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Measuring valuations for health states:

A survey of patients in general practice

by Paul Kind

DISCUSSION PAPER 76

MEASURING VALUATIONS FOR HEALTH STATES:
A SURVEY OF PATIENTS IN GENERAL PRACTICE

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Abstract

Despite growing interest in the measurement of health-related quality of life no single means of achieving such measurement has so far emerged as a standard. Researchers from 5 European and Scandinavian countries have jointly developed a common generic measure. The Euroqol[c] questionnaire was designed as a self-administered instrument to complement other forms of quality of life measurement. A postal survey of some 1300 patients in General Practice was carried out to check the feasibility of collecting valuations for health states using the Eurqol[c] questionnaire. This paper describes the results of that survey which revealed significant differences in values for more severe health states, particularly associated with respondents' level of educational achievement.

Introduction

The measurement of health-related quality of life depends upon the capacity to describe and quantify states of health. It is generally agreed that no single method for achieving such measurement has so far emerged as an acknowledged standard metric. Many researchers have contributed to the development of new measures, but until recently there had been little progress in coordinating this diffuse research effort. Following an initiative taken by Alan Williams at the University of York a number of researchers from centres in Finland, Netherlands, Norway, Sweden and the UK set up a group which agreed to examine ways of collaborating, and to establish a core task which would be common to all future research activities[1]. An account of the genesis and objectives of the group is currently in press (Health Policy, 1990). After much lengthy discussion 6 descriptive dimensions were finally selected by the group, with each dimension being divided into 2 or 3 discrete levels (see Figure 1). A total of 216 combinations of these sub-divided dimensions are theoretically possible and from these a subset of 14 were chosen for further experimentation. These formed the basis of a questionnaire, designed by the EuroQoL[c] group.

The questionnaire comprises 3 broad sections, the first of which captures information about the respondents present state of health described in terms of the EuroQoL[c] classification as well as a measure of self-rated health status recorded on a visual analogue scale (VAS) laid-out vertically on the page. This 'thermometer' is used as the standard means of recording valuations for health states in the EuroQoL[c] instrument and has been used elsewhere in a similar role (Sintonen, 1981). The second section presents 16 health states in 2 groups of 8. (See Figure 2) Each group of 8

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[1]The membership of what became known as the EuroQoL[c] group is listed in the annexe to this paper.

Figure 1: EuroQol Descriptive Classification

Mobility

1. No problems walking about
2. Unable to walk about without a stick, crutch or walking frame
3. Confined to bed

Self-Care

1. No problems with self-care
2. Unable to dress self
3. Unable to feed self

Main Activity

1. Able to perform main activity (e.g. work, study, housework)
2. Unable to perform main activity

Social Relationships

1. Able to pursue family and leisure activities
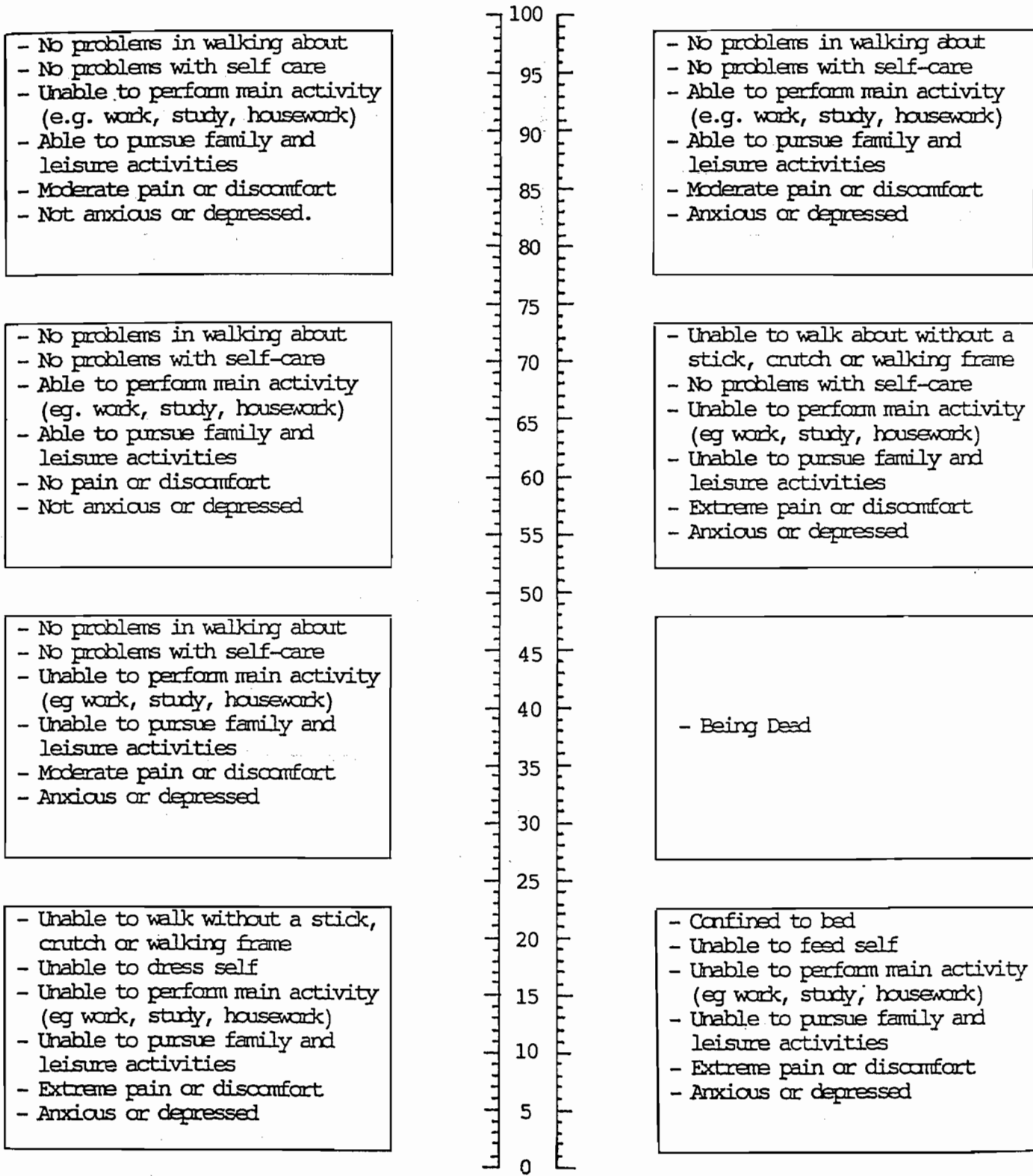2. Unable to pursue family and leisure activities

