

Symptom prevalence in the community

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SUMMARY. The prevalence of physical symptoms among a sample of patients registered at a health centre is described as recorded from home interviews. The number of physical symptoms per person is then correlated with personal characteristics and environmental factors, using computer programmes.

Introduction

A CONSIDERABLE amount has been written about presenting complaints in general practice (*Journal of the Royal College of General Practitioners*, 1973), but there is less information available about morbidity in the community especially when carefully defined by symptomatology.

Aim

The aim was to determine the prevalence of symptoms among people living in the community.

Method

A random sample was drawn from the practice lists of a health centre in Glasgow and these patients were interviewed in their homes over the course of a year.

There were 44 grouped questions on physical symptoms which were designed to be mutually exclusive and to cover every possibility. The questions were phrased in simple non-technical language and referred to feelings people might have noticed about themselves rather than to diseases. Where medical conditions were defined in terms of symptoms the appropriate methodology was used, for instance for chronic bronchitis (Cochrane and Fletcher, 1968), angina, and intermittent claudication (Rose, 1962). The answers were purely subjective responses and no objective clinical signs or tests were included. The questions were asked of the present, or previous two weeks only, and therefore the results represent a two-week period prevalence.

In addition to symptoms there was information on personal characteristics and environmental factors, such as housing, mobility, and employment. Computer programmes for bivariate and multivariate analysis were used to explore associations between such variables and the prevalence of physical symptoms (Nie *et al.*, 1970). Mental symptoms were asked separately and are not included here.

Random monthly samples without replacement were drawn from the computer file of the health centre over the course of a year. It was found that 46 per cent of the patients drawn were not at the address given for them, (Hannay, 1972; Hannay and Maddox, 1977) partly because of redevelopment in central Glasgow, and partly because there is no routine way of recording changes of address. In view of this a detailed analysis of the age-sex distribution and location of the non-respondents was carried out (Hannay and Maddox, 1977). Those who were not at the address given for them had mainly lived in slum clearance areas, and although the age-sex distribution of those interviewed was broadly comparable to the population in general, those between the ages of 16 and 44 tended to be under represented. One might expect this age group to be the most mobile, and also the least likely perhaps to attend the health centre, which was the only way a change of address within Glasgow could be recorded.

Only three per cent of the sample refused to be interviewed. Most of these were elderly people and the main reason given was ill health. A steady rate of monthly interviews was maintained throughout a calendar year to allow for seasonal variations, and a total of 1,344 interviews was completed, representing 3.1 per cent of the mean list size for the health centre for that year. The total number of patients was therefore just over half the average list size in the UK.

Results

The results for each symptom question are analysed in Table 1 (parts a to k), which shows the two-week period prevalence for each individual symptom, as well as for the 44 symptom groups, expressed as a percentage of the total sample interviewed. Looking first at the groups

Table 1. Part a. Numbers of physical symptoms (percentages out of 1,344 patients shown in brackets).

Feeling more tired than usual or generally run-down	305 (22.7)
a) More tired than usual	216 (16.1)
b) Generally run-down	22 (1.6)
a) and b)	67 (5.0)
A change in weight	117 (8.7)
a) Loss of weight (excluding deliberate dieting)	44 (3.3)
b) Gain in weight (excluding pregnancy)	73 (5.4)
Fever, or unusual sweating or flushing	107 (8.0)
a) Fever	34 (2.5)
b) Unusual sweating	30 (2.2)
c) Unusual flushing	22 (1.6)
a) and b)	9 (0.7)
b) and c)	7 (0.5)
a) and c)	1 (0.1)
a), b) and c)	4 (0.3)
Trouble with skin	204 (15.2)
a) Rash or irritation	167 (12.4)
b) Sores or ulcers	11 (0.8)
c) Boils or other skin trouble	23 (1.7)
a) and b)	1 (0.1)
a) and c)	2 (0.1)

Table 1. Part b.

Trouble with hair	68 (5.1)
a) Loss of hair	14 (1.0)
b) Superfluous hair	0
c) Dandruff	54 (4.0)
Lumps under skin	65 (4.8)
a) Lumps or swollen glands (other than in breast)	57 (4.2)
b) Swellings such as a rupture	6 (0.4)
c) Lumps in breast	2 (0.1)
Change of colour in skin or in whites of eyes	22 (1.6)
a) Paler than usual	12 (0.9)
b) Yellower than usual	3 (0.2)
c) Other discolouration such as bruising	7 (0.5)
Feeling more thirsty than usual or cold apart from the weather	76 (5.7)
a) More thirsty than usual	48 (3.6)
b) More cold apart from the weather	19 (1.4)
a) and b)	9 (0.7)

Table 1. Part c.

