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Valuing Health States :
The Effect of Duration

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DISCUSSION PAPER 143

VALUING HEALTH STATES: THE EFFECT OF DURATION

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ABSTRACT

A central task in the field of health status measurement involves eliciting valuations for health states. When these valuations are then used in estimating patient benefit as part of a cost-utility analysis, a key issue is how the duration of a health state affects its value. Previous studies suggest that while people adapt to chronic illness over time there is a "maximal endurable-time" beyond which the state becomes intolerable.

The pilot study reported here examines the feasibility of using the visual analogue scale method to elicit within-respondent valuations for health states of different durations. It explores the hypothesis that while less severe states are seen as more acceptable the longer they last, more severe health states are seen as increasingly intolerable.

18 members of the general population ranked and rated 15 health states with durations of 1 month, 1 year and 10 years. The valuation given to a health state appeared to be a function of both its severity and its duration. The median score for a state lasting 10 years was lower than when the same state lasted for 1 year or 1 month, supporting the concept of a "maximal endurable time". Valuations for mild states did not however increase with duration.

INTRODUCTION

A central task in the field of health status measurement involves eliciting valuations for health states using one or more different scaling methods [1]. Each of these methods requires respondents to form subjective judgements about the relative severity of health states, which are often described using standard classifications [2-4]. These judgements are then expressed as numeric scores, or valuations. Differences in valuations given to the <u>same</u> state may be attributable to a number of factors including the valuation method used [5-7], characteristics of the respondents [8,9] or duration of the state.

The differences produced by these factors may have significant implications for the further use of the health state valuations. In cost-utility studies, valuations are multiplied by duration to derive an estimate of patient benefit. It is usually assumed that the valuation of a state is linearly related to the time spent in that state i.e. any state lasting 10 years is twice as good as the same state lasting 5 years, due to the doubled duration rather than to any inherent change in value of the health state itself. Clearly if this assumption does not hold, the method of incorporating duration into cost-utility analyses needs to be re-examined.

There is limited evidence that duration can have a significant effect on health state valuations. Sackett & Torrance [9] found, from a sample of about 200 members of the general public, that for three conditions with durations of 3 months, 8 years and a lifetime, mean daily health state valuations (as measured by the time-trade-off technique) declined as duration in the state increased. They argued that "the duration of time that patients will spend in specific health states must be considered when assessing the utility, as well as the cost, of health programs" (*op. cit.* p703).

Using the same three time periods, Sutherland et al [10] found, from a convenience sample of 20 colleagues, that the proportion preferring immediate death to varying durations in each of 5 health states increased as the duration of the states increased. The main increase occurred between 3 months and 8 years, with little additional effect between 8 years and a lifetime. This led the authors to conclude that people had some concept of "maximal endurable time" for each dysfunctional state, which, once reached, meant that "any additional time spent in that state was regarded as a penalty, and assigned a negative value relative to death" (*op. cit.* p305).

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More recently, Ohinmaa & Sintonen [11] used category rating, in the form of a visual analogue scale (VAS), to elicit valuations from a convenience sample of 60 health economics students. They found that valuations were higher for states lasting 1 month than 1 year and higher for states lasting 1 year than 10 years. As duration of health states increased the valuation given to "dead" also increased, thus if the health state valuations were then transformed onto a 0-1 scale (where 0 represented dead), the differences between the durations would be even wider.

Although more severe states may be seen as increasingly intolerable the longer they last, it is also plausible that less severe states may be seen as less intolerable the longer they last, since people are able to adapt to them. If this is the case, then although no changes would be expected in the rank ordering of states as duration increases (except possibly for the position of "immediate death"), some widening of the distances between the states on the VAS could be expected.

This paper reports on a pilot study designed to explore the hypothesis that, while less severe states are seen as more acceptable the longer they last, more severe health states are seen as increasingly intolerable. The study examines the feasibility of using the VAS method to elicit within-respondent valuations for health states of different durations.

METHODS

Interviews were conducted by 6 professional interviewers from Social and Community Planning Research. Each interviewer was asked to conduct 3-4 interviews in order to achieve a sample of 20. This sample was not intended to be representative of the general population but was a quota sample of adults aged 18 and over living in a range of residential areas convenient to the interviewer. Interviews were conducted over a 2-week period in September 1993.

