MEDICAL PRACTICE

Contemporary Themes

Equity and the NHS: self-reported morbidity, access, and primary care

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Summary and conclusions

The patterns of access to primary health care for 27 154 people were examined, using the raw data of the 1974 General Household Survey about self-reported morbidity and use of services. Access rates were calculated for four categories of health: the not ill, the acutely sick, the chronically sick without restricted activity, and the chronically sick with restricted activity. Contrary to the conclusions of existing publications, the analysis shows that the NHS has achieved equity in terms of access to primary health care: there is no consistent bias against the lower socioeconomic groups and, in the case of some health care categories, these have proportionately higher rates of access than their rates of self-reported morbidity would indicate. The findings also show large variations in patterns of access both between and within these categories of health.

Introduction

The National Health Service was set up in 1948 to achieve, among other objectives, equity in the distribution and the use of resources.¹ Not surprisingly, therefore, many publications over the past decades have dealt with the theme of equity in its two main dimensions: equity in terms of initial access to the health care system and equity in terms of the quality and quantity of care received once access has been achieved.²⁻¹¹

This paper deals with equity in terms of access to primary

care. It is based on a new analysis of the 1974 data collected by the General Household Survey¹²: a rolling annual sample survey of the population of Britain carried out by the Office of Population Censuses and Surveys. This has several unique advantages. Firstly, it is very large: over 14 000 households are sampled every year, thus allowing fine-mesh analysis of sub-groups in the population. Secondly, it is extremely rich in socioeconomic information about the population covered, unlike surveys of morbidity in general practice.¹³ Thirdly, it asks questions both about self-perceived morbidity and about use of the health service. It is therefore the only source of data that allows a ratio to be calculated for the relation between "need"—that is self-reported morbidity—and use by different socioeconomic groups in the population.

Several studies have already drawn on the General Household Survey data and have concluded that the NHS has failed to achieve equity in primary care^{6-9 11 12} in that the lower socioeconomic groups appear to make less use of services for any given amount of morbidity than the higher ones. Unfortunately, these conclusions were based only on tabulations available at that time. None of these provided information about use related to self-reported morbidity. Researchers relied on drawing inferences from tables dealing with what are not necessarily identical populations—that is, those reporting morbidity and those reporting use. This seems to risk falling into the ecological fallacy: a conclusion supported by the 1977 General Household Survey report¹⁴ which contradicted the previous research and showed that, for chronic ill-health, the lower socioeconomic groups were making greater use of general practitioner services than the higher socioeconomic groups.

This paper is therefore based on a reanalysis of the raw General Household Survey data. We examine the use of primary care by four health groups: those who report no morbidity, those who report acute sickness, those who report chronic sickness without any limiting effects on activity, and those who report chronic sickness with limiting effects on activity. Thus

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in contrast to previous studies based on General Household Survey data, we are able to standardise for "need" before examining patterns of access.

Methods

The analysis on which we report is part of a larger exercise designed to identify factors affecting the use of health services on the basis of the General Household Survey data. In this paper we are using 1974 data: the most recent year available to us when our work began.

For the purposes of this analysis, we excluded those households where the answers to the questionnaire about one or more individuals within it (apart from children) could be obtained only through a "proxy." The disadvantage of doing so was that we lost some bedridden elderly people, among others. The advantage was that, in our view, the information is more reliable, since eliciting answers to questions through proxies must raise doubts about validity. Altogether, we excluded 3500 so giving us a total population for analysis of 27 154. There are, however, no significant differences in the proportions in the various demographic and socioeconomic categories when our population is compared with that of the General Household Survey, as given in the published report. In the 1974 survey Scotland was over-sampled, and although the published report adjusts for this, we have not done so.

The numbers in our tables vary slightly because not all the relevant information is available for all the individuals in the survey population. For example, the information required to assign individuals to specific socioeconomic groupings is not always available.

In defining the analytical categories used, we follow the conventions adopted by the annual General Household Survey reports.