Pain

1. No pain or discomfort
2. Moderate pain or discomfort
3. Extreme pain or discomfort

Mood

1. Not anxious or depressed
2. Anxious or depressed

BEST IMAGINABLE
HEALTH STATE

- No problems in walking about
- No problems with self care
- Unable to perform main activity
  (e.g. work, study, housework)
- Able to pursue family and
  leisure activities
- Moderate pain or discomfort
- Not anxious or depressed.

- No problems in walking about
- No problems with self-care
- Able to perform main activity
  (e.g. work, study, housework)
- Able to pursue family and
  leisure activities
- Moderate pain or discomfort
- Anxious or depressed

- No problems in walking about
- No problems with self-care
- Able to perform main activity
  (eg. work, study, housework)
- Able to pursue family and
  leisure activities
- No pain or discomfort
- Not anxious or depressed

- Unable to walk about without a
  stick, crutch or walking frame
- No problems with self-care
- Unable to perform main activity
  (eg work, study, housework)
- Unable to pursue family and
  leisure activities
- Extreme pain or discomfort
- Anxious or depressed

- No problems in walking about
- No problems with self-care
- Unable to perform main activity
  (eg work, study, housework)
- Unable to pursue family and
  leisure activities
- Moderate pain or discomfort
- Anxious or depressed

- Being Dead

- Unable to walk without a stick,
  crutch or walking frame
- Unable to dress self
- Unable to perform main activity
  (eg work, study, housework)
- Unable to pursue family and
  leisure activities
- Extreme pain or discomfort
- Anxious or depressed

- Confined to bed
- Unable to feed self
- Unable to perform main activity
  (eg work, study, housework)
- Unable to pursue family and
  leisure activities
- Extreme pain or discomfort
- Anxious or depressed

100
95
90
85
80
75
70
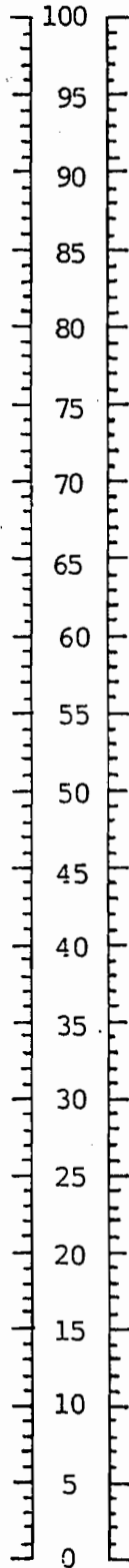65
60
55
50
45
40
35
30
25
20
15
10
5
0

WORST IMAGINABLE
HEALTH STATE

3

In the same way as on the previous page, please indicate how good or bad these additional health states are, by drawing a line from each box to a point on the scale.