Health state description: The EuroQol classification describes health status in 5 dimensions with no disease specificity (Figure 1). Health states are described by combining one statement from each dimension to produce a health state identified by a 5-digit code e.g. 21111 describes the state in which a person has some problems in walking about but no problems on any of the other dimensions.

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Interview: Respondents were shown 15 different EuroQol states, chosen to represent a range of severity and including "Unconscious" and "Immediate Death", each written on a separate card (15 states had previously been identified as the maximum number that any one respondent could be expected to cope with in one interview). It was stated that each state (except "Immediate Death") would last 10 years without any change and what happened thereafter was not known and should not be taken into account. Respondents were then asked to rank the 15 states in order from best to worst; and then to rate the 15 states on a VAS, with endpoints of 100 (best imaginable health state) and 0 (worst imaginable health state). A method of "bisection"[1] was used.

The cards were then shuffled, and presented once more to the respondent, who was then asked to rank and rate them again but this time to imagine that they last for one month. When this second cycle was complete, a third cycle was initiated in which the duration of the state was one year.

Analysis: Raw scores were transformed onto a 0-1 scale in order to produce a comparable unit of health across all respondents. Full health (the 11111 state) and dead were assigned scores of 1 and 0 respectively for each respondent and all other health state scores were adjusted accordingly, by implication allowing for negative scores.[2]

The median was chosen as the measure of central tendency for health state valuations because the distribution of health state scores was highly skewed and the median does not give undue weight to outliers. As a result the non-parametric Wilcoxon matched-pairs signed-ranks test was used to test for differences between durations (significance level $p<0.05$). Mann-Whitney U tests

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[1] Bisection is designed to generate an interval scale [12]. Respondents first rated their best and worst ranked states on the VAS. They then chose from the remaining states the one whose value was roughly halfway between the values assigned to the two extreme states. Having rated that state they then chose and rated two further states, one whose value was halfway between the mid-state and the top state, and the other whose value was halfway between the mid-state and the bottom state. Respondents then rated the remaining 10 states in any order they chose.

[2] The transformed score, T, for a health state h, is given by the formula:

$$T = \frac{\text{(score for h - score for Immediate Death)}}{\text{(score for full health - score for Immediate Death)}}$$

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were used to test for effect of background variables (p<0.01 in view of the relatively large number of tests conducted).

Regression analysis was used to estimate the relationship between the valuations for the different durations. The dependent variable was first the scores given to states lasting for 1 year and then for 1 month, while the independent variable was the scores given to states lasting for 10 years. All observations were entered simultaneously, creating 18x13=234 data points for each regression.

RESULTS

18 interviews were achieved. 14 of the respondents were women; mean age was 47.9 years (s.d=19.2) and 39% of respondents had minimum schooling (left at age 15 or 16). 56% reported current problems on at least one of the EuroQol dimensions while 28% had themselves experienced serious illness at some stage in their life. Experience of illness in close others was even more common, reported by 89% of the sample. The main reference was to a close family member suffering from cancer but stroke, asthma and heart attack were also mentioned. Time and length of illness ranged widely, from an event occurring and finishing more than 5 years ago, to one with recent onset and still continuing.

Ranking of states: Although there were no statistically significant differences for the different durations (Table 1), the number of times a state was ranked lower than death increased with a longer duration: thus when states lasted for 1 month, 1 year and 10 years, the 6 worst states were ranked lower than death 10, 19 and 27 times respectively by the 18 respondents (Table 2).

Raw scores: There were no statistically significant differences between median scores for the same state for different durations except for "Immediate Death" which had a significantly higher score when states lasted for 10 years than when they lasted for 1 year or 1 month (Table 3). When valuing death, 10 respondents gave a consistent score of 0, while 2 more rated it between 0 and 5 for all durations. The other 6 respondents gave a greater score to death as duration increased: respondent #2 scored death at 9,10 and 89; #3 at 5,5,55; #6 at 0,0,41; #8 at 15,25,45; #9 at 0,12,16; and #12 at 0,10,8. As in the ranking, the most severe states were rated worse than

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death more often as the time spent in them increased. Thus the number of states rated worse than death are 11, 14 and 34 for the three durations (Table 4).