Change of appetite	106 (7.9)
a) Loss of appetite	70 (5.2)
b) Gain of appetite or feeling hungry	36 (2.7)
Trouble with teeth, or difficulty in eating or swallowing	148 (11.0)
a) Trouble with teeth	105 (7.8)
b) Difficulty in eating because of mouth or gums	25 (1.9)
c) Difficulty in swallowing because of trouble in throat (or oesophagus)	12 (0.9)
a) and b)	5 (0.4)
b) and c)	1 (0.1)
Nausea or vomiting	120 (8.9)
a) Nausea or feeling like vomiting	45 (3.3)
b) Retching without bringing up food	15 (1.1)
c) Vomiting up food or drink	59 (4.4)
d) Vomiting up blood which had not been swallowed	1 (0.1)
Heartburn or indigestion	197 (14.7)
a) Heartburn	84 (6.3)
b) Indigestion	84 (6.3)
a) and b)	29 (2.2)
Other abdominal or tummy pain, or trouble with bowels	168 (12.5)
a) Pain in abdomen or tummy	69 (5.1)
b) Diarrhoea	23 (1.7)
c) Constipation	56 (4.2)
a) and b)	10 (0.7)
a) and c)	9 (0.7)
a), b) and c)	1 (0.1)
Trouble with opening bowels	31 (2.3)
a) Pain on defaecation	15 (1.1)
b) Red blood on stool or paper	11 (0.8)
a) and b)	5 (0.4)

of symptoms, respiratory symptoms were by far the commonest (Tables 1f and g), followed by headaches (Table j), and feeling tired and generally run down (Table 1a). Trouble with the feet (Table 1i), ears and eyes (Table 1k), skin (Table 1a), varicose veins (Table 1h), and cardiorespiratory symptoms (Table 1g) come next.

These groups were then classified into individual symptoms and those with a prevalence of more than ten per cent are shown in Figure 1. Where an individual symptom occurred in combination, this has been added to the prevalence for the single symptom. Again there was a striking preponderance of respiratory symptoms and those of general malaise such as tiredness and headaches. Apart from these, trouble with the feet,