BEST IMAGINABLE
HEALTH STATE

- No problems in walking about
- No problems with self care
- Able perform main activity
  (e.g. work, study, housework)
- Able to pursue family and
  leisure activities
- Moderate pain or discomfort
- Not anxious or depressed.

- No problems in walking about
- No problems with self-care
- Unable to perform main activity
  (eg. work, study, housework)
- Unable to pursue family and
  leisure activities
- Extreme pain or discomfort
- Anxious or depressed

- Being Dead

- Confined to bed
- Unable to dress self
- Unable to perform main activity
  (eg work, study, housework)
- Unable to pursue family and
  leisure activities
- Extreme pain or discomfort
- Anxious or depressed

100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0

- No problems in walking about
- No problems with self-care
- Unable to perform main activity
  (e.g. work, study, housework)
- Able to pursue family and
  leisure activities
- Extreme pain or discomfort
- Not anxious or depressed

- No problems in walking about
- No problems with self-care
- Able to perform main activity
  (eg work, study, housework)
- Able to pursue family and
  leisure activities
- No pain or discomfort
- Anxious or depressed

- No problems in walking about
- No problems with self-care
- Unable to perform main activity
  (eg work, study, housework)
- Unable to pursue family and
  leisure activities
- Moderate pain or discomfort
- Anxious or depressed

- Unable to walk without a stick,
  crutch or walking frame
- Unable to feed self
- Unable to perform main activity
  (eg work, study, housework)
- Unable to pursue family and
  leisure activities
- Extreme pain or discomfort
- Anxious or depressed

WORST IMAGINABLE
HEALTH STATE

4

appears on a single page adjacent to a thermometer rating scale. Two of the states were included in both groups to generate data on internal consistency of repeated judgements. The final section is designed to capture general information about some of the personal characteristics of the respondent, including age, sex, smoking behaviour, work status, education and involvement with the health service. The EuroQoL[c] questionnaire was designed as a self-administered instrument so as to facilitate its use in a wide range of situations. This paper reports on results obtained from a postal survey conducted on patients registered with a large general practice.

In August 1988, specially printed questionnaires were posted to 1321 patients who had been selected previously as a 1 in 10 sample of the patients registered with a group practice in Frome, Somerset. Every effort was made in drawing up this sample to exclude members of the same household, and to ensure that only patients aged over 16 were sent copies of the questionnaire. The age/sex distribution of the sample was made available to us by the practice administrator and is shown in Table 1. In addition to the questionnaires sent out in the main survey, a second set of questionnaires was distributed by the senior member of the practice to colleagues within the practice, and their families. No information on the personal characteristics of this second set of potential participants was available.

Questionnaires, which were returned anonymously, began to arrive within 48 hours of the original mailing and within 5 working days nearly 300 had been returned. Industrial action disrupted postal deliveries but questionnaires continued to arrive sporadically during September and when the data files were finally closed in mid-October after 7 weeks, a total of 530 questionnaires had been received. The total was made up of 492 which had been mailed to patients and 38 that had been distributed amongst practice staff. The overall return rate was 39%.

Days	1-5	6-10	11-15	16-20	21-25	26-30	31-35
No. of questionnaires received	298	90	39	36	17	10	4
% of final total	57	17	7	7	3	2	1

6% of postmarks were unreadable

In addition to the questionnaires which were correctly delivered, a further 138 (10% of the original mailshot) were returned undelivered to the Centre for Health Economics because the addressee had died or had moved elsewhere.

The age/sex distribution of the patients who returned their questionnaires was compared with the known distribution of the overall sample and with the population of Bath Health Authority (based on 1985 OPCS estimates), and these are listed in Table 1. As can be seen in Table 2 there was no significant difference in response rate amongst female recipients, although there was a marginally above-average response amongst 55-75 year olds. Despite the higher response rate amongst women there was no difference between the age/sex distribution of patients in the original 1:10 sample and that found amongst the returned questionnaires. The pattern of responses differed marginally amongst male patients. In particular there was a poor response rate from males aged 16-25, although like female patients, there was a more positive response from older recipients between 60 and 75 years, but there is no statistically significant relationship between age and response rate.

The age/sex distribution of the practice sample was not available for comparison, but on the assumption that questionnaires were given to 70 members or associates of the Frome practice then the return rate of 54% amongst this group of respondents is substantially higher than that of the patient sample.

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Background Data - Patient Sample

Table 3 summarises responses from patients to the main questionnaire items. The mean age of all patients was 51 years with the average for women being some 5 years greater than that of men in the sample. Over 75% of men indicated that they were currently in work and a further 21% were retired. Women revealed an employment rate which was half that of men, with a similar number indicating that their main activity was that of housewife. Just under 20% of women had experience of working for health or social services - over 3 times the proportion of men with similar experience. A higher percentage of men than women had received only the minimum education, although equal proportions had obtained a degree or equivalent professional qualification. The proportion of males who indicated that they were current smokers is only slightly below the nationally reported rate of 33% (GHS, 1988), whilst the rate found amongst female respondents is substantially lower than the national average figure of 30%.