Health service users

Health service users were identified by the answers to question 3 in the health schedule of the General Household Survey: "During the two weeks ending last Sunday, apart from visits to a hospital, did you talk to a doctor for any reason at all?" The exclusion, in this question, of hospital contact means that we are identifying users of primary health care only. The population was then dichotomised into "users" and "non-users." Given that our aim is to analyse access to health care, not frequency of contact, we did not distinguish between one-time and multiple users within the reference period. The former represent 82% of all users.

TABLE I—Use of primary care services by health groups

	No in group	(% of total population)	No of users	(% of all users)	Users as % of total in group
Not sick	19 810	(72.9)	1299	(39)	6.6
Acutely sick	1 583	(5.8)	798	(24)	50.4
Chronic sick without restriction	1 987	(7.3)	303	(9)	15.2
Chronic sick with restrictions	3 774	(13.9)	920	(28)	24.4
Total	27 154	(100)	3320	(100)	12.2

Health categories

Those who report no morbidity—These were defined negatively as all those who did not fall into the three groups reporting various kinds of morbidity.

Those who report acute sickness—Following the General Household Survey convention, the "acutely sick" were classified as those who replied positively to question 2 in the health schedule of the survey. This asks: "Now I'd like you to think about all the things you usually do. For example, the things you do every day (at work/school) about the house, during your free time, etc. During the two weeks ending last Sunday, did you have to cut down on any of the things you usually do because of (this illness/disability or some other) illness or injury?"

Those who report chronic sickness without any limiting effects on activity—This category consists of those who reply positively to question 1 in the health schedule of the survey: "Do you have any long-standing illness or disability or infirmity?" but negatively to the follow-up question that asks whether the complaint limits "your activities in any way."

Those who report chronic sickness with limiting effects on activity—

This category consists of those who reply positively not only to question 1 but also to the follow-up about constraints on activity.

The four categories have been made mutually exclusive—that is, anyone coded in one category cannot be coded in any of the other categories.

Socioeconomic groups

Our classification follows that in the General Household Survey reports.¹⁵ We have also followed the usual convention of classifying women according to their husband's socioeconomic group, and children according to their father's (except in the case of women on their own). We have considerable reservations about this: insofar as health behaviour might be expected to be influenced by socioeconomic factors, it would seem at the very least plausible to assume that the woman's own socioeconomic group would be more relevant (both for herself and her children) than that of her husband. But we have followed the convention to make our results comparable with published General Household Survey data. Similarly, we have followed convention in using socioeconomic grouping as our tool for measuring equity—that is, we have adopted the general assumption that socioeconomic grouping accurately measures the distribution of resources (financial and other) in the population. Again, there are reasons for scepticism since there are considerable variations within each socioeconomic group, but we once more decided to follow convention to permit comparison with existing publications.

In carrying out the analysis we have concentrated on trying to maximise the size of the groups being examined. This is why, for example, we have put all the over-65s into one group—although it would be interesting to look at the behaviour of the over-75s separately. Even so, as may be seen from the tables, some of the numbers in the cells are perilously small for purposes of statistical analysis, despite the size of the initial population. When testing the significance of specific groups deviating from the average, the binomial approximation to the normal distribution was used.

Analysis of results

Predictably, by far the biggest group in our population of 27 154 are those who reported no sickness of any kind during the previous fortnight. This can be seen from table I which sets out the composition of our population in terms of the four health groups, and shows the percentage of users in each group. Equally predictably, it is this non-

sick group that also has the lowest access rate to primary health care services: 6.6% as against 50.4% for the acutely sick, 15.2% for the chronic sick without restrictions, and 24.4% for the chronic sick with restrictions.

But interestingly, although the not-sick group has the lowest access rate, its total consumption of primary health care is greater than that of any of the other groups: a function of its size. Out of our total population of first-time users, 39% are not sick, 24% acutely sick, 9% chronically sick without restrictions, and 28% chronically sick with restrictions. This finding is consistent with studies of general practice¹⁶ which suggest that a high proportion of patients seen by family practitioners have either no clinical symptoms of morbidity or only minor symptoms, so indicating that the questions in the 1974 General Household Survey about self-reported morbidity may in fact be eliciting valid data.