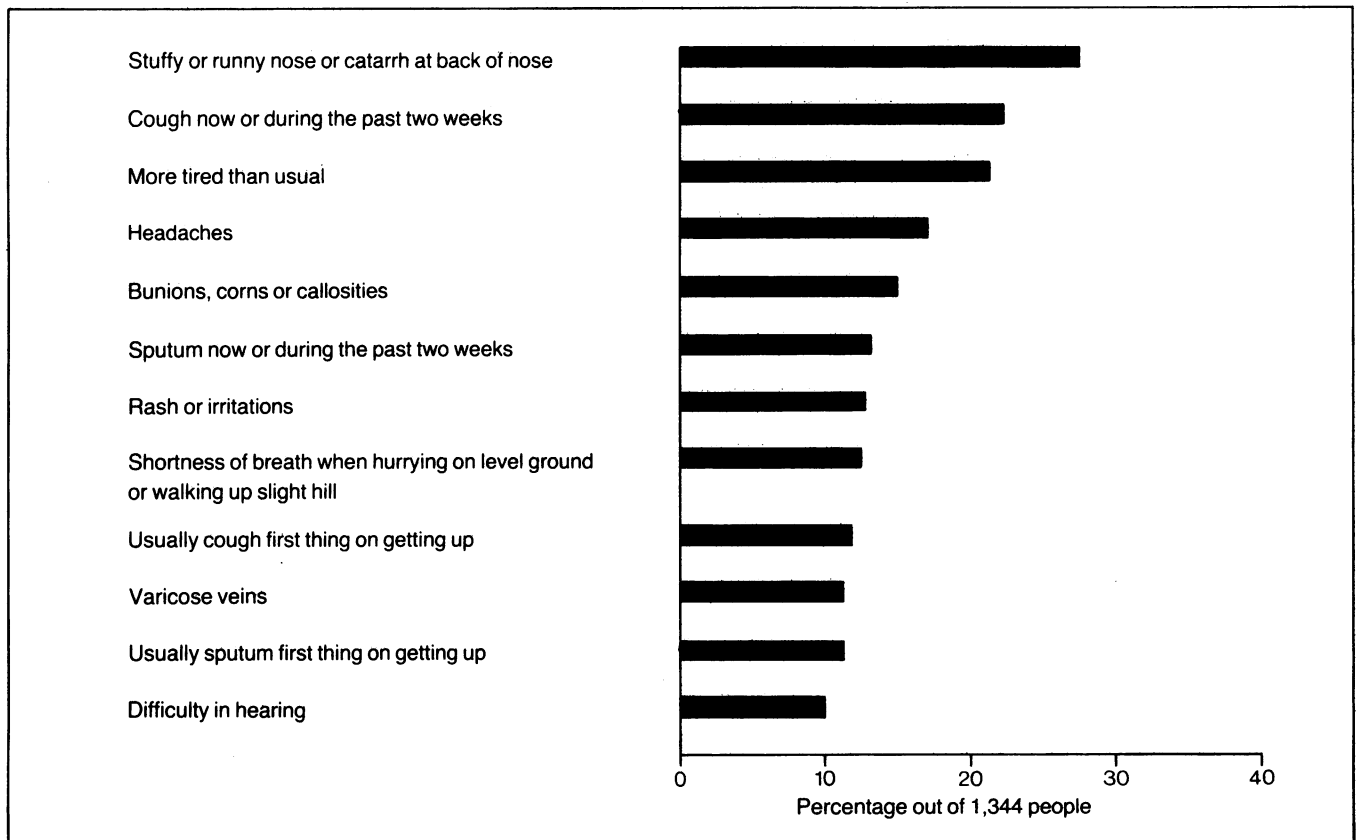


Figure 1. Commonest physical symptoms.

skin, dyspnoea, varicose veins, and hearing were the commonest individual symptoms.

It is possible to gain some idea of the broader medical categories by combining groups of symptoms (Figure 2). This involves assumptions about the cause which may be arbitrary, such as placing shortness of breath with the respiratory rather than the cardiovascular system. Inevitably there is a large miscellaneous category, but again respiratory symptoms predominate. The number of symptoms in each category is expressed as a percentage of the total number of physical symptoms found. The physical symptoms were then combined into a single score for each subject, to obtain the number of physical symptoms per person. The mean number of physical symptoms per person was 4.3, with a range of 0 to 25. Only 14 per cent of those interviewed reported no physical symptoms during the previous two weeks.

Almost two thirds of the independent variables used in the survey gave significant results when correlated with the number of physical symptoms per person. However, many of these associations were due either to variables measuring the same thing, such as self-estimates of present health, or to factors which were likely to be the result rather than the cause of physical symptoms, such as the use of medical services and medicine taking. The frequency of physical symptoms broadly increased with age and was higher for females

than males (Figure 3). There was a significant correlation with age, but not with sex. Other significant sociographic variables on bivariate analysis indicated that people who were separated or divorced, un-

Table 1. Part d.

Difficulty or discomfort in passing water	29 (2.2)
a) More difficult than usual	10 (0.7)
b) Discomfort such as pain or burning	16 (1.2)
a) and b)	3 (0.2)
Passing water more often than usual	75 (5.6)
a) More frequently during the day	22 (1.6)
b) More frequently at night	24 (1.8)
a) and b)	29 (2.2)
Trouble with water coming too quickly	32 (2.4)
a) Having to run to toilet	6 (0.4)
b) Leaks when straining, coughing or laughing	9 (0.7)
a) and c)	17 (1.3)
Unusual colour or smell about water	18 (1.3)
a) Strong smell	9 (0.7)
b) Reddish/brown discolouration	5 (0.4)
a) and b)	4 (0.3)