Tables 4 to 6 summarise respondents' past and present experience of illness. Virtually identical proportions of men and women have experienced serious illness, mainly in members of their family. A slightly higher proportion of women have gained this experience through caring for others. Current health status can be gauged using 2 different questionnaire items. The 6 dimensions which make up the EuroQoL[c] classification appeared as a series of questions which respondents answered as if they applied to themselves. These self-ratings revealed relatively small numbers of patients unable to walk, dress, work or perform family and leisure activities. 8% of patients were anxious or depressed but over 30% indicated that they had moderate or extreme pain or discomfort. The vast majority of patients regarded their health as unchanged over the past year. 12% thought it was now better, and 4% rated it as worse.

Patients also made direct ratings of their overall health status on the thermometer scale. Mean values for these responses are given in Table 6. There are no significant differences between men and women in any of the age groups. There is a general drift downwards in the mean ratings with increasing age, although it is interesting to note that there is a slight improvement in self-rated health status for both men and women as they move from the 16-30 age group to the 31-45 age group. For patients as a group self-rated health status was negatively, and significantly, correlated with age ($r = -0.35$ $p < 0.001$).

The EuroQoL[c] classification defines a maximum of 216 states. The self-rated categorisation of respondents' health status using the EuroQoL dimensions can easily be converted into equivalent states and these are listed in Table 7. 69% are classified as being in the best possible state within the classification (11 11 11). A further 22% reported problems on a single dimension only, of which pain and mood state are the most frequently cited. 11% of respondents reported moderate pain (all women), and 8% reported feeling anxious or depressed. A total of 23 states, amounting to 11% of the maximum, were found in this random sample of patients in the community.

Background Data - Practice Sample

Table 8 provides the background on respondents in the practice sample. The percentage of women is higher in this sample than in that of the patients, and both men and women are younger on average. All the men and 90% of the women were currently in work, although curiously amongst this sample 2 respondents indicated that they had no experience of work with health or social services and were presumed to be relatives of practice staff. Virtually all men had a degree or other professional qualification whereas this applied to less than half of the women. 25% of men were

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current smokers, a comparable rate to that in the patient sample, however a greater proportion had never smoked at all. Fewer women in the practice were current smokers than were found amongst the patients.

The proportion of men and women who had experienced serious illness themselves was much lower than in the patient sample (see Table 9). Practice families appeared to have experienced marginally more serious illness in their family than had the patient population. Almost all the male practice respondents have experienced serious illness in caring for others, whereas only 70% of female practice respondents had done so. Nevertheless both proportions are substantially higher than in the patients sample, as might be expected.

Validity of Responses

The questionnaire's central task involved rating 16 health states arranged in 2 sets of 8. Two states from the first set were repeated in the second, primarily as a check on test-retest reliability. The vertical rating scale used in this questionnaire has been used elsewhere for a similar health state valuation. The questionnaire was designed so that respondents drew a line from a box containing a health state description to the point on the line which indicated how good or bad they considered it to be. It rapidly became apparent that many respondents had difficulty interpreting and/or complying with these instructions. Failure to comply took a number of forms. From written comments made on the returned questionnaires it was clear that some respondents found the notion of rating health states difficult in itself. No systematic analysis of this problem could be attempted other than by reference to the responses to the follow-up question dealing with ease of completion (see table 10). 62% of patients found it easy or very easy to complete, although this was no guarantee that they had satisfactorily completed the health state ratings. A similar proportion of the

practice sample found the questionnaire easy to cope with. Invalid responses took two basic forms:

(a)   partial completion - ratings for one or more health states had been omitted. One third of the practice respondents failed to supply a rating for "being dead", about half that number left other items blank, and about half that number failed to rate any of the 16 health states.

(b)   multiple ratings - about 12% of the respondents rated each component in a health state description separately, so that multiple lines emanated from each box, rather than a single line. This phenomenon clearly resulted from the physical layout of the health state descriptions. Multiple responses of this type were also treated as invalid.

Questionnaires completed by respondents who made any error or omission in rating the 16 health states were categorised as invalid and were only included for the purpose of establishing the overall picture as far as background items were concerned. Invalid questionnaires were excluded from the computation of mean health state values. Valid responses were obtained from 56% of patients and 83% of practice respondents.

As will be seen from Table 11, invalid health ratings were equally frequent amongst men and women in the patient sample and were not linked to the reported ease or the length of time required to complete the questionnaire. The educational background of respondents, however, did account for significant differences in validity with those who had received futher education making fewer invalid responses. Increased age and lower values for self-rated health status were both associated with significantly lower levels of valid responses.