Having presented the total picture, our analysis next turns to dealing with the characteristics of the users in each of the four health groups. In doing so we concentrate on two characteristics: age and socioeconomic status. The rationale for choosing these two factors as our analytical categories is that the published tables in the General House-

hold Survey show that use is strongly related to age, and that the over-65s in particular tend to be heavy users, while looking at use by socioeconomic groups provides a way of examining the issue of equity that provides the starting point for this paper: if the NHS has indeed achieved equity in access to primary health care then there should be no difference in access rates by socioeconomic groups once morbidity has been standardised. Another factor known to be associated with the use of health services is marital status.¹⁷ But we have not included this as a factor since analysis showed that the numbers for each of our four health categories, particularly for the divorced and separated, were too small to allow statistically significant interpretations to be drawn.

Starting with the not-sick health group, table II presents access rates by age. The male group shows a U-shaped pattern, with access rates being significantly above average for the under-4s and the over-65s: the high figure of 8.6% for the under-4s possibly reflecting such factors as immunisation. In the female group, the pattern is less neat: although access rates for both age extremes are above average, they are not significantly so, and are higher still at 10.5% for women aged between 16 and 40: this presumably reflects such factors as family planning and pregnancy.

TABLE II—Use of primary care services by "not sick" by age groups

Age group	Male		Female	
	Total No in group	No (%) of users	Total No in group	No (%) of users
0-4	963	83 (8.6)	904	80 (8.8)
5-15	2190	89 (4.1)	2275	101 (4.4)
16-40	3295	147 (4.5)	3517	370 (10.5)
41-64	2345	119 (5.1)	2573	176 (6.8)
≥65	757	51 (6.7)	990	82 (8.3)
Total	9550	489 (5.1)	10259	809 (7.9)

TABLE III—Use of primary care services by "not sick" by socioeconomic status

Socioeconomic group	Male			Female		
	Total No in group	No (%) of users		Total No in group	No (%) of users	
		Actual	Predicted*		Actual	Predicted*
1 Professional	529	37 (7.0)	28 (5.2)	279	21 (7.5)	20 (7.0)
2 Employers and Managers	1435	70 (4.9)	75 (5.2)	899	76 (8.5)	62 (6.9)
3 Intermediate and junior non-manual	1552	77 (5.0)	79 (5.1)	3339	281 (8.4)	290 (8.7)
4 Skilled manual	3854	185 (4.8)	197 (5.1)	2257	166 (7.4)	158 (7.0)
5 Semi-skilled manual	1615	86 (5.3)	82 (5.1)	2464	181 (7.3)	197 (8.0)
6 Unskilled manual	371	20 (5.4)	20 (5.3)	597	51 (8.5)	46 (7.7)
Total	9356	475 (5.1)	481 (5.1)	9835	776 (7.9)	773 (7.9)

*"Predicted use" is that rate of use which would be expected on the basis of the age composition of the socioeconomic group, using weightings derived from the previous table.

Next, in table III, we turn to examining access rates by the not-sick health group according to socioeconomic categories. In this table, as in the subsequent tables examining use by socioeconomic categories, we present not only the figures of actual access rates but also the figures of the access rates that would be predicted on the basis of the age composition of the people in each group—in order to provide a check against drawing conclusions from the actual rate without taking into account the fact that the use of a particular socioeconomic group may be affected by the age of the individuals within it.

Looking at actual access rates, table III shows that for men only there appears to be a slight class bias in one respect. Those in socioeconomic group 1, categorised as professionals, have higher access rates at 7% (0.01 < p < 0.05) than the male population as a whole. But the same is not true of other middle-class men: those in group 2, employers and managers, and in group 3, intermediate and junior non-manual, have lower access rates—with 4.9% and 5.0% respectively—than the men in semi-skilled manual and unskilled manual worker families in groups 5 and 6. The access rate for the latter two groups is 5.3% and 5.4% respectively. These differences are not statistically significant. For women, however, there appears to be no social class effect whatsoever, and there are no significant differences. Comparing actual access rates to predicted access rates, we find that none of the variations can be explained by the age composition of the socioeconomic groups.