Transformed scores: For 7 of 13 states the median score for a duration of 10 years was significantly lower than the median score for a duration of 1 year or 1 month (Table 5). Four further states had lower scores which did not reach significance, while two mild states had effectively the same median scores across the 3 durations. None of the background variables, including experience of illness, showed any systematic effect on transformed scores for states lasting 1 month, 1 year or 10 years.

Respondents' comments: Answers to the question "How did the differences in the length of time spent in each state affect your answers?" suggested that for 12 respondents, duration did affect the scores given to states, 8 in a way which could be considered consistent with the concept of maximal endurable time (respondents 2,4,6 and 8 to 12, see Figure 2). A further 4 respondents effectively replied "not much", an attitude reflected in the similar scores they gave to the same health state across the 3 durations, including a score of 0 for "Immediate Death" for each duration. These four respondents did not differ from the others in background characteristics.

Regression analysis was used to investigate the relationship between transformed scores given to health states when they lasted for 10 years and scores given to the same health states when they lasted for 1 year or 1 month. There was no single regression line, linear or non-linear, which passed the Ramsey-reset diagnostic test [13]. This suggested that the impact of duration on health state valuations differed according to the severity of the health state. This is shown in Figures 3 and 4 which plot the mean valuations for duration of 10 years against the mean valuations for 1 year and 1 month respectively. It can be seen that, at least for the purposes of estimating regression equations, the states fall into 3 groups: 1) states A + D 2) states B,C,E-G 3) states H-M (N.B. state N refers to the standardised value for state 11111 which is equal to 1.00 regardless of duration). Intercept dummies were therefore introduced for these groups of states. The most parsimonious models were as follows:

1) For state 33333 and unconscious:

$VAS (1 \text{ month}) = 0.06 + 0.24 * VAS(10 \text{ years})$

$VAS (1 \text{ year}) = 0.01 + 0.28 * VAS(10 \text{ years})$

2) For states 33321, 22233, 22323, 32221, 21232:

VAS (1 month) = 0.26 + 0.24*VAS(10 years)

VAS (1 year) = 0.25 + 0.28*VAS(10 years)

3) For states 11122, 11121, 12111, 21111, 11112, 11211:

VAS (1 month) = 0.56 + 0.24*VAS(10 years)

VAS (1 year) = 0.54 + 0.28*VAS(10 years)

For the 1 month and 1 year models the goodness of fit statistics were acceptable (adjusted r^2 of 0.58 and 0.70 respectively) and both models passed the Ramsey-reset test. In addition, as Table 6 shows, the estimated scores based on these models were good predictors of the actual (mean) scores, particularly when the scores for 10 years were used to predict those for 1 year.

DISCUSSION

The results presented here suggest that the valuation given to a health state is a function of both its severity and its duration. Although there were no statistically significant differences in rankings or raw scores across the different durations, the more severe states were more often ranked and rated lower than death as duration increased. This meant that transformed scores were different across durations, and in fact it was found that for all but 2 states the transformed median score for a state lasting 10 years was lower (and in many cases significantly lower) than when the same state lasted for 1 year or 1 month. On the basis of these results, the null hypothesis that states are perceived to be the same regardless of their duration can be rejected. Some states, particularly the more severe ones, become more intolerable the longer they last. This is supported by comments from a number of the respondents such that "Some of them you would not mind for a month but 10 years wouldn't be bearable for you or your family". It would appear that the "maximal endurable time" results obtained by Sutherland et al from health professionals are reproduced by a similar sized sample of the general public.

The results do not lend support however to the hypothesis that valuations for mild states increase as the time spent in them increases. Thus the notion that people adapt to dysfunctional health states is not identified in this study although other studies have shown a direct positive link

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between time in chronic illness and adaptation to that illness [14,15]. The discrepancy may be due to the valuations elicited here being for <u>hypothetical</u> health states and coming from a general population rather than a patient group. While general public valuations may be more appropriate in determining priorities for health care resources, they may differ from those of patients. The choice of time periods used in this study was arbitrary, aiming to cover both short and longer term illness but also to be as realistic as possible for older and younger respondents alike. There is a case for including much longer time periods than 10 years, considering the many chronic non life-threatening diseases that are prevalent today.