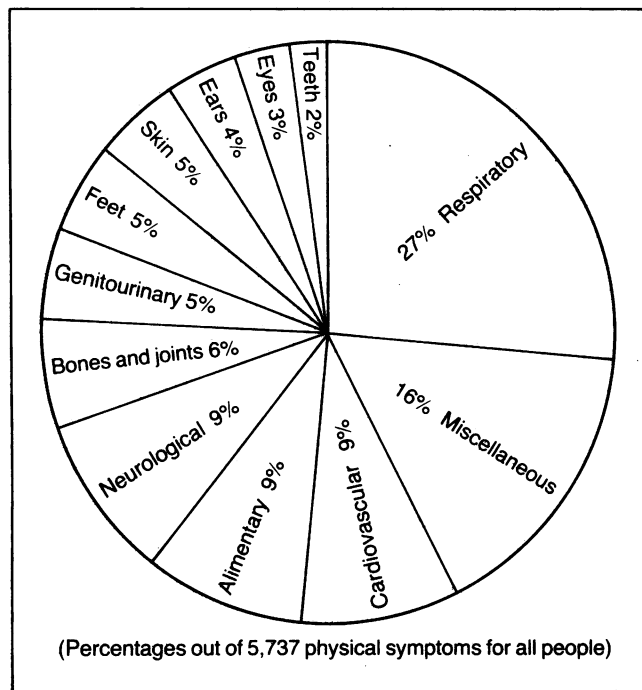


Figure 2. Physical symptom categories.

employed due to illness, living in crowded conditions or alone, were more likely to have an increased number of physical symptoms, whereas owner occupiers and those living in more recent housing had fewer physical symptoms. Cigarette smokers and those with high neuroticism scores had significantly more symptoms. In addition, increased mobility and a lack of active religious allegiance were also associated with higher frequencies of physical symptoms.

Some of these significant correlations may have been due to interaction effects. For instance, the association between physical symptoms and being separated or divorced may have been a reflection of the age-sex group of those involved, rather than their marital status. In order to allow for this, those variables which might be causal for the frequency of physical symptoms were used in multivariate analysis. Twenty-two such variables were entered into a regression equation as possible predictors of frequency of physical symptoms, and of these the following ten had significant regression coefficients in order of importance:

1. Neuroticism score.
2. Number of short hospital stays.
3. Age.
4. Number of moves.
5. Number of cigarettes smoked.
6. Religion (no active allegiance).
7. Sex (female).
8. Birth and upbringing (away from Glasgow).
9. Intelligence score (low).
10. House ownership (tenant).

All of these variables had significant simple correlations with physical symptom prevalence except for the female sex and low intelligence scores which were more prominent on regression analysis. Those who had previously lived outside Glasgow, or who had been in their present home a long time, had significantly more physical symptoms on simple correlation, but these relationships were reversed on regression analysis, probably because of the age factor. Some variables, such as social class, achieved no significance on either bivariate or multivariate analysis.

Discussion

Although the questions were phrased in simple lay language, several of the symptoms asked can be translated into medical terminology with varying degrees of diagnostic implication. For instance, from the questions on chronic cough and sputum (Table 1f) it seemed that about 12 per cent of all those studied had chronic bronchitis, and at least 49 people had symptoms suggestive of asthma. There were also two cases of haemoptysis (Table 1g). The questions on shortness of

Table 1. Part e.

Pain or swelling in private parts or front passage	5 (0.4)
a) Pain	3 (0.2)
b) Swelling	2 (0.1)
Discharge or irritation in private parts or front passage	41 (3.1)
a) Discharge	21 (1.6)
b) Irritation	10 (0.7)
a) and b)	10 (0.7)
Trouble with periods	35 (2.6)
a) Pain with last period	20 (1.5)
b) Unusually heavy last period	10 (0.7)
c) Bleeding between periods, or postmenopausal	1 (0.1)
a) and b)	4 (0.3)
Irregularity or absence of period if postmenopausal	41 (3.1)
a) Irregularity of periods	33 (2.5)
b) Absence of periods and probably not pregnant	2 (0.1)
c) Absence of periods and probably pregnant	6 (0.4)
Trouble with pregnancy	10 (0.7)
a) Morning sickness	2 (0.1)
b) Pain or bleeding	1 (0.1)
c) Other	3 (0.2)
b) and c)	1 (0.1)
a) and c)	2 (0.1)
a), b) and c)	1 (0.1)

breath were worded according to grades of dyspnoea; 260 people had varying degrees and 30 had paroxysmal nocturnal dyspnoea (Table 1g).