Turning to the acutely sick—that is, those who reported an interruption to their daily routine because of illness or injury in the

TABLE IV—Use of primary care services by "acutely sick" by age groups

Age group	Male		Female	
	Total No in group	No (%) of users	Total No in group	No (%) of users
0-4	112	73 (65.2)	88	65 (73.9)
5-15	185	85 (45.9)	151	83 (55.0)
16-40	278	125 (45.0)	317	166 (52.4)
41-64	173	91 (52.6)	159	57 (35.8)
≥65	49	23 (46.9)	71	30 (42.3)
Total	797	397 (49.8)	786	401 (51.0)

previous fortnight, table IV shows that, overall, half those in this health category contacted a doctor. Unsurprisingly, those with the highest access rates are children under 5. In the male group none of the differences between the other age groups show significant deviations from the average. But women between 40 and 65 make considerably lower demands on primary care than men in the same age range—perhaps because, since fewer of them are in employment, there is less need to obtain sickness absence certificates.

In this health category there is no evidence of access to primary care being biased towards the higher socioeconomic groups—in the case of men at any rate. On the contrary, as table V shows, the access rates of men increase as social class declines. While the access rate for men in socioeconomic group 1 is 40.9%, the equivalent figure for those in group 6 is 71.0%—a statistically significant and striking finding in view of the prevailing view in other publications. Again, a partial explanation may be the need for sickness absence certificates. The picture for women is more confused, and there is no class-related trend. None of the variations, either for men or women, is fully explained by the age composition of the relevant group. This seems an

important factor in the case of women in groups 1 and 4, where the predicted access rate—that is, extrapolating from age composition—would indeed suggest an above average access rate, as turns out to be the case. But for women in group 2, there is a sharp divergence between predicted and actual rates.

Next, table VI presents access rates by age among those who report chronic sickness without restrictions on their activity. Once again, access rates are highest among the under-5s—particularly so in the female group, which has higher access rates in four out of the five age groups. Surprisingly, but not significantly, the over-65s are below average in their access rates for any given amount of self-reported morbidity.

The pattern of access rates by socioeconomic group among men in this health category is, as may be seen from table VII, less clear cut than in the case of the acutely sick. But there is certainly no consistent evidence of a bias towards the upper classes. On the contrary, it is groups 4, 5, and 6 that show the highest access rates. In the case of women those in group 1 have the highest access rates—but the exceptionally small numbers concerned indicate the need for scepticism. Otherwise, it is once more groups 4, 5, and 6 that show the highest access rates. None of these differences, however, is statistically significant. Once more, none of the variations is fully explained by the age compositions of the relevant group—although the high predicted rate for women in group 1 would seem to account for at least a proportion of the high actual rate found.

Turning, finally, to the chronically sick with restrictions on their

TABLE V—Use of primary care services by "acutely sick" by socioeconomic status

Socioeconomic group	Male			Female		
	Total No in group	No (%) of users		Total No in group	No (%) of users	
		Actual	Predicted*		Actual	Predicted*
1 Professional	44	18 (40.9)	22 (49.8)	26	15 (57.7)	15 (57.1)
2 Employers and managers ..	103	43 (41.7)	52 (50.0)	62	24 (38.7)	33 (53.1)
3 Intermediate and junior non-manual	132	58 (43.9)	65 (49.3)	267	130 (48.7)	132 (49.6)
4 Skilled manual	327	164 (50.2)	163 (49.9)	185	106 (57.3)	100 (54.3)
5 Semi-skilled manual ..	142	82 (57.7)	72 (50.4)	159	87 (54.7)	80 (50.5)
6 Unskilled manual	31	22 (71.0)	15 (47.8)	53	25 (47.2)	24 (45.2)
Total	779	387 (49.7)	389 (49.9)	752	387 (51.5)	384 (51.1)

*"Predicted use" is that rate of use which would be expected on the basis of the age composition of the socioeconomic group, using weightings derived from the previous table.