The effect of time spent in a state is inevitably not a simple function of the actual period of time, but also of <u>when</u> that time period occurs. The age of respondents in this study ranged from 18yrs to 78yrs. The implications to a 20-year-old of a health state lasting 10 years are likely to be very different from those of a 70-year-old, not just because of differing expectations of survival but also related to one's stage of life. Wright [16] suggested that there are certain stages of life during which it is particularly important to be healthy, namely 'bringing up children' and 'infancy'. Significant sex differences also emerged where women emphasised bringing up children, looking after relatives and coping with the death of a spouse, while men emphasised starting school, setting up home for the first time and being at the peak of their earning power. A 20-year-old male valuing a poor health state which lasts for 10 years and is then followed by death may well be thinking also of the loss of his time of peak earning capacity and his resulting valuation will not relate purely to the health state in question. While no significant differences of age or sex of respondent emerged in this study, sample size was small. In further studies consideration should be given not only to the appropriate range of durations used but also to the stage at which the state occurs in a respondents' lifetime

It is possible that by explicitly drawing each respondent's attention to the particular duration of each state that the effect of duration was exaggerated. However, the fact that different respondents appeared to be influenced by duration in a similar way and that the results are compatible with those from previous studies, suggest that these findings are robust and at the very least caused by factors other than questionnaire design or "framing" effects alone.This study was also specifically designed to investigate the <u>within-respondent</u> effect of duration on health state valuations and it is uncertain whether the results presented here would be reproduced from <u>across-respondent</u> comparisons.

These results are important for those interested in using health state valuations in clinical decision-making or to inform resource allocation decisions. Failure to recognise the possibility of maximal endurable time could lead to erroneous choices, particularly when considering more severe states. Most of the commonly used health status measures are not based on individuals' preferences for health states and are derived wholly independently of the consideration of duration of health state. Of those that are based on individual preferences, the McMaster health state classification system [3] incorporates a duration of 70 years (lifetime) into the TTO procedure used to derive health state preferences, the Rosser Classification of Illness States [2] asks respondents to consider "people who are all of the same age - either young adults or middle aged", and the EuroQol [4] incorporates a duration of 1 year into the standard valuation procedure. It may indeed be that for the same scoring system, different weights are required for different durations.

To date, only a handful of studies have explored the effect of duration of peoples' perceptions of health states and most of these have been small or have used convenience samples. Further investigation should focus on whether the effects of increasing duration can be replicated using other health state descriptive systems, with respondents with varying experience of illness in both severity and duration (especially those who have long term severe chronic illness) and indeed with respondents of different ages who will have differing expectations of survival. It also remains to be determined whether adaptation to illness plays a significant role in increasing the valuations of milder states.

REFERENCES

1. Brooks RG. Scaling in health state measurement: an outline, guide and commentary. *Swedish Institute of Health Economics Report 4*. Lund, Sweden; 1988.

2. Rosser R, Kind P. A scale of valuations of states of illness: is there a social consensus? *International Journal of Epidemiology* 1978; 7(4): 347-358.

3. Torrance GW, Boyle HH, Horwood SP. Application of multi-attribute utility theory to measure social preferences for health states. *Operational Research* 1982; 30(6): 1043-1069.

4. EuroQol Group. EuroQol; a new facility for the measurement of health-related quality of life. *Health Policy* 1990; 16: 199-208.

5. Hornberger JC, Redelmeier DA, Petersen J. Variability among methods to assess patients' well-being and consequent effect on a cost-effectiveness analysis. *Journal of Clinical Epidemiology* 1992; 45: 505-512.

6. Froberg DG, Kane RL. Methodology for measuring health-state preferences - II: Scaling methods. *Journal of Clinical Epidemiology* 1989a; 42: 459-471.

7. Read JL, Quinn RJ, Bewick DM, Fineberg HV, Weinstein ML. Preferences for health outcomes: comparison of assessment methods. *Medical Decision Making* 1984; 4(3): 315-329.

8. Froberg DG, Kane RL. Methodology for measuring health-state preferences - III: Population and context effects. *Journal of Clinical Epidemiology* 1989b; 42: 585-592.

9. Sackett DL, Torrance GW. The utility of different health states as perceived by the general public. *Journal of Chronic Diseases* 1978; 31: 697-704.