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Logical Consistency

The expected ordering of some pairs of states can be determined by inspection, for example, where states differ by one level within a single dimension - as in 11 11 11 and 11 11 21. Thirteen such pairs are present in the EuroQoL[c] states and these are listed in Table 12. Each pair of states produced a number of respondents who recorded ratings which were inconsistent in terms of their expected ordering. The inconsistency rate varies from 5% to over 30%. The higher rate refers to comparison of values for states 11 11 12 and 11 11 22 - states which only differ in terms of the contribution of dimension 5 (pain).

The distance between states can be computed using the so-called city-block metric. Each level within dimensions is weighted equally and the sum of the differences between levels across each of the 6 dimensions generates a measure of the distance between states. For example, the distance between states 32 22 33 & 23 22 32 is given by

	3	2	2	2	3	3
	2	3	2	2	3	2
difference	1	1	0	0	0	1

distance between states is 3 blocks. Table 13 gives the inconsistency rate amongst respondents as a function of the distance betweeen EuroQoL[c] states. There is a clearly increasing frequency of consistent responses as the distance between states becomes greater. Where states are closer to each other subjects tend to make more inconsistent judgements about their relative valuations.

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Valuations

The central rating task was completed by 292 patients and 35 members of the Frome practice who recorded valid responses for the 16 EuroQoL^c states. The means and standard deviations for both sets of respondents are set out in Table 14. The rank order of states differs only slightly as a consequence of the elevated practice score for "being dead". Apart from this single transposition the ranking display remarkable agreement. Scores for each health state, too, typically differ by no more than 3 or 4 with most practice scores being <u>higher</u> than the equivalent scores produced by patients. States rated as worse than "being dead" by the practice are, however, <u>lower</u> than patients' scores.

Significant differences emerge in the scores for "being dead" and for those states rated as being worse than dead. Patients rated 3 states as worse than dead (23 22 32, 32 22 32 & 33 22 32) and the practice respondents included a fourth (22 22 32). These states have much of their descriptive content in common with other states which are rated as better than "being dead". The ** 22 32 combination appears in 6 of the health states and describes and individual who is unable to perform their main activity/cannot pursue family or leisure activities/has extreme pain or discomfort and is anxious or depressed. Both practice and patients agree that when this description is applied to an individual who can walk about and has no self-care problems that state is rated more highly than death. As the additional problems arise with physical mobility and/or self-care then such health states are rated below death.

The larger size of the patient sample made it possible to compare the scores produced by a variety of subsets. These are shown in Tables 15(a) - 15(f). No significant differences are evident when patients are grouped according to age. Male patients tended to rate states more highly than female patients although only 3

middle-ranking states show statistically significant differences. Self-ratings of health were used to reclassify patients, taking 85/100 as a cut-off point (the median self-rated health state rating for respondents as a whole). Patients with a higher self-rating tended to rate the 16 health states more highly than patients with lower self-ratings, except for "being dead", where the reverse was true. The differences in scores were statistically significant for half the EuroQoL[c] states. Current and ex-smokers rate death significantly more highly than never smokers. Otherwise both groups have much the same values.

The most dramatic differences between respondents was found when they were grouped according to educational background. Table 15(e) shows that scores differed significantly for 13 / 16 of the states, with non-significant differences only occurring for 3 of the less serious states. Otherwise patients with intermediate or higher education produced lower scores than those with minimum education, except for "being dead". Since the practice sample has a presumed shared educational experience with patients who had obtained a degree or other professional qualification, the ratings for these two groups were also compared. All significant differences were lost save for state 112131 (a middle ranking state). The extent of the differences manifested when respondents are grouped according to educational attainment indicates that this will be a major factor in subsequent data analysis.

Those who work (or have worked) in Health or Social Services rated their own health significantly higher than those who have never worked in these services (Table 15(f)). The worst core states were rated higher by those who have worked in Health or Social Services. This corresponds with the practice versus patient comparisons in Table 14.

References

EuroQoL Group (1990) New Facility for the Measurement of Health-Related Quality of Life. Health Policy, 16(3), December 1990, pp. 199-208.

Sintonen, H. (1981) An Approach to Measuring and Valuing Health States. Social Science and Medicine, 15c, 55-65.