Answers to the questions on the cardiovascular system (Table 1h) indicated 26 people with angina, 18 with the symptoms of coronary thrombosis, and a further 51 with ill-defined pain or discomfort in the chest which is a commoner symptom than is often recognized medically (Jones, 1972). There were 17 people with intermittent claudication, 81 with leg cramps (mainly nocturnal), and 125 with varicose veins. The responses to questions on the locomotor and nervous systems (Table j and k) suggested that there may have been 29 cases of rheumatoid arthritis, and five cases of epilepsy. Less specifically, there were 72 people with low back pain, 16 with ataxia, and six with aphasia. There were 130 people with some degree of motor or sensory loss in their limbs, and 20 who were blind in one or both eyes (Table 1k).

Although some conditions such as angina and chronic bronchitis are defined in terms of symptoms, it is not possible in a subjective study to be certain about those diagnoses which are not so defined, but for which single symptoms are highly suggestive. For instance, 75 people had urinary frequency and 16 dysuria, and there were three cases of possible jaundice (Table 1b). It is likely that the woman with bleeding in pregnancy had a threatened miscarriage (Table 1e), but less likely that those who felt "more thirsty than usual" had diabetes (Table 1b).

Table 1. Part f.

Trouble with nose	365 (27.2)
a) Stuffy or runny nose, or catarrh at back of nose	355 (26.4)
b) Nose bleeds	8 (0.6)
a) and b)	2 (0.1)
Trouble with throat or voice	154 (11.5)
a) Sore throat	89 (6.6)
b) Hoarseness or loss of voice	49 (3.6)
c) Other	3 (0.2)
a) and b)	12 (0.9)
b) and c)	1 (0.1)
Cough	376 (28.0)
a) Cough now or during the past 2 weeks	214 (15.9)
b) Usually cough first on getting up	84 (6.3)
a) and b)	78 (5.8)
Sputum	265 (19.7)
a) Sputum now or during the past 2 weeks	117 (8.7)
b) Usually sputum first thing on getting up	87 (6.5)
a) and b)	61 (4.5)

Symptoms do not necessarily imply ill health or disease and one can be tired or breathless without being ill. It has been found, for instance, that symptoms often associated with anaemia bear little relation to haemoglobin levels (Wood and Elwood, 1966; Robinson and Wood, 1968). In the present study 23 per cent of those interviewed felt more tired or run down than usual (Table 1a), 17 per cent said they had had headaches during the previous two weeks (Table 1j), and one per cent thought they were paler than usual (Table 1b). It is difficult to draw any conclusions about ill health or make diagnostic inferences from such findings.

It is not easy to compare the results of this study with others because of the conceptual confusions which underlie surveys of health and illness, such as failure to distinguish between symptoms and diagnoses (Kirscht, 1971). Some studies of ill health in the community have used subjective scales and scores without being explicit about symptoms (Grogono, 1973). Others have defined

Table 1. Part g.

Wheezing or coughing up blood	106 (7.9)
a) Chest sounding wheezy or whistling	53 (3.9)
b) Attacks of shortness of breath with wheezing	14 (1.0)
c) Coughing up blood which had not been swallowed	2 (0.1)
a) and b)	34 (2.5)
a) and c)	2 (0.1)
a), b) and c)	1 (0.1)
Shortness of breath	260 (19.3)
a) When hurrying on level ground or walking up slight hill	166 (12.4)
b) When walking with people of own age on level ground	17 (1.3)
c) Having to stop for breath when walking at own pace on level ground	34 (2.5)
d) When washing or dressing	20 (1.5)
e) When sitting quietly	23 (1.7)
Attacks of palpitations or breathlessness	101 (7.5)
a) Attacks of palpitations when heart beats fast for no apparent reason	61 (4.5)
b) Attacks of breathlessness when lying down	7 (0.5)
c) Sudden attacks of breathlessness when lying down at night	12 (0.9)
a) and b)	3 (0.2)
b) and c)	2 (0.1)
a) and c)	5 (0.4)
a), b) and c)	11 (0.8)