10. Sutherland HJ, Llewellyn-Thomas H, Boyd NF, Till JE. Attitudes towards quality of survival: the concept of maximal endurable time. *Medical Decision Making* 1982; 2: 299-309.

11. Ohinmaa A, Sintonen H. The effect of duration on the value given to the EuroQol states. In: Busschbach J et al (eds) *EuroQol Plenary Meeting 1993*, Department of Public Health, Erasmus University Rotterdam, 1994.

12. Stevens SS. Issues in psychophysical measurement. *Psychological Review* 1971; 78:426-450.

13. Ramsey JB. Tests for specification errors in classical linear least squares regression models. *Journal of the Royal Statistical Society* 1969; 31: 350-371.

14. Meyerowitz BE. Postmastectomy coping strategies and quality of life. *Health Psychology* 1983; 2(2): 117-132.

15. Cassileth BR, Lusk EJ, Strouse et al. Psychosocial status in chronic illness: a comparative analysis of six diagnostic groups. *New England Journal of Medicine* 1984; 311: 506-511.

16. Wright S. Age, sex and health: a summary of findings from the York Health Evaluation Survey. *CHE Discussion Paper 15*. University of York, England; 1986.

Table 1: Ranking of Health States

Euroqol Health State	1 Month		1 Year		10 Years	
	mean	median	mean	median	mean	median
11111	1.06	1.00	1.06	1.00	1.06	1.00
11112	3.17	2.50	3.61	3.00	3.22	2.50
21111	3.83	4.00	4.00	4.00	4.33	4.50
11121	4.00	4.00	4.00	3.50	4.17	3.50
11211	4.22	4.00	4.00	3.50	4.22	4.00
12111	4.89	5.00	5.28	6.00	5.50	6.00
11122	6.33	7.00	5.44	5.50	6.00	7.00
32211	9.17	9.00	9.72	10.00	10.06	9.50
21232	9.50	9.00	8.94	9.00	8.67	8.50
22323	9.56	9.00	9.72	10.00	9.61	9.50
22233	10.44	10.00	10.94	10.50	11.06	11.00
33321	10.94	12.00	11.29	12.00	11.39	12.00
33333	13.33	13.00	13.78	13.50	13.72	14.00
Unconscious	13.44	14.00	13.00	14.00	12.22	12.50
Death	14.28	15.00	13.89	14.00	13.11	14.50

Table 2: Number of Respondents Preferring "Immediate Death" to Health State of Stated Duration as per Ranking (n=18)

EuroQoL Health State	1 Month	1 Year	10 Years
22323	1	1	2
21232	1	2	2
22233	2	4	6
33321	1	3	5
Unconscious	1	2	3
33333	4	7	9

Table 3: Effect of Duration on Median Raw VAS Scores for Health States Interquartile Ranges Shown in Brackets

	1 Month	1 Year	10 Years
11111	100 (98-100)	100 (99-100)	100 (98-100)
11112	90 (79-95)	85 (69-91)	85 (60-90)
21111	81 (70-90)	80 (70-85)	77 (58-85)
11121	80 (64-92)	78 (67-89)	73 (54-81)
11211	75 (50-85)	75 (70-86)	75 (69-88)
12111	71 (58-76)	71 (59-81)	78 (45-85)
11122	70 (48-75)	73 (51-76)	60 (38-80)
32211	44 (25-65)	45 (24-65)	38 (15-50)
22323	35 (25-51)	40 (29-50)	35 (20-55)
21232	35 (23-46)	41 (28-45)	38 (14-60)
22233	25 (20-35)	28 (20-35)	19 (12-31)
33321	23 (13-35)	25 (9-40)	23 (10-34)
Unconscious	10 (4-14)	10 (5-11)	10 (4-18)
33333	5 (0-12)	4 (0-10)	3 (0-15)
Death	0 (0-4)	0 (0-10)	3 (0-42)[ab]

VAS scores range from 100 (best) to 0 (worst)

(a) significant difference between median values for 10 years and those for 1 month

(b) significant difference between median values for 10 years and those for 1 year

Table 4: **Number of Respondents Preferring "Immediate Death" to Health State of Stated Duration as per VAS (n=18)**