Table 1: <u>Distribution of 3 Populations by Age/Sex</u>

Age	Original Sample	All Respondents	Bath Health Authority+
<u>Male</u>			
16-30	11%	7%	15%
31-45	13%	13%	12%
46-60	12%	9%	10%
61-70	7%	9%	8%
76+	2%	2%	3%
<u>Females</u>			
16-30	8%	8%	14%
31-45	15%	16%	12%
46-60	11%	14%	10%
61-70	13%	15%	10%
76+	8%	7%	6%
Denominator	1321	525 *	323,800

+   (based on OPCS estimates for 1985)

*   age/sex not known in 5 cases

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Table 2:   Response Rates Amongst Frome Patients

	no. of questionnaires mailed out	no. of respondents	response rate
Male			
age			
16-30	150	37	25%
31-45	174	64	37%
46-60	154	42	27%
61-75	91	47	52%
76+	32	9	28%
Total	601	199	33%
Female			
age			
16-30	112	35	31%
31-45	194	77	40%
46-60	149	63	42%
61-75	165	77	47%
76+	100	36	36%
Total	720	288	40%

Table 3 :   Characteristics of the Patient Sample

	male	female	all
Number	200	289	492 [1]
Average age	48.16	53.26	51.29

Smoking

	male	female	all
current smoker	56 (28)	56 (20)	112 (23)
ex-smoker	89 (45)	71 (25)	160 (33)
never smoked	54 (27)	158 (55)	212 (44)

Current main activity

	male	female	all
Employed	153 (77)	105 (36)	258 (53)
Retired	41 (21)	79 (27)	120 (25)
Housewife	1	102 (35)	103 (21)
Student	1	2	3
Seeking work	3	1	4
Other/missing	1	0	1

Education

	male	female	all
Minimum schooling	123 (62)	166 (58)	289 (60)
Intermediate	39 (20)	67 (24)	106 (22)
Higher/degree level	36 (18)	51 (18)	87 (18)

Worked in Health or Social Services

	male	female	all
	13 (7)	56 (20)	69 (14)

(Figures in brackets are percentages)

[1] 3 subjects failed to record their sex

Table 4 : Experience of Illness: Patients Sample
(Number and as per cent of total)

	male	female	all
Respondent themselves	62 (32)	73 (29)	135 (31)
Respondent's family	106 (60)	145 (61)	251 (61)
In others	51 (32)	94 (43)	145 (38)

Table 5 : Present Health Status of Patient Sample

	male	female	all
Unable to walk without aid	7 (4%)	15 (5%)	22 (5%)
Unable to dress	1	5 (2%)	6 (1%)
Unable to work	10 (5%)	15 (5%)	25 (5%)
Unable to perform family / leisure activities	9 (5%)	16 (6%)	25 (5%)
Moderate pain	56 (28%)	80 (28%)	136 (28%)
Extreme pain	2 (1%)	7 (3%)	9 (2%)
Anxious or depressed	10 (5%)	28 (10%)	38 (8%)
Change in health status over past year			
Better	28 (14%)	35 (12%)	63 (13%)
Same	166 (83%)	238 (84%)	405 (83%)
Worse	7 (4%)	12 (4%)	19 (4%)

Table 6:   Self-Rated Health Status in Patients' Sample

Age group	male		female	
	mean	(n=205)	mean	(n=297)
16 - 30	88.1	(37)	86.8	(35)
31 - 45	88.5	(64)	87.3	(77)
46 - 60	83.0	(42)	81.9	(63)
61 - 75	77.8	(47)	77.8	(77)
76+	71.1	(9)	67.1	(36)
All	83.9	(197)	81.4	(279)

Table 7: <u>Frequency Distribution of Self-Rated Health States</u>

State	No. of respondents	% of all	% of valid	Cumulative percentage
111111	353	66.6	69.2	69.2
111121	95	17.9	18.6	87.8
111112	16	3.0	3.1	91.0
111122	16	3.0	3.1	94.1
212221	4	.8	.8	94.9
211121	3	.6	.6	95.5
212222	3	.6	.6	96.1
111231	2	.4	.4	96.5
112222	2	.4	.4	96.9
212121	2	.4	.4	97.3
212231	2	.4	.4	97.6
111221	1	.2	.2	97.8
112111	1	.2	.2	98.0
112121	1	.2	.2	98.2
112211	1	.2	.2	98.4
112221	1	.2	.2	98.6
122232	1	.2	.2	98.8
211211	1	.2	.2	99.0
211221	1	.2	.2	99.2
212131	1	.2	.2	99.4
222221	1	.2	.2	99.6
222231	1	.2	.2	99.8
222232	1	.2	.2	100.0
Missing	20	3.8		
Total	530	100.0	100.0	

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Table 8:   Characteristic of the Practice Sample

	male		female		all practic	
Number	11		27		38	
Average age	44.5		42.3		43.0	
Smoking						
Current smoker	3	(27)	3	(11)	6	(16)
Ex-smoker	3	(27)	7	(26)	10	(26)
Never smoked	5	(46)	17	(63)	21	(58)
Current main activity						
Employed	11	(100)	24	(89)	35	(92)
Housewife	-		3	(11)	3	(8)
Education						
Minimum schooling	1	(9)	12	(46)	13	(40)
Intermediate	-		5	(19)	5	(7)
Higher/degree level	10	(91)	9	(35)	19	(52)
Worked in Social/Health Service	9	(82)	27	(100)	36	(95)