TABLE VI—Use of primary care services by "chronic sick without restrictions" by age groups

Age group	Male		Female	
	Total No in group	No (%) of users	Total No in group	No (%) of users
0-4	39	8 (20.5)	40	13 (32.5)
5-15	127	16 (12.6)	104	15 (14.4)
16-40	271	30 (11.1)	255	48 (18.8)
41-64	316	51 (16.1)	374	60 (16.0)
≥65	188	20 (10.6)	273	42 (15.4)
Total	941	125 (13.3)	1046	178 (17.0)

activity, table VIII shows that the age-related patterns of access are rather different from those of the other health groups. In the male group, particularly, there are no significant variations as between the different age groups. And for both groups, access rates by the under-5s are much closer to the average than in any of the other health categories (although the numbers in this group are tiny, so that caution is indicated).

But a familiar picture emerges when the access rates by the different socioeconomic groups are examined. No consistent class bias emerges (table IX). Among men, those in group 5 have the highest access rate—while those in group 1 have the lowest, though this is not significant. Among women there are no significant differences.

TABLE VII—Use of primary care services by "chronic sick without restrictions" by socioeconomic status

Socioeconomic group	Male			Female		
	Total No in group	No (%) of users		Total No in group	No (%) of users	
		Actual	Predicted*		Actual	Predicted*
1 Professional	42	3 (7.1)	6 (13.2)	18	4 (22.2)	3 (18.3)
2 Employers and managers ..	141	19 (13.5)	19 (13.5)	78	11 (14.1)	13 (16.3)
3 Intermediate and junior non-manual	159	16 (10.1)	21 (13.4)	332	49 (14.8)	56 (17.0)
4 Skilled manual	392	57 (14.5)	52 (13.3)	196	37 (18.9)	35 (18.0)
5 Semi-skilled manual ..	146	22 (15.1)	19 (13.1)	287	50 (17.4)	48 (16.6)
6 Unskilled manual	41	6 (14.6)	5 (13.0)	75	15 (20.0)	13 (16.9)
Total	921	123 (13.4)	122 (13.2)	986	166 (16.8)	168 (17.0)

*"Predicted use" is that rate of use which would be expected on the basis of the age composition of the socioeconomic group, using weightings derived from the previous table.

TABLE VIII—Use of primary care services by "chronic sick with restrictions" by age groups

Age group	Male		Female	
	Total No in group	No (%) of users	Total No in group	No (%) of users
0-4	20	4 (20.0)	12	3 (25.0)
5-15	124	28 (22.6)	77	7 (9.1)
16-40	295	76 (25.8)	305	92 (30.2)
41-64	770	184 (23.9)	734	182 (24.8)
≥65	516	124 (24.0)	921	220 (23.9)
Total	1725	416 (24.1)	2049	504 (24.6)

Conclusions and discussion

On the basis of the evidence presented above, we can confidently conclude that Britain's primary health care system does not speak with an upper-class accent. Equity in terms of access appears broadly to have been achieved in one crucial respect at least—that is, once use has been standardised for self-reported morbidity, the remaining variations are not systematically related to social class. If there are continuing social inequalities in health¹⁸ there are no similar social inequalities in access to primary care. Indeed, for two of our four health groups there

TABLE IX—Use of primary care services by "chronic sick with restrictions" by socioeconomic status

Socioeconomic group	Male			Female		
	Total No in group	No (%) of users		Total No in group	No (%) of users	
		Actual	Predicted*		Actual	Predicted*
1 Professional	54	9 (16.7)	13 (24.4)	19	5 (26.3)	4 (22.8)
2 Employers and managers ..	211	52 (24.6)	51 (24.0)	128	31 (24.2)	30 (23.8)
3 Intermediate and junior non-manual	284	61 (21.5)	69 (24.2)	580	135 (23.3)	147 (25.4)
4 Skilled manual	690	166 (24.1)	166 (24.1)	348	90 (25.9)	81 (23.4)
5 Semi-skilled manual ..	332	100 (30.1)	80 (24.1)	638	162 (25.4)	158 (24.8)
6 Unskilled manual	121	22 (18.2)	29 (24.1)	173	39 (22.5)	43 (24.6)
Total	1692	410 (24.2)	408 (24.1)	1886	462 (24.5)	463 (24.5)