EuroQoL Health State	1 Month	1 Year	10 Years
22323	1	1	3
21232	1	1	3
22233	2	4	8
33321	2	1	6
Unconscious	1	2	5
33333	4	5	9

Table 5: **Effect of Duration on the Median of the Transformed VAS Scores for Health States**
Interquartile Ranges Shown in Brackets

	1 Month	1 Year	10 Years
11111	[1.00]	[1.00]	[1.00]
11112	0.90 (0.79-0.95)	0.85 (0.60-0.95)	0.84[c] (0.49-0.90)
21111	0.81 (0.70-0.90)	0.78 (0.70-0.84)	0.68[c] (0.57-0.84)
11121	0.80 (0.60-0.93)	0.78 (0.62-0.89)	0.65[c] (0.54-0.81)
11211	0.75 (0.50-0.85)	0.75 (0.68-0.82)	0.74 (0.64-0.83)
12111	0.71 (0.58-0.78)	0.71 (0.59-0.81)	0.72 (0.44-0.81)
11122	0.56 (0.45-0.78)	0.63 (0.49-0.77)	0.47 (0.32-0.80)
32211	0.41 (0.24-0.64)	0.30 (0.20-0.54)	0.21[cd] (0.05-0.32)
22323	0.35 (0.19-0.51)	0.38 (0.26-0.50)	0.17[cd] (0.06-0.42)
21232	0.34 (0.15-0.46)	0.40 (0.13-0.45)	0.14[cd] (0.04-0.43)
22233	0.25 (0.12-0.35)	0.25 (0.03-0.35)	0.05[cd] (-0.41-0.27)
33321	0.18 (0.09-0.27)	0.20 (0.06-0.27)	0.10 (-0.17-0.22)
Unconscious	0.08 (0.02-0.13)	0.05 (0.0-0.10)	0.04 (-0.02-0.10)
33333	0.05 (-0.01-0.12)	0.03 (-0.11-0.11)	-0.03 (-0.73-0.15)
Death	[0]	[0]	[0]

(c) significant difference between median values for 10 years and those for 1 month

(d) significant difference between median values for 10 years and those for 1 year

Table 6: Comparison of Actual and Estimated Mean Health State Valuations

Code	State	Actual Value	Estimated Value	Difference
	Mean for 1 Month			
A	33333	-.02	.03	-.05
B	33321	.20	.26	-.06
C	22233	.22	.26	-.04
D	Unconscious	.11	.06	.05
E	22323	.32	.30	.02
F	32221	.42	.31	.11
G	21232	.30	.32	-.02
H	11122	.61	.68	-.07
I	11121	.78	.72	.06
J	12111	.65	.73	-.07
K	21111	.80	.74	.06
L	11112	.85	.74	.11
M	11211	.65	.74	-.10
	Mean for 1 Year			
A	33333	-.04	-.20	-.02
B	33321	.22	.25	-.03
C	22233	.20	.25	-.05
D	Unconscious	.03	.01	.02
E	22323	.31	.30	.01
F	32221	.38	.31	.07
G	21232	.33	.32	.01
H	11122	.62	.67	-.06
I	11121	.76	.72	.03
J	12111	.70	.73	-.03
K	21111	.77	.74	.03
L	11112	.77	.75	.03
M	11211	.75	.75	.00

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Figure 1: EuroQoL Classification System

Mobility

1   No problems in walking about
2   Some problems in walking about
3   Confined to bed

Self-Care

1   No problems with self-care
2   Some problems washing or dressing self
3   Unable to wash or dress myself

Usual Activities

1   No problems with performing usual activities
       (e.g. work, study, housework, family or leisure activities)
2   Some problems with performing usual activities
3   Unable to perform usual activities