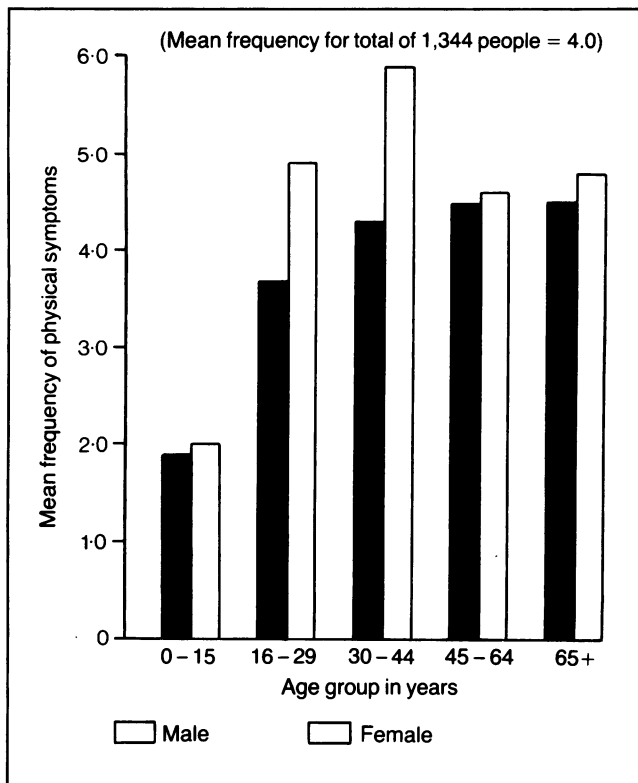


Figure 3. Age-sex distribution of physical symptoms.

ill health in terms of both symptoms, such as pain, and chronic conditions, such as asthma or piles, which are really diagnoses (Wadsworth *et al.*, 1971; Dunnell and

Table 1. Part h.

Ankle swelling or varicose veins	211 (15.7)
a) Ankle swelling in both ankles	62 (4.6)
b) Varicose veins	125 (9.3)
a) and b)	24 (1.8)
Pain or discomfort in chest which may go to arm	94 (7.0)
a) Comes on when walking and goes in 10 minutes or less if stop or slow down	25 (1.9)
b) Severe pain across front of chest which lasts for half an hour or more	17 (1.3)
c) Other pain or discomfort in chest	51 (3.8)
a) and b)	1 (0.1)
Pain in calf of either leg	114 (8.5)
a) Comes on when standing still or sitting	13 (1.0)
b) Comes on only when walking and goes in 10 minutes or less if stand still	17 (1.3)
c) Other pain in calf or either leg	81 (6.0)
a) and b)	3 (0.2)

Cartwright, 1972). At the other extreme are morbidity surveys which depend on physical examination (Rafibekov, 1969).

In spite of differences in method the predominance of respiratory symptoms has been confirmed in other community studies in the UK, (Wadsworth *et al.*, 1971; Dunnell and Cartwright, 1972) and Australia and America (Koo, 1954). Although it is important to distinguish between such surveys and those based on reported morbidity in general practice, these latter studies have also found that respiratory conditions were the commonest diagnoses (Office of Health Economics, 1972; Kennedy, 1973). In this study, nine per cent of all physical symptoms were classified as relating to the cardiovascular system, which was very similar to findings in Australia (Bridges-Webb, 1974), Germany (Christian, 1969), and Norway (Bakken, 1971), although the methods used were not always comparable.

Table 1. Part i.

Any injuries during the past two weeks	124 (9.2)
a) Burn	15 (1.1)
b) Other minor injury or accident such as a fall with bruising	104 (7.7)
c) Other serious injury or accident such as fall with broken bone	5 (0.4)
Trouble with joints	149 (11.1)
a) Pain, swelling, tenderness, or redness in small joints of hands or feet	48 (3.6)
b) Pain, swelling, tenderness, or redness in large joints	63 (4.7)
c) Morning stiffness	9 (0.7)
a) and b)	9 (0.7)
b) and c)	4 (0.3)
a) and c)	4 (0.3)
a), b) and c)	12 (0.9)
Pain in spine or large bones	193 (14.4)
a) Low back pain	72 (5.4)
b) Pain elsewhere in spine	33 (2.5)
c) Pain in large bones	67 (5.0)
a) and b)	3 (0.2)
b) and c)	8 (0.6)
a) and c)	4 (0.3)
a), b) and c)	6 (0.4)
Trouble with feet	283 (21.1)
a) Bunions, corns, or callosities	192 (14.3)
b) Ingrowing toenails	19 (1.4)
c) Flat feet or other	60 (4.5)
a) and b)	6 (0.4)
b) and c)	1 (0.1)
a) and c)	4 (0.3)
a), b) and c)	1 (0.1)

Table 1. Part j.