(figures in brackets are percentages)

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Table 9:   <u>Experience of Illness: Practice Sample</u>
          <u>(number and percentage of total)</u>

	male		female		all practic	
Themselves	2	(18)	2	(7)	4	(11)
In their family	7	(64)	17	(63)	24	(63)
In others	10	(91)	17	(63)	27	(71)

(figures in brackets are percentages)

Table 10:   <u>Respondents' Reaction to Questionnaire</u>

	patients	practice
% find questionnaire easy/very easy	62%	58%
% completing questionnaire in less than 10 minutes	36%	53%
% valid responses	57%	84%
% omitting valuation for "being dead"	31%	8%
% blanks other than dead	25%	3%
% missing pages	6% page 1 8% page 2	nil
% making multiple responses to at least one health state	12%	7%

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Table 11:   **Validity of Health State Ratings in Patient Sample**

Age

    60 or under   70% valid
    61 or over   31%

Sex

    male   58%
    female   56%

Education

    minimum schooling   51%
    degree or further education   65%

Main activity

    employed   65%
    retired   35%
    housewife   60%

Smoking behaviour

    non-smokers   53%
    smokers or ex-smokers   60%

Own health rating

    less than 50   35%
    51 - 80   54%
    over 80   62%

Table 12: Logically Inconsistent Valuations in Pairs of Adjacent EuroQoL States

States		No. of inconsistent respondents	% of respondents in error
Better state	Worse state		
11 11 11	11 11 21	50	10.2
11 11 11	11 11 12	27	5.5
11 11 21	11 21 21	55	11.2
11 11 21	11 11 22	46	9.3
11 11 12	11 11 22	155	31.5
11 21 21	11 21 31	82	16.7
11 22 22	11 22 32	124	25.2
11 22 32	21 22 32	67	13.6
21 22 32	22 22 32	25	5.1
22 22 32	23 22 32	79	16.1
22 22 32	32 22 32	40	8.1
23 22 32	32 22 33	56	11.4
32 22 32	33 22 33	61	12.4

Table 13:   Inconsistency Rate as a Function of Distance between States

Distance between states (city-block metric)	No. of pairs	% consistent respondents
1	13	30.3
2	11	68.7
3	10	80.3
4	9	89.2
5	8	95.9
6	8	97.4
7	7	99.0
8	4	99.6
9	1	99.6

Table 14: Scores for EuroQoL Core States

	Patient (n=278)		Practice (n=32)+		
	mean	SD	mean	SD	
11 11 11	94.86	9.60	93.72	10.30	
11 11 21	80.44	13.79	85.63	11.17	*
11 11 12	67.35	18.61	68.66	10.98	
11 21 21	66.61	18.15	67.31	19.69	
11 11 22	65.22	17.99	67.03	12.47	
11 21 31	55.38	18.78	57.84	16.25	
11 22 22 (a)	41.40	17.34	39.00	17.31	
11 22 22 (b)	40.71	16.61	38.31	14.96	
11 22 32	35.47	16.95	37.13	16.96	
21 22 32	26.16	15.86	27.31	18.97	
22 22 32	12.05	12.08	9.56	8.58	
dead (a)	8.45	17.06	20.78	33.84	*
dead (b)	8.83	17.62	24.00	35.95	*
23 22 32	8.31	9.53	5.56	5.63	**
32 22 32	4.97	6.90	2.63	3.80	**
33 22 32	4.13	6.21	1.94	3.18	**
own health	84.38	13.22	90.65	7.94	***

+   These scores are based on valid respondents only

*   t-test significant at 0.05 level
**   t-test significant at 0.01 level
***   t-test significant at 0.001 level

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Table 15 (a):   Ratings of Health States in Patient Sample by Age of Respondents

Core state	Aged 60 or under (n=225)	Aged over 60 (n=50)	
11 11 11	95.44	91.94	
11 11 21	80.35	80.26	
11 11 12	67.50	67.24	
11 21 21	66.12	68.70	
11 11 22	65.53	64.16	
11 21 31	56.24	51.94	
11 22 22 (a)	40.59	45.80	
11 22 22 (b)	40.66	41.48	
11 22 32	35.36	36.28	
21 22 32	25.65	29.02	
22 22 32	11.64	14.22	
dead (a)	7.76	11.76	
dead (b)	8.12	12.28	
23 22 32	8.48	7.76	
32 22 32	4.82	5.90	
33 22 32	4.01	4.70	
own health	86.32	76.10	***