Pain / Discomfort

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

Anxiety / Depression

1   Not anxious or depressed
2   Moderately anxious or depressed
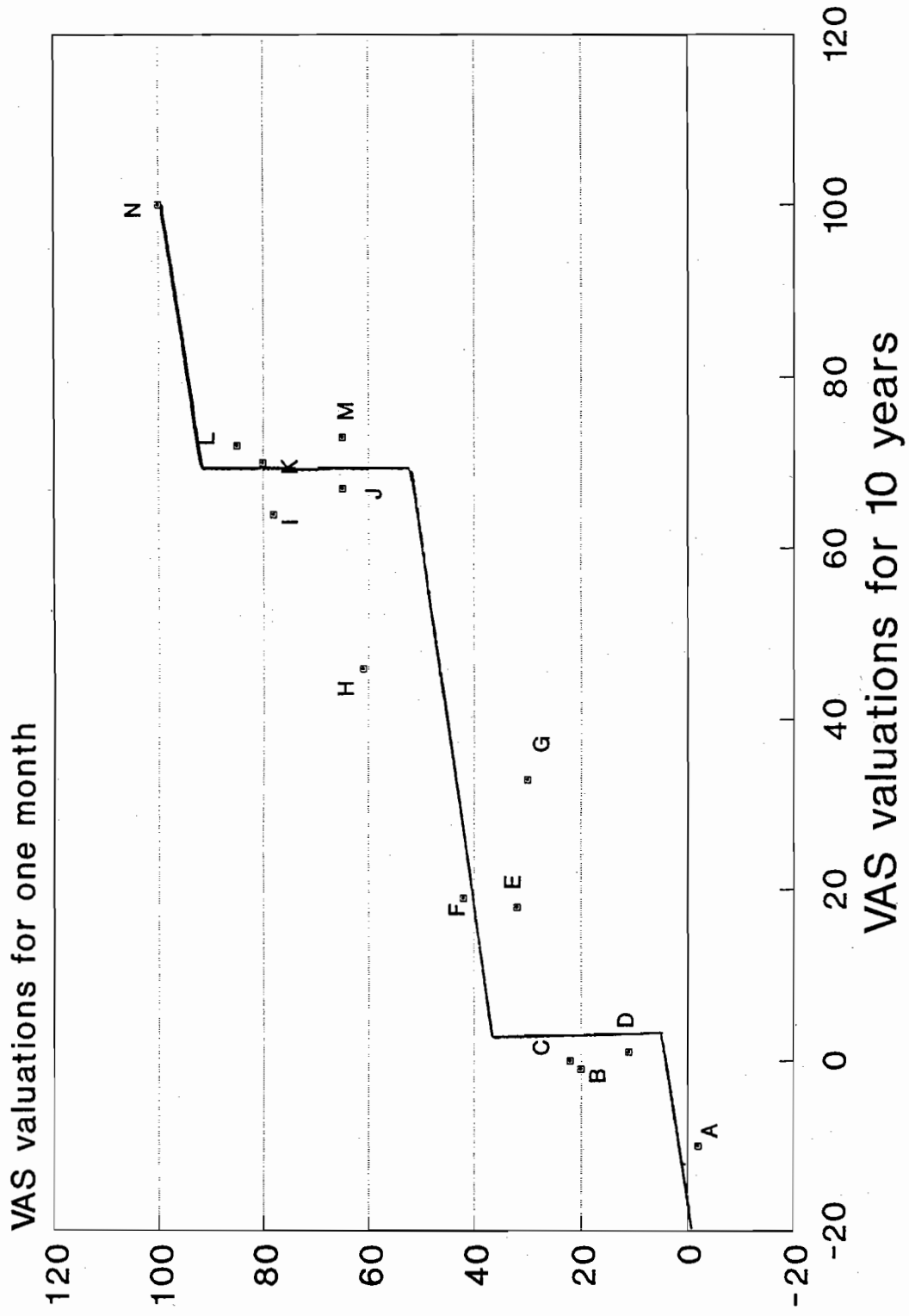3   Extremely anxious or depressed

Figure 2

How did the differences in the length of time spent in each state affect your answers?