*"Predicted use" is that rate of use which would be expected on the basis of the age composition of the socioeconomic group, using weightings derived from the previous table.

was some evidence that the lower socioeconomic groups have higher access rates than their proportion of self-reported morbidity would lead one to expect—a conclusion that holds strongly for men but more tenuously for women. In other words they do better than a strict construction of the equity principle (equal access for equal amounts of morbidity) would require.

Our analysis also shows why the reverse conclusion has been wrongly drawn in other publications on the basis of the published General Household Survey tables. The only health category where, as we have seen, there is some evidence of a class bias is that of the “not sick.” This is by far the largest group, so that the numbers concerned inevitably distort any conclusions based on an aggregate analysis. The fact that it is men in socioeconomic group 1 who have the highest access rates in this health category raises some intriguing questions: it would tend to confirm the view that those in the higher socioeconomic groups make a qualitatively different use of health services from the rest of the population, perhaps making more preventive use of primary care.

These conclusions must be qualified in one respect. There are problems about using self-reported morbidity as a proxy for “need”—a contested notion in any case.¹⁹ Information elicited about morbidity tends to be sensitive to the precise formulation of the questions asked. When the OPCS changed the wording of the questions in 1977, there was a large increase in self-reported morbidity.¹⁴ Further, within any health category group we have not been able to identify the precise reason why individuals consulted their general practitioner: thus someone within the “acute” group may have consulted about their acute sickness or about something else. This constrains us to draw general conclusions about equity in terms of access as between socioeconomic groups, rather than precise conclusions about the matching of use and need in the case of individuals within them.

Our findings have two further implications. Firstly, our analysis shows that the over-65s often have below average access rates. This is surprising, given the evidence that rationing by queueing tends to encourage use by those whose time-costs are lowest.²⁰ This might be expected to favour the elderly, so our finding that when sick they are getting at best no more than their share of access may give cause for concern.

Secondly, our analysis confirms our initial hypothesis that different health groups have different patterns of seeking health care. Further, they show that even within these groups different factors appear to influence the behaviour of men and women. Given their different needs, this is not surprising. But these findings underline the fact that, in trying to understand the factors that shape the use made of health care services, such crude analytical tools as social class are not very helpful. In future papers we therefore hope to explore the other factors that may help to explain the complex and sometimes puzzling patterns that we have uncovered.

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Some American books on infertility recommend the use of diethylstilboestrol to improve the poor quality of cervical mucus. Is this so, and what is the rationale?

The physical properties of cervical mucus vary throughout the normal cycle. It becomes profuse, clear, and runny especially about the time of ovulation. Such mucus, whose cause is the rising oestrogen secretion of the first half of the cycle, is particularly receptive to spermatozoa. This can be shown in postcoital tests or on a microscope slide with an interface between mucus and semen. Under the influence of progesterone in the second half of the cycle the mucus becomes tacky and less receptive to sperm. Another test of the effect of oestrogen on cervical mucus is that of ferning. Mucus is mixed with physiological saline on a slide and is then allowed to dry. Crystals looking like ferns are easy to see when the mucus is obtained in the first half of the cycle,

and they cannot be found in mucus under the influence of progesterone. Some gynaecologists describe a “weak” ferning pattern, which may suggest a relative lack of oestrogen that might be remedied by giving some preparation of oestrogen (not necessarily stilboestrol) in the first half of the cycle. This might improve the “quality” of the mucus and allow easier penetration by spermatozoa. The evidence for the value of this treatment is not strong, yet it is probably harmless and gives both patient and doctor some hopes of success. If pregnancy ensues it probably does not matter how the hormone has worked if, indeed, it has had any effect at all. To be as scientifically rigorous as possible the treatment should not be started until postcoital and ferning tests have been done, and at the least the treatment ought to be checked by repeating them to see if there has been improvement in quality.