**   t-test significant at 0.001 level

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Table 15(b): <u>Ratings of Health States in Patient Sample</u>
<u>by Sex of Respondents</u>

Core state	male (n=116)	female (n=162)	
11 11 11	94.22	95.32	
11 11 21	80.78	80.19	
11 11 12	68.09	66.83	
11 21 21	67.05	66.29	
11 11 22	68.02	63.22	*
11 21 31	58.52	53.14	*
11 22 22 (a)	43.90	39.62	*
11 22 22 (b)	42.08	39.73	
11 22 32	37.43	34.07	
21 22 32	27.91	24.91	
22 22 32	13.50	11.00	
dead (a)	7.79	8.93	
dead (b)	8.63	8.97	
23 22 32	9.47	7.48	
32 22 32	5.66	4.48	
33 22 32	4.77	3.67	
own health	85.62	83.49	

*   t-test significant at 0.05 level

Table 15(c): <u>Ratings of Health States in Patient Sample</u>
<u>by Self-Rated Health Status</u>

Core state	Own health rated < 85 (n=103)	Own health rated > 84 (n=172)	
11 11 11	92.73	96.13	*
11 11 21	77.63	81.81	*
11 11 12	66.37	67.66	
11 21 21	65.07	67.32	
11 11 22	63.57	66.41	
11 21 31	50.44	58.05	***
11 22 22 (a)	38.61	42.86	*
11 22 22 (b)	37.46	42.22	*
11 22 32	32.35	37.03	*
21 22 32	24.77	27.02	
22 22 32	11.21	12.56	
dead (a)	11.44	6.67	*
dead (b)	12.08	6.95	*
23 22 32	8.39	8.31	
32 22 32	4.94	4.91	
33 22 32	4.01	4.13	
own health	71.01	92.39	***

```
       t-test significant at 0.05 level
*      t-test significant at 0.001 level
```

Table 15(d): <u>Ratings of Health States in Patient Sample by</u>
<u>Smoking Behaviour of Respondents</u>

Core state	Current or ex-smokers (n=161)	Never-smokers (n=111)	
11 11 11	95.02	94.50	
11 11 21	80.98	79.44	
11 11 12	67.46	66.89	
11 21 21	66.77	66.37	
11 11 22	65.33	64.91	
11 21 31	55.09	55.32	
11 22 22 (a)	42.42	39.83	
11 22 22 (b)	40.94	40.17	
11 22 32	36.14	34.09	
21 22 32	25.96	26.19	
22 22 32	11.88	12.35	
dead (a)	10.43	5.71	*
dead (b)	10.52	6.55	*
23 22 32	8.17	8.35	
32 22 32	4.73	5.19	
33 22 32	3.93	4.36	
own health	84.58	84.08	

*   t-test significant at 0.05 level

Table 15(e): <u>Ratings of Health States in Patient Sample</u>
<u>by Level of Education of Respondents</u>

Core state	Minimum education (n=145)	Intermediate or higher level education (n=125)	
11 11 11	92.93	97.02	***
11 11 21	81.03	79.53	
11 11 12	68.34	66.40	
11 21 21	68.46	64.60	
11 11 22	67.42	62.68	*
11 21 31	58.70	51.46	**
11 22 22 (a)	43.64	38.54	*
11 22 22 (b)	42.84	38.22	*
11 22 32	38.84	31.43	***
21 22 32	28.66	23.13	**
22 22 32	13.72	10.05	*
dead (a)	6.08	11.09	*
dead (b)	6.34	11.62	*
23 22 32	10.12	6.09	***
32 22 32	6.26	3.37	***
33 22 32	4.98	2.99	**
own health	83.43	85.80	

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        t-test significant at 0.05 level
*       t-test significant at 0.01 level
**      t-test significant at 0.001 level
```

Table 15(f): <u>Ratings of Health States in Patient Sample by</u>
<u>Experience of Health and Social Services</u>

Core State	Never worked in Health/Soc. Serv. (n=243)	Worked in Health/Soc. Serv. (n=66)	
11 11 11	94.62	95.56	
11 11 21	80.70	82.11	
11 11 12	68.13	65.17	
11 21 21	66.46	67.76	
11 11 22	65.90	63.68	
11 21 31	55.72	55.39	
11 22 22 (a)	41.20	40.98	
11 22 22 (b)	40.61	39.92	
11 22 32	35.70	35.39	
21 22 32	26.47	25.53	
22 22 32	12.27	9.82	
dead (a)	8.05	16.00	*
dead (b)	8.60	17.14	*
23 22 32	8.56	6.12	*
32 22 32	5.12	3.26	*
33 22 32	4.19	2.85	*
own health	83.79	89.95	***

*   t-test significant at 0.05 level
***   t-test significant at 0.001 level

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