1   drastically

2   the longer in a state I think I would rather die

3   considerably

4   Whereas I wouldn't mind being confined to bed for 1 month, I wouldn't like it for 1 year or 10 years

5   I wouldn't mind being in the state over a month - it's better if it's gradual

6   I wouldn't want to be very ill for 10 years but for 1 year I think I could cope

7   A lot

8   For the longer ones, if I was in a lot of pain I'd want to be dead

9   Some of them you would not mind for a month but 10 years wouldn't be bearable for you or your family.

10   They did affect it because in a short period of time you would put up with more than in a 10 year period

11   Long distances of time would be a lot worse, 1 month wouldn't be so bad

12   One month is much more tolerable

13   No answer given

14   No answer given

15   The lengths of time didn't make any difference

16   They didn't make any difference

17   Not very much really

18   They didn't

Figure 3
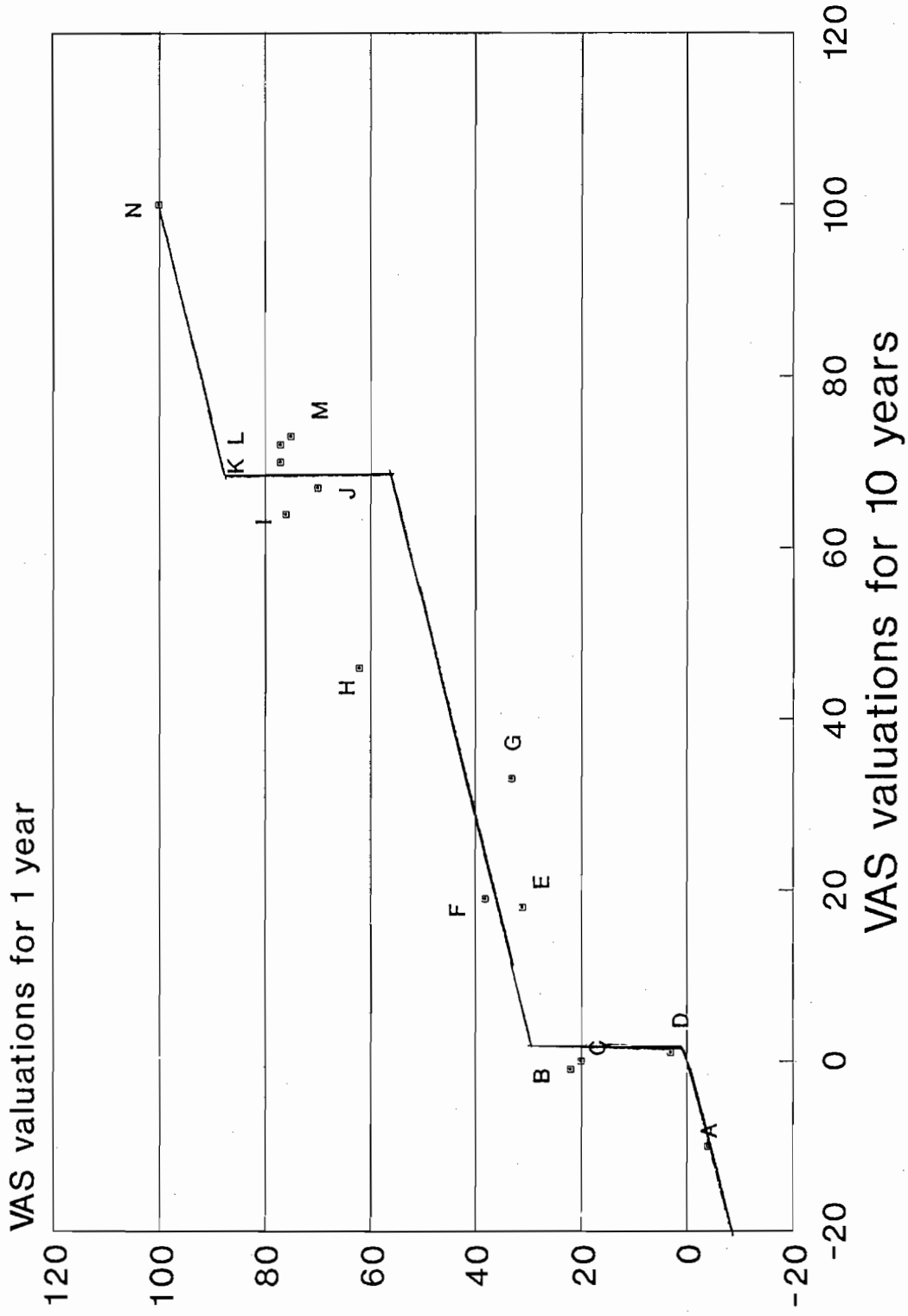

Means for 10 years and one month

VAS valuations for one month

VAS valuations for 10 years

Figure 4

Means for 10 years and 1 year

VAS valuations for 1 year

VAS valuations for 10 years