity data for patients who consulted. Each time a respondent from the two registered populations consulted with cough, wheeze, chest tightness or breathlessness (a "lower respiratory symptom") during the six months after the return of the baseline questionnaire, the participating doctors recorded this on a special computerised form, and so all patients could be identified at the end of this period. The subgroup of all such consulters who had completed and returned the baseline questionnaire formed the cohort for analysis.

Bivariate statistics and *t* tests for proportions were used to compare the prevalence of symptoms between people from deprived and affluent areas. Confounding was explored using unconditional logistic regression models in SPSS (Windows version 8) from which we also estimated odds ratios.

Results

There were 3543 replies to the baseline questionnaire (73% response). There were 1556 people (43.9%) who reported at least one symptom, 174 (4.9%) reported all four symptoms. People from deprived areas were more likely to report all four symptoms compared

Table 1 Six month consultation patterns for lower respiratory tract problems by level of deprivation

	All	Number of symptoms reported at baseline											
		0		1		2		3		4		1-4	
Population*	3380	1901		733		393		191		162		1479	
Number consulting	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	
All	88 2.6	11 0.6	25 3.4	17 4.3	11 5.8	24 14.8	77 5.2						
Consultation by deprivation													
Affluent	62 2.9	6 0.5	18 3.9	14 6.0	7 6.7	17 22.7	56 6.4						
Deprived	26 2.1	5 0.8	7 2.5	3 1.9	4 4.7	7 8.0	21 3.4						

*163 people with missing deprivation scores were excluded.

with people from affluent areas (7.1% v 3.5%, $p < 0.001$); after adjusting for age, smoking status, sex, and general practice, the odds ratio for this association was 1.7, 95% confidence intervals 1.2, 2.4.

In table 1, subsequent consultation patterns for lower respiratory symptoms by level of deprivation are shown. People living in affluent areas were rather more likely to consult their general practitioner with lower respiratory symptoms than those from deprived areas—2.9% compared with 2.1%—though the difference was not statistically significant.

Among people reporting at least one symptom, those living in affluent areas were significantly more likely to consult their general practitioner in the subsequent six months compared with people living in deprived areas—6.4% v 3.4% ($p < 0.02$); adjusted odds ratio of 2.2 (95% CI 1.2, 3.8). Among people reporting all four symptoms in the baseline questionnaire, the association was even stronger, with 22.7% of those in affluent areas consulting in the subsequent six months compared with 8% of those in deprived areas ($p < 0.02$); adjusted odds ratio of 6.2 (95% CI 1.8, 20.9).

Discussion

The results from our study show that people living in deprived areas reported a higher prevalence of respiratory symptoms, yet had lower consultation rates subsequently for such symptoms. There were potential sources of bias. Non-response to the survey may have been differential; however recorded response rates were similar in those living in affluent (76%) and deprived areas (71%). Furthermore response to the baseline survey will not have affected the prospective comparison of consultations between responders from the two types of area. The two practices had different mixtures of “affluent” and “deprived” patients, but this did not explain the difference in consulting rates by deprivation score.

These results relate to an aggregate deprivation score for a small area and studies of a person’s social class might give a different picture. We have specifically focused on symptoms and

not considered how this is related to the clinical diagnosis of asthma. However, our results suggest explanations such as restricted access to health care, differing perceptions of symptom severity or less positive views of health care services may account for some of the differences observed, and indicate that barriers to optimum care should be a special focus of research concerned with the link between respiratory symptoms and social deprivation.

Appendix

The four respiratory symptoms examined in the study were:

- 1 Have you had wheezing or whistling in your chest at any time in the last 6 months?
- 2 Have you woken up with a feeling of tightness in your chest at any time in the last 6 months?
- 3 Have you been woken by an attack of shortness of breath at any time in the last 6 months?
- 4 Have you been woken by an attack of coughing at any time in the last 6 months?

All questions had an option of a yes/no answer.

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