Loss of consciousness or convulsions	21 (1.6)
a) Loss of consciousness or blackouts	16 (1.2)
b) Convulsions or fits	5 (0.4)
Headaches or dizziness, or feeling more irritable and jumpy than usual	318 (23.7)
a) Headaches	174 (12.9)
b) Spells of dizziness or vertigo	66 (4.9)
c) Feeling more irritable and jumpy than usual	18 (1.3)
a) and b)	27 (2.0)
b) and c)	4 (0.3)
a) and c)	13 (1.0)
a), b) and c)	16 (1.2)
Facial pain, loss of speech or balance	34 (2.6)
a) Pain in face for no apparent reason	9 (0.7)
b) Loss of power of speech	6 (0.4)
c) Loss of ability to balance on feet	16 (1.2)
b) and c)	2 (0.1)
a), b) and c)	1 (0.1)

Table 1. Part k.

Trouble with ears	214 (15.9)
a) Pain, irritation or wax in ears	51 (3.8)
b) Difficulty in hearing	110 (8.2)
c) Ringing or buzzing in ears	18 (1.3)
a) and b)	14 (1.0)
b) and c)	8 (0.6)
a) and c)	6 (0.4)
a), b) and c)	7 (0.5)
Trouble with eyes	205 (15.3)
a) Pain, irritation or watering of eyes	85 (6.3)
b) Difficulty in seeing	86 (6.4)
c) Loss of sight in one or both eyes	16 (1.2)
a) and b)	14 (1.0)
b) and c)	1 (0.1)
a) and c)	3 (0.2)
Loss of power in limbs	27 (2.0)
a) Loss of power in upper limbs	11 (0.8)
b) Loss of power in lower limbs	9 (0.7)
a) and b)	7 (0.5)
Loss of feeling or alteration of sensation in limbs	103 (7.7)
a) Loss of feeling, tingling, or numbness in upper limbs	51 (3.8)
b) Loss of feeling, tingling, or numbness in lower limbs	32 (2.4)
a) and b)	20 (1.5)

Two surveys in the UK do not seem to have employed any accepted method for recording cardiovascular symptoms (Wadsworth *et al.*, 1971; Dunnell and Cartwright, 1972).

Nine per cent of all physical symptoms found in this study were classified as alimentary and the same proportion were classified as neurological. These figures are similar to those obtained from general practice in Scotland (Kennedy, 1973) and Norway (Bakken, 1971), and from community surveys in England (Wadsworth *et al.*, 1971). Six per cent of physical symptoms in the present study related to bones and joints, and five per cent involved the genitourinary system. The former proportion is similar to general-practice findings in Scotland (Kennedy, 1973), but not as high as the figure derived from community surveys in England (Wadsworth *et al.*, 1971) or Australia (Bridges-Webb, 1974), which probably reflects problems of definition rather than real differences in morbidity. The number of genitourinary symptoms found in Glasgow appeared to be more than double those found in London (Wadsworth *et al.*, 1971), but again differences in classification make comparisons difficult. The same is true for skin conditions (Office of Health Economics, 1973), although if allowances are made for the way in which symptoms were grouped, such as those relating to feet, the prevalence of skin conditions in the present study appears to be comparable to other UK surveys (Wadsworth *et al.*, 1971; Dunnell and Cartwright, 1972).

The mean number of four physical symptoms per person was similar to that found by Dunnell and Cartwright (1972). The proportion of people who had no physical symptoms (14 per cent) was the same as reported from a comparable morbidity survey in Australia (Bridges-Webb, 1974), and similar to Peckham Health Centre's 12 per cent (Pearce and Crocker, 1943). Again the value of such comparisons is limited by the different methods used.

The results of regression analysis suggest that personal characteristics such as personality, age, sex, and intelligence are important factors in the prevalence of physical symptoms. Whereas cigarette smoking might be causal, other variables such as hospital stays were mere associations. Mobility was also important and may reflect a lack of personal stability, like the absence of an active religious allegiance. Tenants may also be less stable than owner occupiers especially in areas of extensive urban redevelopment such as Glasgow.

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Acknowledgements

This study was made possible by a grant from the Social Science Research Council and was undertaken while I was attached to the Departments of Community Medicine and Social and Economic Research at the University of Glasgow. I would like to thank these departments for their encouragement, the general practitioners at the Woodside Health Centre for permission to interview their patients, Mr E. J. Maddox, Mrs McLaren, Mrs Scobbie, and Mrs Wyllie for their help as interviewers, and Mrs Robertson for secretarial assistance.

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